Ways of Evaluating and Mitigating CO_2 Emissions in Goods Transport at Firm Level

Erik van Agtmaal
Managing Partner
Green Logistics Consultants Group

Green logistics consultants group

- The Green Logistics Consultants Group is an **international collaborative network of consultants and researchers** with a general or more specific expertise in areas where companies, authorities and governments can improve the environmental performance of their supply chains or transport infrastructure.

- Our focus is on an accurate, complete, consistent and transparent **measurement** of energy consumption, greenhouse gas emissions and other air contaminants caused by logistics activities and on a wide range of effective and equitable **solutions** to reduce energy consumption and emissions from logistics activities and total supply chains.

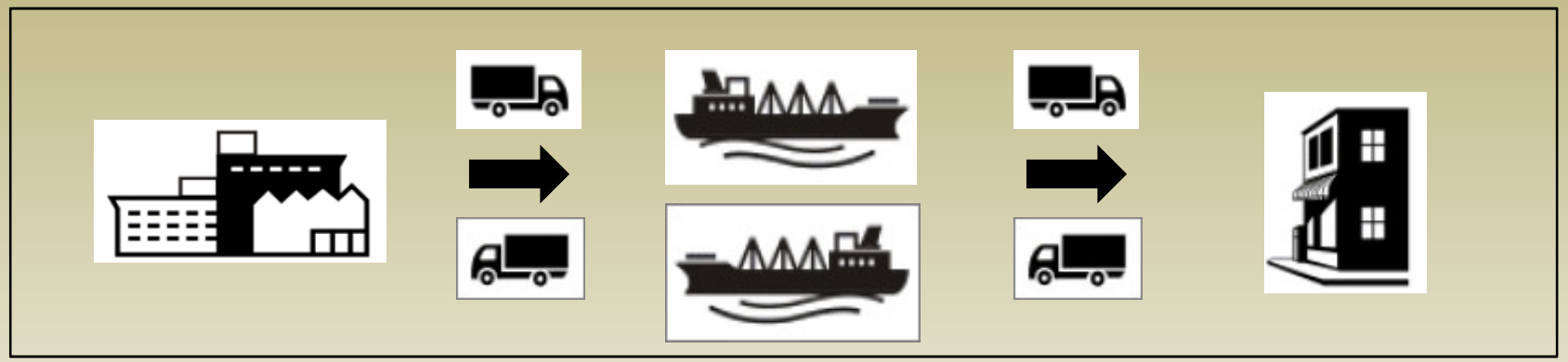
Partners in the Green Logistics Group

Quantifying emissions

Quantifying emissions provides the baseline from which emission reduction strategies can be developed and performance can be measured over time.

It allows companies to set goals, to understand the tradeoffs between choices and to optimize their modes of freight transport.

Quantifying emissions of supply chains

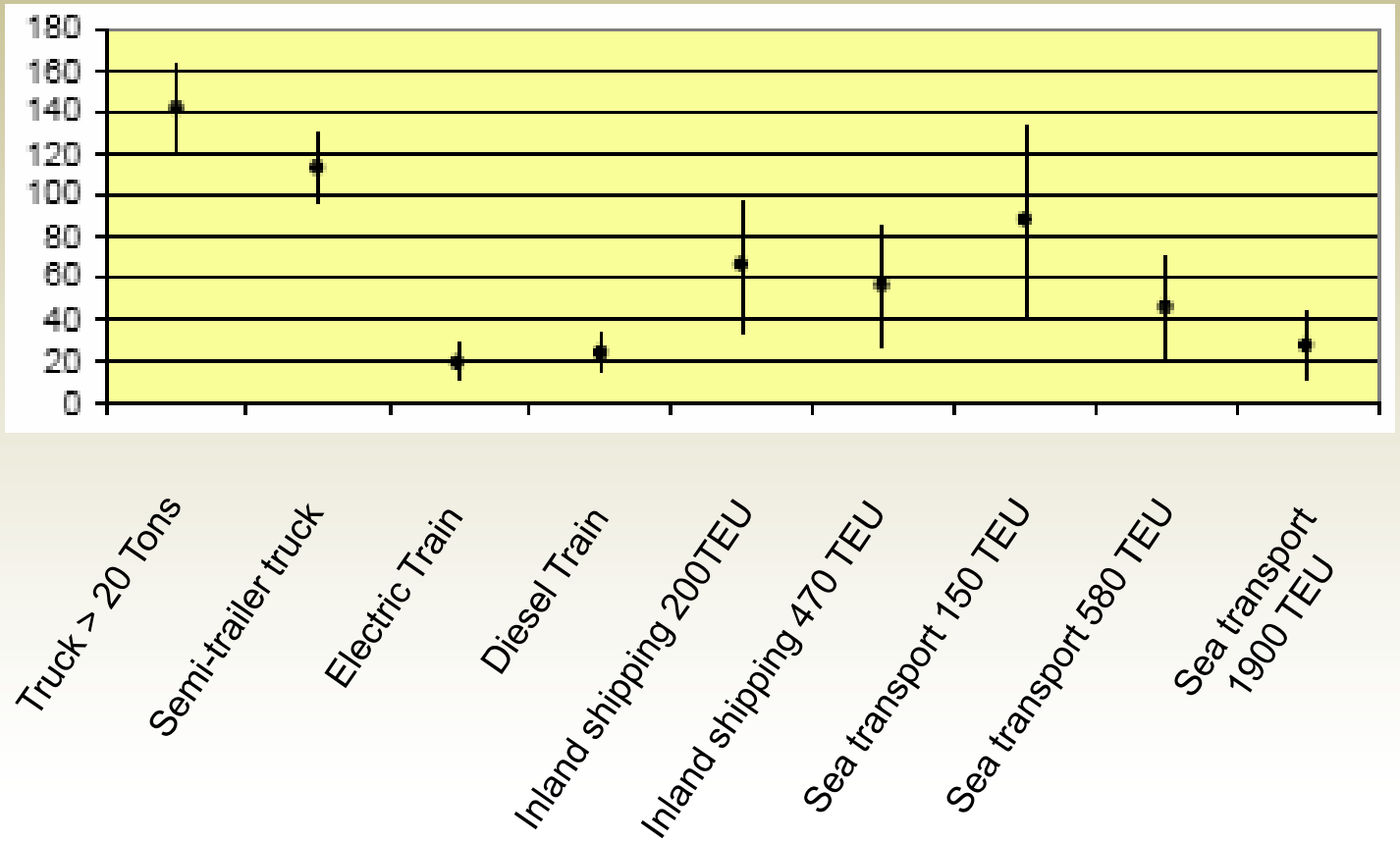


A supply chain emission inventory has to take into account:

- Transport before and after the leading transport mode
- Not used capacity (return trips, empty containers, …)
- Load factors
- …

Quantifying emissions of supply chains

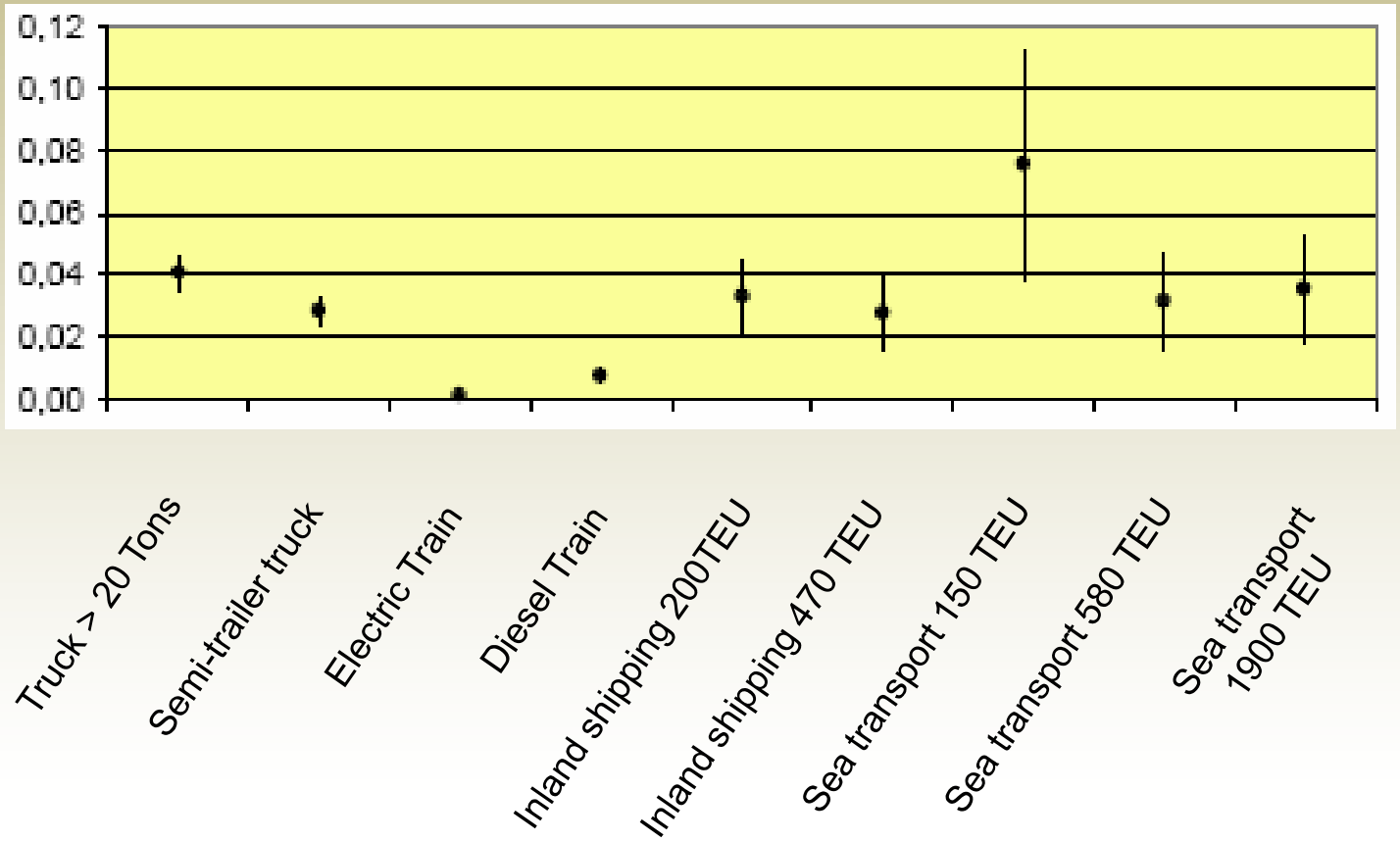
CO2 (g/ton km) long distance container transport



Source: STREAM, CE DELFT, 2008

Quantifying emissions of supply chains

PM<10 (g/ton km) long distance container transport



Source: STREAM, CE DELFT, 2008

Quantifying emissions of supply chains

- ✓ Large discrepancies between outcomes of different CO2 calculation tools
- ✓ Inconsistencies in available data
- ✓ Differences in results of more in-depth research

Emissions from sea-going vessels in the Belgian waters :

- Study A: 1849 kton CO2/year
- Study B: 720 kton CO2/year

The need for international procedures and data

The advantage of a standard procedure and methodology to quantify emissions from freight transport activities at the corporate level are obvious. It facilitates:

- Companies to launch logistics environmental initiatives
- The exchange of environmental data within supply chains
- The measurement of progress
- Verification and third party audits
- Benchmarking opportunities
- Suppliers to meet environmental requirements
- The integration of standard environmental data into future transport and supply chain modelling and management applications
- The establishment of voluntary emission registries
- The introduction of certification and labels

Current standards and data

- Emissions from mobile sources
  - ✓ GHG protocol for mobile sources (WBCSD/WRI)
  - ✓ ISO 14064
  - ✓ Procedures US Environmental Protection Agency
  - ✓ Procedures California Climate Action Registry
  - ✓ Emission factors IPCC
  - ✓ Emission factors US EPA,
  - ✓ Emission factors EMEP/CORINAIR European Environment Agency
  - ✓ Other Environment Agencies and research institutes
- Life cycle greenhouse gas emissions of goods
  - ✓ ISO 14040 en 14044
  - ✓ BSI Publicly Available Specification PAS 2050 (under development)

Emissions of supply chains - initiatives

- US EPA-Smartway

  Development of protocols and tools which will help companies to calculate their CO_2 and criteria pollutant emission footprint from goods movement across all transportation modes. EPA envisions a model that can be incorporated into existing commercial logistics software.

- NTM in Sweden

  The Network for Transport and Environment, NTM, is a Swedish non-profit organisation, set up in 1993 with the aim of establishing a common set of values for calculating the environmental performance for various modes of transport.

- Connekt in the Netherlands

  Connekt, a public-private initiative made up of 80 Dutch government bodies, companies and knowledge institutes finances two current projects to develop (i) procedures and guidelines for measuring emissions from logistics sources and (ii) a modelling tool to calculate emissions in supply chains.

Emissions of supply chains – co-ordination

- A strong need for co-ordination and co-operation
- Not only for procedures but also for **data and data availability**
- GHG emissions and other pollutants such as NO_x, SO_2 and PM<10
- Input from national data sources
- Consistency with other more general procedures related to total life cycle emissions

Recommendation to the ministers of transport

- ✓ Avoid a divergence in the development of several procedures for calculating emissions related to goods movements and logistics activities.
- ✓ Avoid duplication in research
- ✓ Improve co-ordination and co-operation with the aim of sharing information and data
- ✓ Create an international platform for the consolidation, development, maintenance and dissemination of common procedures and data
- ✓ Support current initiative in this field

More info:

Erik van Agtmaal
Managing Partner

Tel. + 32 (0)2 460 17 30

erik.van.agtmaal@greenlogisticsconsultants.com

Website: www.greenlogisticsconsultants.com