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Supply Chain Accounting and Harmonization of Metrics

THE NEED FOR WORLDWIDE PROCEDURES AND DATA SOURCES

SMARTWAY INTERNATIONAL CONFERENCE
UNIVERSITY OF MICHIGAN, ANN ARBOR, MICHIGAN
DECEMBER 2008

Our group

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

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

A world wide group of experts working in clusters on specific assignments

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Our services

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Our partners help companies, organisations and public authorities:

- to understand the consequences of climate change on future supply chains and transport activities
- to understand what legislation is on the way
- to establish and maintain emission inventories
- to develop sustainable supply chain strategies
- to realise tangible eco-efficient logistics measures

For more information www.greenlogisticsconsultants.com

Quantifying emissions

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- Quantifying emissions enable transport providers to assess the emissions from their transport systems. It gives shippers as well as receivers of goods, such as retailers, the opportunity to calculate their supply chain emissions footprint
- Quantifying emissions from mobile sources and supply chains provides the baseline from which emission mitigation 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

But:

Quantifying is not the final goal, management and reduction of emissions is !

Differences in methodologies
Ex. in belly air cargo

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Airlines use different methodologies for the allocation of their fuel consumption on passengers and freight which makes it difficult to compare.

•All fuel consumed is allocated to the passenger
•All fuel consumed is attributed to the passenger services less the incremental increase of fuel needed to carry cargo in addition
•Attribution of the same amount of fuel to a tonne of freight as to one tonne of passenger including their baggage
•Multiplication of the passenger weight with a factor of between 1,4 and 2 to account for the weight that is attribut able to a number of in-flight passenger services (e.g. ICAO methodology)
•According to their revenue shares

Lack of common procedures

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The lack of common procedures results in a low **transparency**, **extra costs**, **waste of time** and **absence of verification** and as a consequence in a **low confidence** in initiatives and communicated project assertions by companies.

Advantages

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Standard procedures would facilitate:

- companies to launch logistics environmental initiatives
- the exchange of environmental data within supply chains
- collaborative projects
- the measurement of progress
- verification and third party audits
- benchmarking opportunities
- suppliers to meet environmental requirements
- the use of reported emissions for academic research
- the integration of standard environmental data into future transport and supply chain software applications
- the establishment of voluntary emission registries
- the introduction of certification and labels

Ex. Network for Transport and Environment in Sweden

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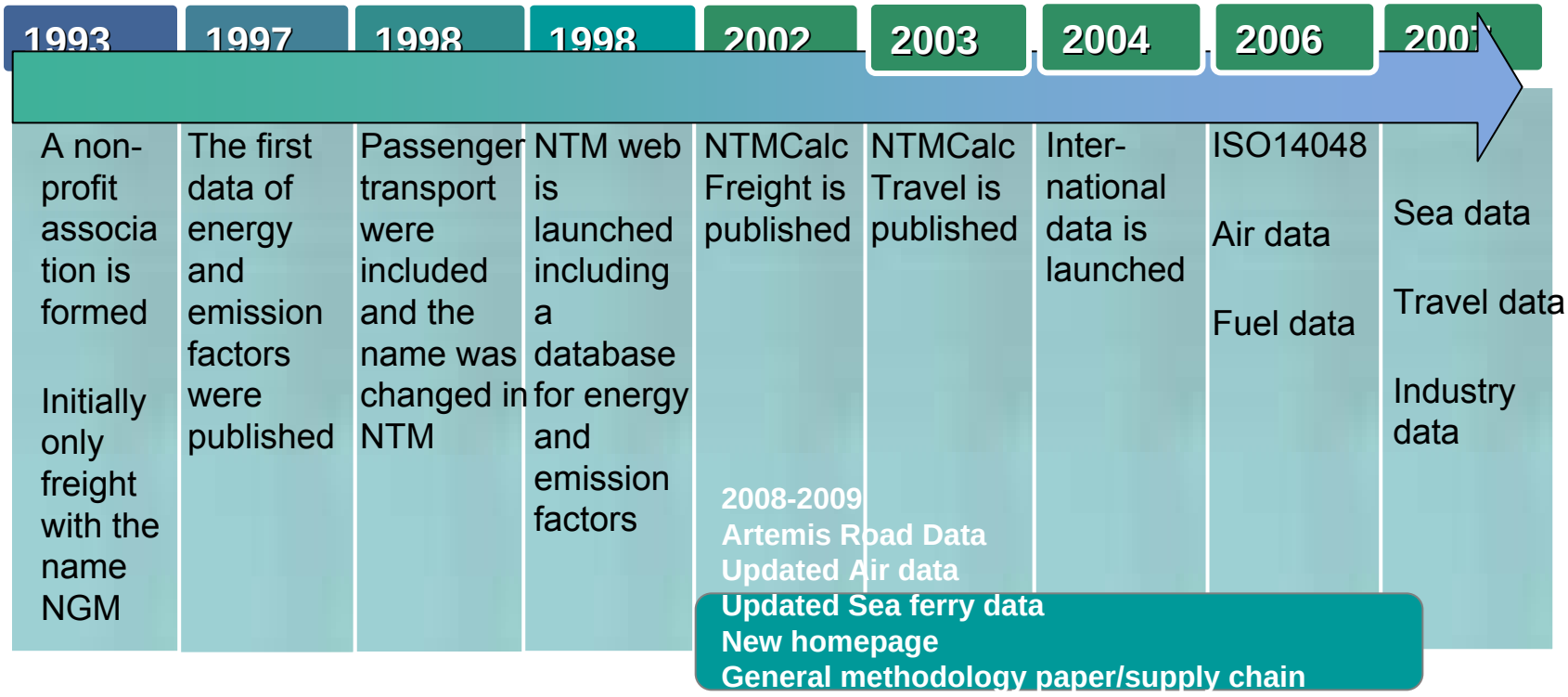
Background



Many organisations are active in the field of procedures and guidance

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And many others

International Post Corporation

ELUPEG

NTM
Network for Transport and Environment

ICAO · OACI · ИКАО

Duurzame Logistiek connekt

Divergence in the development of several procedures and guidelines and more specifically related to goods movements and logistics activities.

Towards a common approach

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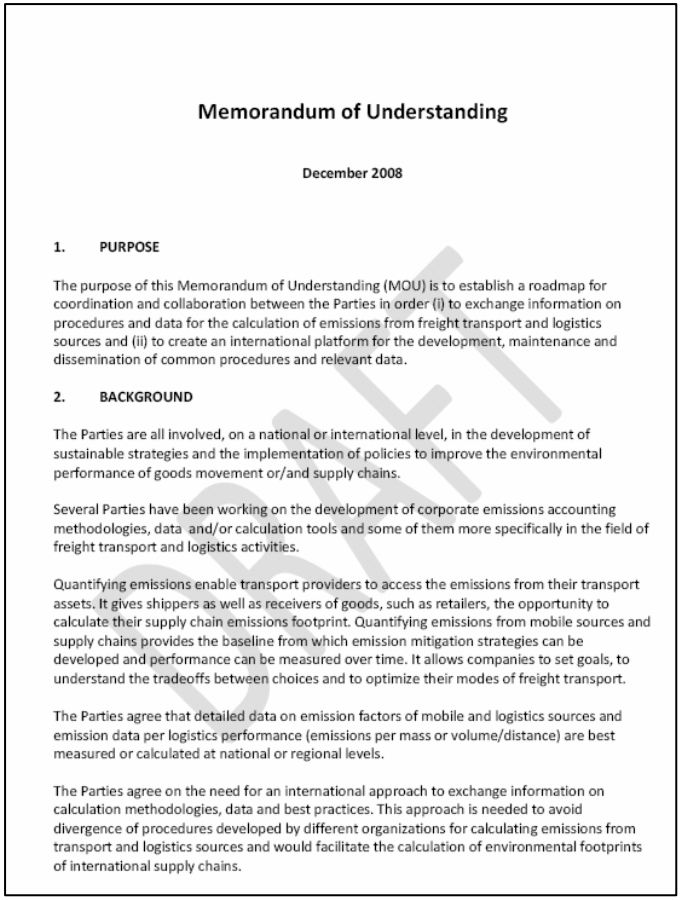
An international platform is needed to work on the development of a common approach for the calculation of emissions from mobile and logistics sources and emissions per unit performance, for the collection of data from national and international information sources and for the international dissemination of this data.

“The longer we wait, the more we will suffer the consequences”



Memorandum of Understanding

December 2008

1. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to establish a roadmap for coordination and collaboration between the Parties in order (i) to exchange information on procedures and data for the calculation of emissions from freight transport and logistics sources and (ii) to create an international platform for the development, maintenance and dissemination of common procedures and relevant data.

2. BACKGROUND

The Parties are all involved, on a national or international level, in the development of sustainable strategies and the implementation of policies to improve the environmental performance of goods movement or/and supply chains.

Several Parties have been working on the development of corporate emissions accounting methodologies, data and/or calculation tools and some of them more specifically in the field of freight transport and logistics activities.

Quantifying emissions enable transport providers to access the emissions from their transport assets. It gives shippers as well as receivers of goods, such as retailers, the opportunity to calculate their supply chain emissions footprint. Quantifying emissions from mobile sources and supply chains provides the baseline from which emission mitigation 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.

The Parties agree that detailed data on emission factors of mobile and logistics sources and emission data per logistics performance (emissions per mass or volume/distance) are best measured or calculated at national or regional levels.

The Parties agree on the need for an international approach to exchange information on calculation methodologies, data and best practices. This approach is needed to avoid divergence of procedures developed by different organizations for calculating emissions from transport and logistics sources and would facilitate the calculation of environmental footprints of international supply chains.

Other aspects and relationships

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- Data and reliable data sources
  - Emissions per source
  - Emissions per mass (volume)/distance
  - Logistics profiles (load factors, …)
  - Total energy conversion chain emissions (well to wheels)

Total energy chain emissions

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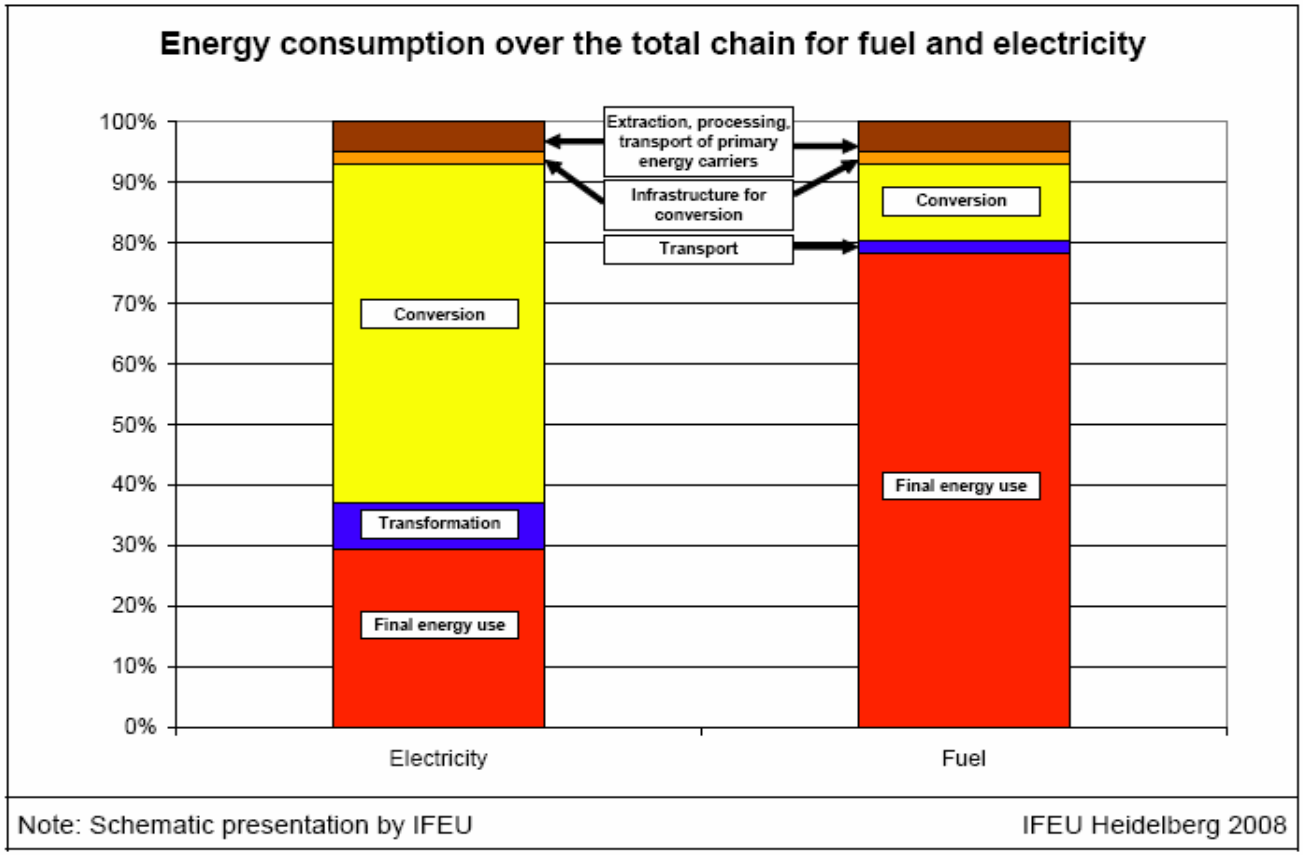
Figure 3 Energy chain for fuel and electricity



Total energy chain emissions

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Emissions- och energifaktorer från bränslen

Bränsle	Typ/Ursprung	Total bränsle GHG-drivmedel	Total Energianvändning	Andel	GHG	Energi
		CO2 gram/liter	MJ/liter	%	CO2 gram/liter	MJ/liter
Bensin	Bensin Sverige BAT	2528	34,5	**95%**	2401,6	32,775
Bensin	Bensin EU snitt	2825	37,7	**0%**	0	0
Bensin	Vinetanol	360	36	**0%**	0	0
Bensin	Sulfitetanol	58	24,2	**1%**	0,58	0,242
Bensin	Veteetanol, Sv	390	31,5	**0%**	0	0
Bensin	Veteetanol, EU	1450	35,5	**4%**	58	1,42
Bensin	Sockeretanol Br.	450	25,5	**0%**	0	0
Etanol E85	Vinetanol	360	36,7	**0%**	0	0
Etanol E85	Sulfitetanol	58	24,9	**25%**	14,5	6,225
Etanol E85	Veteetanol, Sv	390	32,2	**0%**	0	0
Etanol E85	Veteetanol, EU	1450	36,2	**0%**	0	0
Etanol E85	Sockeretanol Br.	450	26,2	**59%**	265,5	15,458
Etanol E85	Bensin Sverige BAT	2528	34,5	**16%**	404,48	5,52
Natur-/biogas (metan)	Naturgas (g/ncbm)	2210	41,6	**46%**	1016,6	19,136
Natur-/biogas (metan)	Biogas (g/ncbm	688	54	**54%**	371,52	29,16
Diesel	Diesel Sverige BAT	2665	37,3	**95%**	2531,75	35,435
Diesel	Diesel EU snitt	2966	42,5	**0%**	0	0
Diesel	RME	1033	43,2	**5%**	51,65	2,16
Diesel	FTD-diesel	2966	43,2	**0%**	0	0
Dieselalternativ	Typ 1	2000	40	**50%**	1000	20
Dieselalternativ	Typ 2	2000	40	**50%**	1000	20

Source: NTM Sweden

Other aspects and relationships

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- Data and reliable data sources
  - Emissions per source
  - Emissions per mass (volume)/distance
  - Logistics profiles (load factors, …)
  - Total energy conversion chain emissions (well to wheels)
- More general procedures and guidelines (GHG protocols, ISO, PAS 2050)
- Top down inventories (IPCC, national inventories)
- Opportunities for improvement
  - Transport avoidance
  - Technological
  - Infrastructure
  - Operational
  - Behaviour
  - Regulations
- Specific requirements per transport mode
- Development of Environmental Key Performance Indicators in Logistics

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