Beyond EN 16528 – towards a global standardisation of the calculation of CO2 emissions along supply chains

Dr.-Ing. Verena Ch. Ehrler
7th ECITL
Dortmund, 5 - 7 November 2014
• The COFRET project

• IWA International Workshop Agreement

• Further steps towards a global standardisation
Scope:

- Use currently available methods and provide solutions for any gaps
- Transport-related carbon footprint along supply chains
- Consider all transport modes and all logistics operations
- Fully comply with the CEN standard EN 16258

Project Duration: 42 months

Project kick-off: June 2011
Members of the initial Advisory Board

• Connekt (The Netherlands)
• Deutsche Bahn (Germany)
• DHL (Germany)
• Ewals Cargo (The Netherlands)
• Fiege AG (Germany)
• Kühne & Nagel (UK)
• Maersk Line (Denmark)
• Myclimate (Switzerland)
• NTM (Scandinavia)
• Sainsbury’s (UK)
• Swiss WorldCargo (Switzerland)
• UPM (Finland)

Later joined by (examples):

• Global Logistics Emission Council
• Smart Freight Centre
• Green Freight Europe
• GREEN EFFORTS
• EcoTransIT
• WWF
• World Economic Forum

and:

COFRET has been granted project liaison status by CEN
Analysis of existing emission calculation tools

Over 102 items analysed, more than 80 aspects taken into consideration

- expert interviews (29)
- on-line questionnaire (62)
- stakeholder and user workshops

• Identification of most encompassing standardisation approaches

10 real-life test cases

• Identification of most relevant gaps in current standards
• Development of concept for further steps together with advisory board
**Towards a Common Approach**

**ISO 14064-1:2006**
considers company perspective including transport and logistics operations

**Green House Gas Protocol Scope 3**
standard for the corporate value chain

**EN 16258** (published December 2012)
transport mode related (freight and passenger)
expected to have a major impact towards harmonisation
could be proposed for development as an international ISO standard

**ISO 14067**
considers carbon footprint of products

**ISO TR 14069**
covers general principles of carbon footprinting

**Various international organisations and projects:** Smart Way
US, GFE, GFA, CCWG, WEF, ECOTransIT, Green Efforts and many more
However…..

- Developed approaches still allow for alternative ways of allocating and calculating emissions, within certain boundaries, and the use of different sources of default data.

- Standards do not consider either the full logistics operations or all transport elements of a supply chain, e.g. EN 16258 does not cover terminals.
IWA as a starting point

Global Logistics Emission Council

IWA
(definition of scope for a standard)

Industry Government Research

WRI / GHG Annex and/or ISO

July 2014

Nov 2014
This International Workshop Agreement (IWA) defines the framework for methods for coherent quantification of CO2(e) emissions of freight transport (total and intensity) on the following three levels:

1. Level of operation specific emission calculation;
2. Level of network emission calculation including company level;
3. Level of cargo emission.

In a first step gaps for each level will be mapped out, in a second step suggestions for closing the identified gaps are given.

Consideration needs to be given to the usefulness of the outputs to the potential user groups of the output, particularly transport service providers and the shippers of goods.
IWA structure

- Transport Chain Elements TCE
- Mode specific gap analysis:
  road, rail, inland waterways, sea, logistics hubs
- Analysis of specific aspects
  Starting point(s)
  TTW / WTW
  CO2 / CO2e
  Allocation units in general
  Specific allocation units
  Energy consumption of auxiliary processes
  Processes included
  Allocation notes
  Procedure for measured data
  Procedure for absence of measured data
  Fuel-based vs activity based
  Data sources (default data)
  Specific factors (if not Annex A/EN 16258)
  allocation unit and intensity
  calculation of distances
  Reporting
  Accuracy labels
Transport Chain Elements

Transport chain emission calculation

Shippers
- Origin Freight Forwarders
- Element calculation
- Carrier
- Terminal
- Element calculation
- Destination Freight Forwarders
- Brokers/Agents
- Element calculation
- Consignees
- Element calculation
- Point of Sale
### Mode Specific Gap Analysis

#### Example Road

<table>
<thead>
<tr>
<th>Transhipment Centres</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Starting point(s)</strong></td>
</tr>
<tr>
<td>TTW / WTW</td>
</tr>
<tr>
<td>CO₂ / CO₂e</td>
</tr>
</tbody>
</table>

- **Informative: other air pollutants**
  - NOx, CO, NMVOC, ...

- **Allocation units in general**
  - EEU throughput
  - Transshipment centers: allocation based on weight (tons)
  - Warehouses: allocation based on space use (average stock level)

- **Specific allocation units**
  - Green Efforts has focused on maritime container terminals.
  - The focus has been on throughput rather than a measure of dwell time or number of processes within the terminal due to practicality considerations.
  - Green logistics project has considered a range of logistics facilities (air freight terminals, letter/parcel sorting centers, storage/transhipment centers for general cargo).

- **Energy consumption of auxiliary processes**
  - Generally included, depending on what data are available.
  - Electricity, heating, packaging materials, refrigerants.

- **Processes included**
  - No reliable method for the consumption by reefers while at the terminal as yet.
  - All warehouses/transhipment centers of logistics network.

<table>
<thead>
<tr>
<th>Allocation units in general</th>
<th>Transshipment centres: allocation based on weight (tons)</th>
<th>Warehouses: allocation based on space use (average stock level)</th>
<th>Particulates are considered a major issue for ports due to the concentration of vehicle movements to serve the port landside as well as the emissions from heavy duty vessel engines and the effect of high sulphur marine fuels.</th>
</tr>
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<td>Specific allocation units</td>
<td>Green Efforts has focused on maritime container terminals. The focus has been on throughput rather than a measure of dwell time or number of processes within the terminal due to practicality considerations.</td>
<td>Green logistics project has considered a range of logistics facilities (air freight terminals, letter/parcel sorting centers, storage/transhipment centers for general cargo)</td>
<td>Allocation rule for temperature control / refer to high practical relevance; should be consistent to maritime.</td>
</tr>
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<td>Energy consumption of auxiliary processes</td>
<td>Generally included, depending on what data are available</td>
<td>Electricity, heating, packaging materials, refrigerants</td>
<td>Treatment of temperature control / refer to be consistent across all modes.</td>
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13./14. November final workshop in Berlin:

- Finalisation of
  - IWA Wording
  - Transport mode specific gap analysis
  - Normative references and recommended standards per mode
  - Recommended next steps (organisation, stakeholder)

- Voting on IWA

Publication of IWA
IWA contribution and achievements

• Results achieved jointly by industry and research within COFRET project are raised onto an international level

• Extended neutral platform for exchange of experiences with emission calculation tools and standards of industry, research and other stakeholders

• Internationally recognised format for further development of global standard for the calculation of emissions of transport chains
Global Logistics Emission Council

- IWA (definition of scope for a standard)
- Industry Government Research
- WRI / GHG Annex and/or ISO

Handing over

July 2014
Nov 2014