



Carbon Footprint of Freight Transport

Standardization of the
calculation of
 $\text{CO}_{2(e)}$ emissions
along supply chains -
challenges and requirements
beyond EN 16258

European Commission
Logistics Conference
Bruxelles, 7 – 8 November



- **Motivations for a CO2 emission calculation standard**
- **Challenges towards the development of a standard**
- **Efforts to establish a standard – status quo**
- **Beyond EN 16258**
- **Conclusion & Outlook**



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Motivation for a CO₂ emission calculation standard



Motivation of Customer:

- Transparency of carbon footprint of product
- Transparency of carbon footprint of shipper

Motivation of Company:

- Reduction of costs
- Improvement of energy use efficiency
- Corporate's strategy and values
- Customers' expectations

CO₂ (e)
Calculation

Motivation of Governements

- Reduced environmental impact
- Reduced health expenses
- Improved sustainability of transport
- Reduced dependency on energy imports



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..... leading to a variety of approaches

- Approaches taken in the past were based on initiative of individual organizations and corporations
- wide range of different methodologies and tools are applied by various players, often focusing on a specific mode of transport
- different databases are used to calculate emissions
- various calculation tools apply different indicators and have different application scopes, often making comparison of the results impossible



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Challenges towards the development of a standard

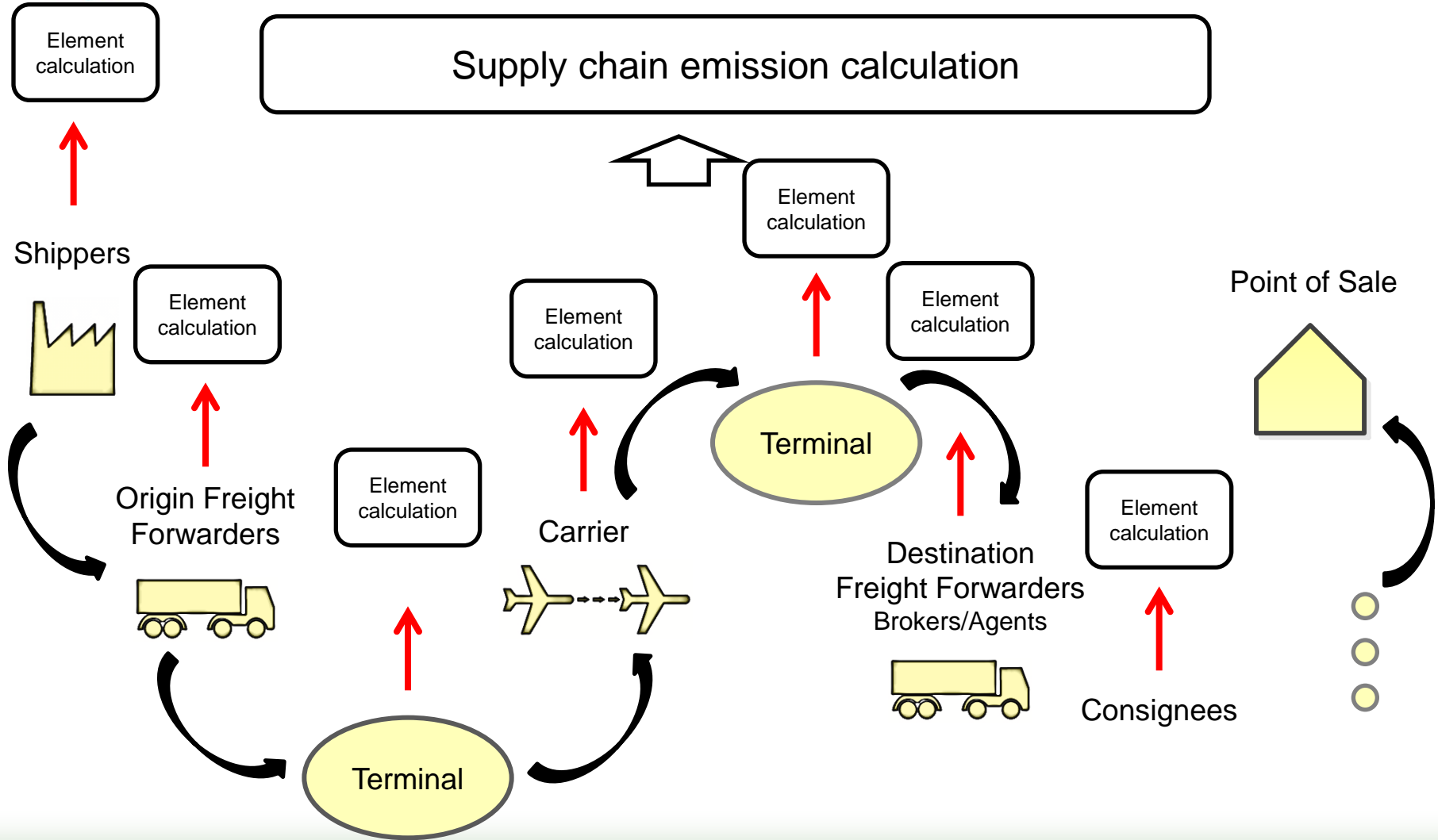


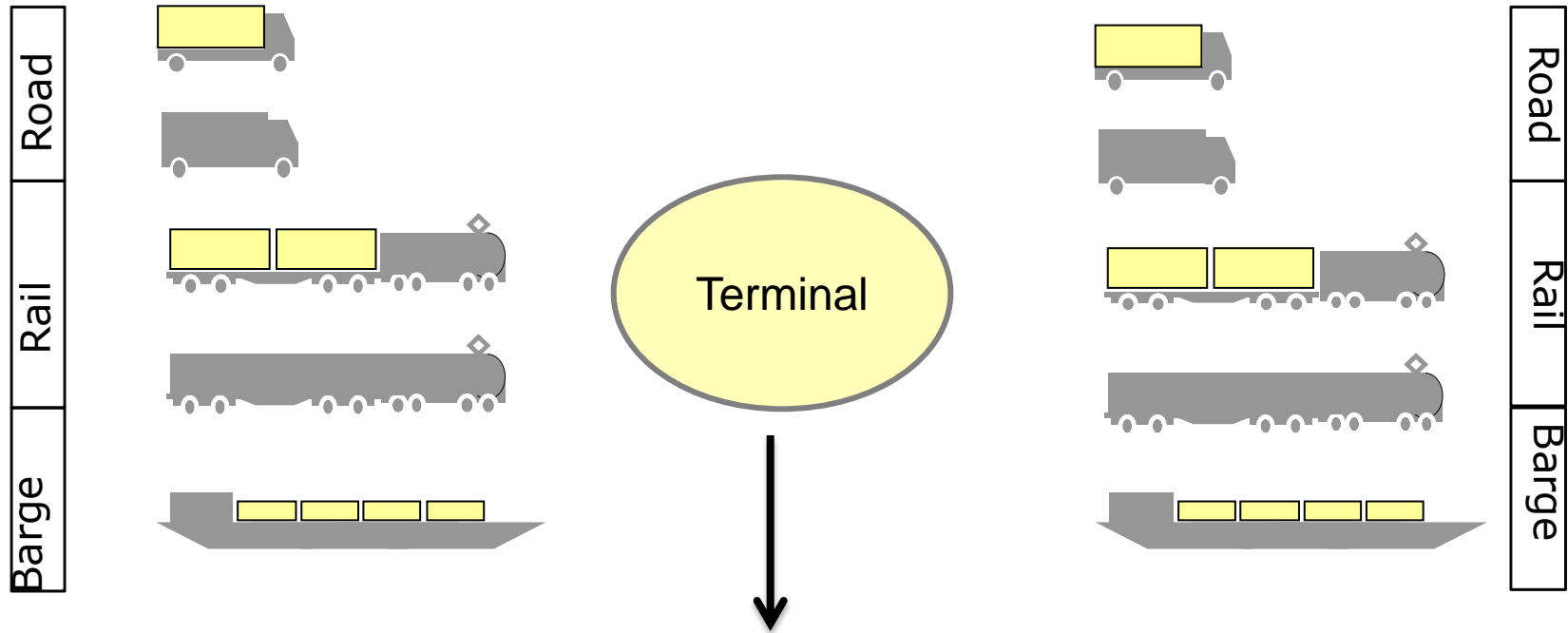
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Complexity of international supply chains

Supply chain emission calculation





Many non-transport processes which cause emissions:
Load, unload, storage, cooling processes and more



- **Emission allocation**

- Global imbalance of trade and transportation flows is not taken into consideration.
- Allocation of emissions to shipments is still a challenge, especially regarding the definition of a „tour“

- **Data collection**

Obtaining data on fuel consumption is not always feasible, especially when sub-contractors are involved

- **Supporting Organisation**

No organisation is there to develop and enforce one standard



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Efforts to establish a standard – status quo



- **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



- 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



- No comparability of different modes and routings
- No comparability of different providers
- No comparison over time
- No calculation for supply chains of multiple players
- No comparability of different supply chains



No optimisation of efficiency of transportation possible



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Beyond EN 16258



- Most items only concentrated on the transport operation as performed by a specific actor - Transport performed by other actors and non-transport logistics operations are usually neglected
- Upstream energy processes are not yet reached by tools and databases, where the WTT part is often missing (although the full WTW analysis is acknowledged especially when non-fossil energy sources are used)
- Differences often exist between modes regarding the level of precision
- Most databases and tools are geographically limited, focusing on the national context.
- The opportunities to adjust data and the data items used in tools to reflect the actual transport conditions are few.



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Requirements beyond EN 16258

- Gaps identified within EN 16258 and calculation approaches leaving space for interpretation need to be closed
- The EU co-funded project COFRET endeavors to identify all gaps, prioritize them and develop first possible approaches for their closure in conjunctions with its Advisory Board

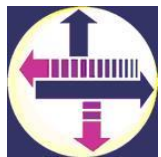


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COFRET – some background information



COFRET is a collaborative research and demonstration project funded by the European Commission, which will provide transparency on existing carbon footprint calculation methodologies for supply chains and which will suggest next steps needed in order to achieve global harmonisation of calculation principles and comparable reporting as part of a process to support global alignment of standardisation





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COFRET Advisory Board



MAERSK



UPM

Sainsbury's

Clean
Cargo

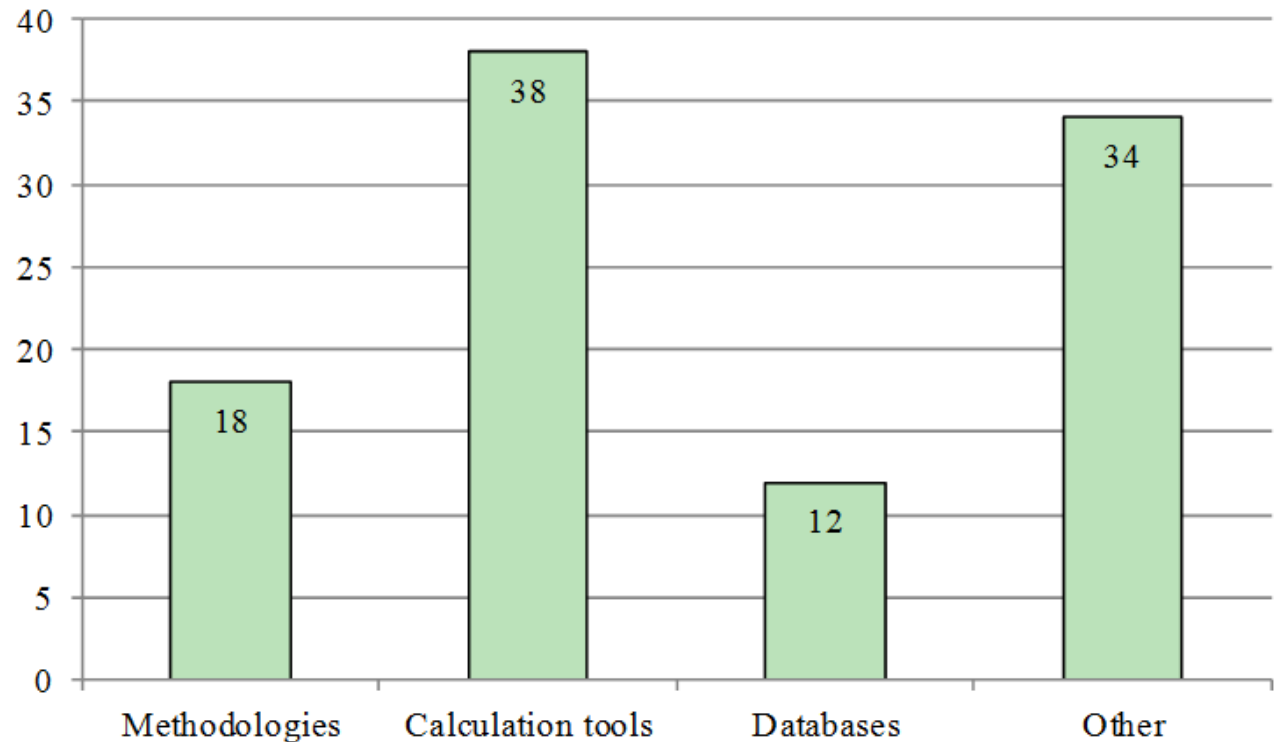


WORLD
ECONOMIC
FORUM





- **A total of 102 items** were identified as relevant to the COFRET project



- **5 workshops held to deepen understanding of industry needs:** User workshop, software developer workshop, e-freight workshop, e-Save workshop, Advisory Board workshop



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Next steps within COFRET

- White spot analysis in methods and tools
- Further involvement of representation of key international partners
- Transparency and co-operation to develop a common approach aligning all modes and regions
- Direct involvement of recognised standardisation bodies
- Identification and use of international channels for dissemination and exploitation so that the global potential is maximised



Aim: contribute to the further development of EN 16258



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Conclusion & Outlook



- First steps towards harmonisation and standardisation have been taken
- Development of EN 16258 is important and necessary step forward and towards achieving the needed transparency in calculating CO2 emissions
- EN 16258 is a European standard though and there is no global organisation that can enforce its usage
- Further work will be needed before a global standardisation is achieved
- Main challenges is to develop a standard that is flexible and simple on one side and covering all elements of the supply chain on the other side
- Providing input for such a development can be achieved by the means of independent, international projects such as COFRET



- A globally applicable standard is needed
- The established dialogue and partnership between existing initiatives needs to be further enhanced and developed as they are the basis for a convergent development of standardization efforts
- A close cooperation between research and industry is important to striking the right balance between the trade-off between accuracy and simplicity and practicality
- The dialogue and exchange between the key industry players and international initiatives needs to take place on an international level to insure that the global potential for the successful development and implementation of a common approach is maximized



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