**COFRET**

**Carbon footprint of freight transport**

**Funding:** European (7th RTD Framework Programme)

**Duration:** Jun 2011 - Nov 2014

**Status:** Complete with results

**Total project cost:** €2,836,460

**EU contribution:** €1,993,909

**Call for proposal:** FP7-SST-2010-RTD-1

**CORDIS RCN:** 99711

**Background & policy context:**
Calculation of carbon footprints, emission reduction-levels for the transport sector as well as new technical solutions for efficient vehicles.

**Objectives:**
The objective of the COFRET project was to develop and test a methodology and framework for the accurate calculation of carbon emissions in the context of supply chains. COFRET provided for a methodology to calculate and monitor carbon emissions based on their component CO2-emissions and if applicable further GHG gases such as CH4 and N2O as well as so-called F-gases deriving from cooling processes.

This comprised the consideration of the user needs and requirements of different stakeholders, such as producers, shippers, wholesalers and political bodies. COFRET was based on existing emission calculation tools in use by its stakeholder.

**Methodology:**
In a first step, COFRET assessed and validated user needs in regard to the calculation of emission calculation tools of supply chains. Parallel, COFRET assessed existing methods, tools and data for calculation of carbon emissions as used already and a taxonomy for emission calculation-tools was developed. Based on the identified user needs and the taxonomy of the existing calculation tools, a methodology and framework was developed.

This COFRET-methodology will allow closing the identified gaps currently impeding the calculation of emissions along supply chains. Furthermore, it will include functional elements of supply chains with all their possible components including transhipment processes, storage and picking of shipments and cooling processes.

The COFRET-methodology considered all transportation modes, ranging from road to rail, inland to deep water shipping as well as air freight transport. It was combined with a comprehensive set of supply chain parameters within a database.

**Parent Programmes:**
[FP7-TRANSPORT - Transport (Including Aeronautics) - Horizontal activities for implementation of the transport programme (TPT)]

**Institute type:** Public institution

**Institute name:** The European Commission

**Funding type:** Public (EU)

**Lead Organisation:**
Deutsches Zentrum Fr Luft Und Raumfahrt E.v

Address:
Linder Hhe
12489 KLN
Germany

Organisation Website:
http://www.dlr.de

EU Contribution: €249,316

Partner Organisations:

Rapp Trans Ag

Address:
Utilbergstrasse
8045 Zurich
Switzerland

EU Contribution: €169,176

Instytut Transportu Samochodowego

Address:
Jagiellonska
03N/A301 Warsaw
Poland

Organisation Website:
http://www.its.home.pl/nsite/

EU Contribution: €38,408

Ethniko Kentro Erevnas Kai Technologikis Anapytixis

Address:
Charilaou Thermi Road
57001 Thermi Thessaloniki
Greece

Organisation Website:
http://www.certh.gr

EU Contribution: €60,625

Nederlands Organisation For Applied Scientific Research

Address:
Schoemakerstraat 97
6060 DELFT
Netherlands

Organisation Website:
http://www.tno.nl

EU Contribution: €206,200

Transport & Travel Research Ltd

Address:
Minster Pool Walk Minster House
Lichfield
WS13 6QT
United Kingdom
EU Contribution: €194,585

Ptv Planung Transport Verkehr Ag
Address:
Stumpfstrasse 1
76131 KARLSRUHE
Germany
Organisation Website:
http://www.ptv.de
EU Contribution: €226,442

Marlo Consultants Gmbh
Address:
Haid-Und-Neu-Strasse 7
76131 Karlsruhe
Germany
EU Contribution: €41,820

Technische Universitat Dortmund
Address:
August-Schmidt-Str
44227 Dortmund
Germany
Organisation Website:
http://www.tu-dortmund.de
EU Contribution: €74,716

Transportokonomisk Institutt
Address:
GAUSTADALLEEN 21
0349 OSLO
Norway
Organisation Website:
http://www.toi.no
EU Contribution: €190,594

Panteia Bv
Address:
Sir Winston Churchilllaan
2288 DC Rijswijk
Netherlands
EU Contribution: €226,700

Vilniaus Gedimino Technikos Universitetas
Address:
Technologies:

Information systems
Sustainable urban mobility planning

**Development phase:** Demonstration/prototyping/Pilot Production

**Key Results:**

During the first reporting period of the COFRET project, the main parts of work performed regarded the analysis of existing CO2 emission calculation methods and tools on one hand and the establishing of links to the most relevant stakeholders of COFRET on the other hand. These activities took place in parallel and complemented each other:

At the beginning of the COFRET project an important research and knowledge gap could be closed: A structured analysis of over 100 of the most relevant existing tools, methods, databases for the calculation of emissions along supply chains was carried out. Over 70 aspects were investigated per each of these tools during the analysis. To build up a comprehensive list of existing resources relevant to the COFRET methodology, the items analysed were categorised into four groups:

1. methodologies, such as standards and guidebooks;
2. calculation tools;
3. emission factor databases; and
4. other activities and initiatives, such as research projects, forums and communication channels.

In general, the carbon footprint methodologies reviewed support a consistent, mutual approach based on lifecycle thinking. However, the level of precision and detail varies, and there are significant methodological gaps regarding the inclusion of all logistics operations. Furthermore, loose guidance with numerous alternatives to choose from, for example regarding allocation, leads currently to confusion and lack of comparability. Especially in the context of complex supply chain configurations, combining various methods in order to cover the entire chain inevitably leads to incomparability, even if each of the methods were compliant with a given standard individually. The number of carbon footprint calculation tools and data sources analysed showed great variation in quality, coverage and originality. To sum up the task results, it can be argued that among the existing methods, tools and databases there are already suitable elements for calculation of carbon footprint of transport and logistics along supply chains even though a harmonised framework is currently missing. Because of the current lack of
universally established standards, various stakeholders have independently developed incomparable methods, tools and data for various solutions for various users and with differing scope.

In parallel to this analysis and in order to ensure that our work has direct relevance to potential end users we closely engaged with our external a

**Strategy targets**

**An efficient and integrated mobility system:**
- A Single European Transport Area

**Innovating for the future:**
- Promoting more sustainable development

Documents:
- Guidance on measuring and reporting Greenhouse Gas (GHG) emissions from freight transport operations (Other project deliverable)
- Periodic Report Summary 2 - COFRET (Carbon footprint of freight transport)

**STRIA Roadmaps:** specified

**Transport mode:** Multimodal transport

**Transport sectors:** Freight transport

**Transport policies:** Environmental/Emissions aspects, Decarbonisation

**Geo-spatial type:** Other