INTEGRATION INTO EXISTING TMS, IT SYSTEMS AND BUSINESS PROCESSES

A strong contribution by the global freight and logistics sector to the Paris Climate Agreement goals is critical. Pressure from customers, governments and investors on business to take action will continue to grow. Businesses are looking to optimize operational efficiency and minimize their carbon footprint at the same time.

The GLEC Framework allows businesses to calculate and report their logistics emissions consistently across their multi-modal supply chain. Results can be used to inform stakeholders and improve business decisions and actions. Challenge cases support businesses to implement the GLEC Framework through five steps:

1. **CALCULATE EMISSIONS**
2. **USE RESULTS FOR BETTER DECISIONS AND ACTIONS**
3. **ASSURE AND REPORT**
4. **INTEGRATE INTO BUSINESS PROCESSES**
5. **ADOPT GLEC FRAMEWORK**

**About LEARN and the GLEC Framework**

The project Logistics Emissions Accounting and Reduction Network (LEARN) mobilizes businesses to reduce their carbon footprint across the global logistics supply chains through improved emissions calculation and reporting. LEARN partners work closely with related organizations, initiatives and already existing networks. This includes the Global Logistics Emissions Council (GLEC), a voluntary partnership that was established by Smart Freight Centre together with companies, industry associations, programs and experts. The LEARN project builds on and seeks to improve the 'GLEC Framework for Logistics Emissions Methodologies' based on existing methodologies. The GLEC Framework makes carbon accounting work for industry. For the first time, emissions can be calculated consistently at the global level across all transport modes and logistics sites. The LEARN consortium is led by Smart Freight Centre and includes the following partners:

For more information: www.learnproject.net or info@smartfreightcentre.org

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CHALLENGE

Companies have existing systems and processes that are used for overall management of the company. Freight operators and logistics service providers make use of transport management systems (TMS) to collect data from trucks or vessels and manage their operations. Shippers as customers outsource logistics services fully or partially, in which case the requirement to report data and information relevant to logistics emissions needs to be incorporated in contracts. This is often combined with more complex IT systems and processes for data collection, reporting and decision-making.

The challenge of several companies was therefore: how to integrate the collection, processing and reporting of data needed to calculate fuel use and emissions into the existing TMS and broader IT and business systems and processes?

ANSWER

If the data needed to calculate logistics emissions can be obtained through the TMS then this will save a lot of time for the company, plus it is more likely that business decisions are informed by real information about fuel and emissions. Current TMS systems are often not capturing the information needed to give a good quality calculation. A first step for carriers is to ensure that their TMS captures, as a minimum, the following information in a single location so that it can be combined in the calculation:

- vehicle capacity
- load carried, preferably for each journey leg
- planned distance travelled, preferably for each journey leg
- distance travelled empty
- fuel type and amount used, preferably for each journey leg

Investment is needed by TMS providers to provide TMS systems that collect data at more detailed levels to support more detailed GHG emissions calculation and reporting. This is, in turn, likely to be dependent on market demand to drive the necessary investment needed by the TMS providers; i.e. a business case is needed.
Different IT systems may need to be connected or updated, for example
- Some carriers and LSPs have separate systems for collecting information from fleet, such as fuel use and km driven, and for logistics contract, such as loads and price. In that situation, a company has to manually pull data from both systems to calculate emissions, which can be resolved by systems integration or the creation of an interface to capture information and do calculations.
- If the systems used by carriers do not interface with the systems used by shippers, additional work is required to share data. Carriers can explore with their shippers how to create an IT-interface to report data automatically.

The requirement to report logistics emissions data and related information can be included in requests for tenders and contracts with subcontracted logistics partners. Ideally, shippers incorporate this into their logistics procurement processes, which cover the following steps:

1. Planning
2. Tendering
3. Contracting
4. Contract Management

Smart Freight Centre will release a Smart Freight Procurement Framework in spring 2019 with further guidance and examples.
Two companies tested the explored how they could use the data from their TMS for accurate GHG calculations using the GLEC Framework.

A Romanian trucking company, calculated emissions that conform with the GLEC Framework using aggregated data from their TMS. However, the company needs to update their TMS in order to be able to retrieve more detailed information and hence calculate more accurate GHG emissions results that would give more insight into emission reduction opportunities.

Hellmann Worldwide Logistics, an international logistics service provider operating mainly in Europe, uses an in-house emission calculation tool that retrieves data from the company’s TMS system. For GHG emissions calculations the company collects own data on locations, weight, volumes, mode of transport and retrieves distance information from its TMS system. The company managed to successfully calculate emissions using the GLEC Framework and will consider adjusting its tool once the GLEC Framework is recognized as common and accepted market standard.

HP Inc, a global provider of personal computers, printers and related supplies, organized training for subcontracted LSPs on how to calculate logistics emissions using the GLEC Framework. In 2018, the company incorporated in its contracts with LSPs the requirement to report emissions calculated in conformance with the GLEC Framework.

A large retailer covering food, specialized retail products, shopping centers and other sectors, is requiring subcontracted trucking companies to submit data so that the company can compute logistics emissions. The real aim is to work together with trucking companies to identify and implement measures to improve operational efficiency and reduce costs and emissions along the way. As a test the company requested data from its subcontractors covering the transport of goods from one DC to its shops in the Southern part of the country. The company was able to perform the calculations on trip level with relative ease; however, at this early stage of the process the quality of the data provided by the subcontractors was not good enough to help the company choose carriers based on their environmental performance.
A Romanian trucking company operates a fleet of 250 trucks. Its operations are either national or international. The company’s international transport services are carried out mainly to/from Central Europe to/from Western Europe. The company is certified to ISO14001, ISO9001, OHSAS18001 standards.

The company has a Transport Management System (TMS) that collects data from its entire fleet. The company was interested to understand if its TMS without modifications would be able to provide sufficient data to calculate emissions to assist own decisions and for reporting to customers.

Vehicles were selected for a single commercial line and data were collected from their archives and the TMS.

The company was able to retrieve data from the TMS for individual trucks but not at the individual truck trip level. GHG emissions calculations could therefore be made for trucks over a certain time period but could not be linked to individual trips or services. This is because the existing TMS does not store information at the more detailed level. Collecting detailed data manually would be too complex.

Consequently, a better quality assessment, based on more detailed data that would allow disaggregation by a range of detailed parameters, was not possible.

Implementation of the GLEC Framework using aggregated data from the TMS proved possible.

The company needs to update the TMS in order to be able to retrieve more detailed information and conduct more accurate GHG emissions calculations.
A large retailer specialized in food and retail, coordinates complex own house and subcontracted transport services and has four Distribution Centres (DCs), from which it supplies its retail locations.

The company outsources outbound logistics to subcontracted carriers and provides inhouse transport services for the inbound logistics to its DCs.

The company has a proven track record in sustainability. It has a structured sustainability program, which includes environmental footprint calculations and takes action to improve its transport, logistics and retail activities.

The company computes GHG emissions from its transport activities and reports CO₂ emissions using the national standards.

The company in conformance with the GLEC Framework recommendations, wishes to make a step from average-based GHG emissions towards the use of real-world good high quality primary data to perform GHG calculations. For this purpose the company requested data from its subcontractors covering the transport of goods from one DC to its shops in the Southern part of the country.

In the long run the company aims to work together with trucking companies to identify and implement measures to improve operational efficiency and reduce costs and emissions along the way.

The company was able to perform the calculations on trip level with relative ease but could not compare it with its in-house calculation method because their results were in a more aggregated company level including other trucking operations.

Unfortunately the quality of the data provided by the subcontractors was not good enough to help the company choose carriers based on their environmental performance.

The company was able to adjust its emission calculation method to the GLEC Framework and get more insight from the results to make sustainable decisions.

The issue of trust in the data being exchanged, including verification and validation (in the future also certification) remains a challenge to be addressed in the future. It is important to first identify and then declare which type of input data is necessary for GHG emissions calculations.