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. **Adopt GLEC Framework**
2. **Integrate into Business Processes**
3. **Calculate Emissions**
4. **Obtain Assurance and Report**
5. **Use Results for Better Decisions and Actions**

**Optimize Supply Chain Efficiency, Minimize Carbon Footprint**

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**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

Global corporations that want their goods shipped to customers around the world make use of complex multi-modal supply chains. Logistics service providers are able to provide an integrated service that covers multiple modes and logistics sites. In calculating logistics emissions, it is important that each segment of the supply chain is understood. There are still gaps, such as warehouses, transhipment at a port, which are all currently excluded from the European standard EN16258, or the last-mile delivery.

The challenge of several companies is therefore: how to apply the GLEC Framework to specific segments and/or combinations of multiple modes and logistics sites of their supply chain?

ANSWER

The GLEC Framework covers all modes and logistics sites, thus allowing companies to calculate their logistics emissions consistently across their global supply chains. The GLEC Framework includes different chapters describing how to calculate emissions for each individual mode, and results from individual legs in the logistics chain can be added up.
A ‘Guide for Greenhouse Gas Emissions Accounting at Logistics Sites’ was developed under the LEARN project and as a supplement to the GLEC Framework. It zooms in on how to calculate emissions from different types of logistics sites shown below.

Additional guidance will be developed in time, for example:
- FEPORT, the Federation of European Private Port Companies and Terminals, updated its *EEEG Guidance for Greenhouse Gas Emission Footprinting for Container Terminals* in 2017, which will be reflected in the GLEC Framework.
- A bulk shipping module as supplementary sector guidance to the GLEC Framework will be developed by Smart Freight Centre in 2019.
Several companies tested the GLEC Framework to specific segments of their logistics chain or specific modes.

GEODIS, a logistics service provider, wanted to integrate in its in-house emissions calculation a module for its logistics sites. The GLEC Framework in combination with the ‘Guide for Greenhouse Gas Emissions Accounting at Logistics Sites’ provided the company with a simple and accurate approach.

FMC International a global shipper of agricultural and industrial goods, uses BDP International as its LSP. FMC wanted to start making a Scope 3 inventory of its GHG emissions in order to make more informed and sustainable route and mode choice decisions. BDP provided data to FMC and made emissions calculations for the first time. They were able to identify significant emission and cost savings on the first intermodal routes where this approach was taken. Both companies are planning to adopt the GLEC Framework in the future.

One of the largest inland hubs in the world, was looking for a simple and accurate method to calculate GHG emissions in terminals. The application of the GLEC Framework in combination with the Guide for Greenhouse Gas Emissions Accounting at Logistics Sites’ permitted the port to successfully calculate its emissions.

A sea carrier operating a RoPax LNG vessel in Europe (a RoPax is a ship designed to carry wheeled cargo (e.g. cars, trucks) and has passenger accommodation), wants to mark its route as competitive from GHG emissions perspective. As a shipping line the company is obliged to report emissions and already collects fuel data and performs calculations using the NTM tool. There are no specific guidelines set for RoPax vessels and working with this company gave the opportunity to explicitly address this gap.

The logistics service provider GEODIS wanted to test its in-house emissions calculation module for its express and distribution operations against the GLEC Framework. GEODIS has implemented since 2013 the initial French ADEME approach for multiple collection and delivery rounds and not the EN16258 standard as it was more complex and data intensive. A parallel GLEC action group working with the mail, parcel and express sector during 2018 has provided fresh guidance for such collection and delivery rounds that will lead to a less data intensive approach in the next version of the GLEC Framework.
GEODIS is an international logistics company with a global network spanning over 120 countries and five lines of business: Supply Chain Optimization, Freight Forwarding, Contract Logistics, Distribution & Express and Road Transport. Company A's Freight Forwarding offers multimodal transport solutions (air, sea, rail, barge, road) with value-added services integrating customs operations and GHG emissions. The company is making active efforts to reduce the energy consumption of its warehouse and is trying to get its sites certified for quality (ISO 9001), safety (OHSAS 18001) and environmental impact (ISO 14001).

The company has an in-house GHG emissions calculation tool covering all modes and logistics sites that is integrated in their Transport Management System (TMS). It is based on the European standard EN 16258, part of the calculations are done through the external EcoTransIT tool, and marine shipping data are obtained from the Clean Cargo Working Group (CCWG). The company adopted the GLEC Framework in 2017. The company wants to integrate in their tool a simple and reliable approach to calculate GHG emissions from its warehouses and logistics sites.

The company tested the GLEC Framework in combination with the Guide for Greenhouse Gas Emissions Accounting at Logistics Sites’ developed under the LEARN project for 12 warehouses in France and Ireland covering different market lines, sizes and temperature requirements. They use their own fuel consumption data taken from their metering system and fuel bills. Information on consumption per activity-level (e.g., electricity use by storage, handling equipment) was not available.

The company managed to perform calculations for its warehouses. Clear guidance was provided to the company on the calculation approach and on how to estimate missing information.

The “Guide for Greenhouse Gas Emissions Accounting at Logistics Sites” provides to the GLEC Framework additional breadth and depth for this part of the logistics chain. It is possible for the company to adopt the GLEC Framework for this part of its operations.
EXAMPLE: FMC INTERNATIONAL & BDP INTERNATIONAL

About
- FMC International, a global provider of agricultural and industrial solutions utilizes multiple transportation modes to move raw materials and products, including road, rail, air and ocean freight. In 2017, FMC joined the U.S. Environmental Protection Agency’s (EPA) SmartWay® Partnership program.
- BDP International, an international LSP based in the US operates in nearly 140 countries around the globe and serves a diverse array of clients by providing a range of logistics and transportation services and solutions.
- FMC uses BDP as its LSP.

Current situation
- FMC wants to begin calculating Scope 3 GHG emissions from its logistics activities.
- BDP wants to start calculating GHG emissions applying the GLEC Framework.

What was done
- Both companies wanted to compare between different routes and modes and choose the most environmentally sustainable solution.
- Specifically they tested road, rail, and ocean freight for four trade lanes, including:
  - New York, USA – Florida, USA – Santos, Brazil
  - China – California, USA – Alabama, USA
  - Alabama, USA – Belgium
  - Georgia, USA – Asia Pacific
- Data on distances, weights and fuel costs from FMC’s subcontractors were combined with information retrieved from BDP’s TMS system on road and rail transport.

Results
- Both companies were able to successfully apply the GLEC Framework for all the proposed routes.
- FMC compared the results and hopes to use the learnings of this project and apply the GLEC framework to their wider supply chain.
- It was the first time for BDP to successfully calculate GHG emissions.

Conclusions
- The testcase was successful for FMC in terms of learning how to use the Framework, in conjunction with its LSPs, and identifying areas of business to improve in order to reduce its environmental footprint. FMC will begin a full Scope 3 GHG emission inventory and adopt the GLEC Framework.
- BDP managed to calculate GHG emissions fast and accurately and plans to adopt the GLEC Framework.
This inland hub is one of the largest in the world. Through the combination of all modes it supports industry and logistics to design the flow of goods as efficiently, resource conserving and economically as possible. The inland port contributes to the environment by shifting loads from 100,000 trucks to alternative more eco-friendly modes of transport.

The company is not currently calculating its GHG emissions and is looking for a simple but accurate environmental approach for logistics site emissions accounting.

The company tested a transshipment between road and rail part of the terminal that handles empty and full containers.

By applying the GLEC Framework and the “Guide for Greenhouse Gas Emissions Accounting at Logistics Sites” the company was able to calculate emissions in a simple and accurate manner.

The “Guide for Greenhouse Gas Emissions Accounting at Logistics Sites” provides to the GLEC Framework additional breadth and depth for this part of the logistics chain.

The company will probably implement the GLEC Framework in the future.