ADOPTING THE GLEC FRAMEWORK IN COMBINATION WITH EXISTING METHODOLOGIES AND TOOLS

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**

**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:

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This project has received funding from the European Union’s Horizon 2020 research and innovation program under grant agreement No 723984.
CHALLENGE

Companies wish to make use of one consistent calculation methodology covering all components of their global logistics supply chain. In reality, many companies have already started with emissions accounting using either their own or external methodologies and tools. Furthermore, companies have been working with existing standards, for example the European standard EN16258 or the methodology provided under the French legislation.

The challenge for several companies we worked with is therefore: how to adopt the GLEC Framework in combination with the methodologies, tools or standards they have been working with so far?

ANSWER

Just because a company already has a tool or methodology to calculate emissions in place, doesn’t mean that you can’t adopt the GLEC Framework. Many will already be aligned or very close to it because the GLEC Framework is intentionally based on existing methodologies, standards and tools. Many companies with in-house methodologies used these same methodologies and standards, such as the GHG Protocol and the European standard EN16258, as input.
A first step for companies that are looking to adopt the GLEC Framework is to carry out a “GLEC Framework Gap Analysis” to:

- Analyze a company’s current logistics GHG emission calculation and reporting practices against the GLEC Framework
- Recommend concrete actions to address any inconsistencies or gaps
- Assess the feasibility of switching to the GLEC Framework by a given reporting year

Businesses that make use of external tools or programs should check with their providers whether their methodology conforms with the GLEC Framework. Those that are in conformance can be recognized through a Smart Freight Centre accreditation label. The CDP already recommends using the GLEC Framework for companies that report logistics emissions to the scheme.
Several companies tested the compatibility of the GLEC Framework with their own in-house tool and methodology. Other companies explored how adoption of the GLEC Framework could be combined with an external (commercially available) tool or program.

**GEODIS**, a logistics service provider, compared its own calculation tool outputs with calculations using the GLEC Framework for three multi-modal routes. GEODIS is already largely, if not completely, applying the GLEC Framework using a mixture of actual, modelled and default data.

A European cool-chain logistics provider, compared its own calculation tool outputs with calculations using the GLEC Framework for the transportation of a customer’s food products from two food processing plants to a retailer. Adoption of the GLEC Framework was relatively easy as the in-house tool was built on the same principles and underlying methodologies.

**Ewals Cargo Care**, a logistics service provider specializing in intermodal transport across Europe, compared calculations using the GLEC Framework and the LeanAnalytiX tool. The company is considering as a consultee of GLEC to adopt the GLEC Framework based on the LEARN test case. More effort will be made to get data indirectly from road subcontractors to avoid the use of default data and improving together with GLEC default data from ferry and rail suppliers.

A road carrier in France with retail customers, calculated emissions for the delivery of products from warehouses to supermarkets using the company’s biomethane trucks. Results showed that calculations using their in-house methodology, based on the methodology prescribed under the French Decree n° 2011-1336 (French law that mandates reporting of emissions from transportation services) were compatible with the GLEC Framework. A main gap in calculating accurate values in both cases was limited access to load weight data, which are important to calculate tonne-km. Collaboration with the customer to obtain this information is key.

A manufacturer of fiber-based board and paper for the packaging industry calculated emissions for delivery of paperboard reels to Italian customers via rail across Europe. Calculations using the NTM tool were compatible with the GLEC Framework, whereas the NTM tool also gives the company additional insights on air pollution impacts.
This company is a global shipper of food and industrial products. Calculations for logistics supply chains in Europe confirmed that the GLEC Framework works as a methodology and that if implemented through use of a tool such as LeanAnalytiX the company can identify hot spots for emissions reduction. Differences in calculated results were mostly due to use of different default values and a different approach to assessing distance, meaning that some methodological adjustments to the LeanAnalytiX tool may be needed to conform with the GLEC Framework.

A mail and logistics company among the first multinationals to adopt the GLEC Framework, calculated emissions for selected trade lanes that use biofuel mix. Calculations using the GLEC Framework, NTM tool and the company’s in house tool were compared. Greater clarity is needed to make sure that where a company’s biofuel supplier has an independently verified emission factor for its product then this is acceptable as an alternative to the standard values provided in the GLEC Framework.

International Alexander, an international LSP, wanted to check the validity of its method and make it compliant with the European standards. Thus, the company compared GLEC Framework results with their calculation method for the road transport of goods. The company found GLEC Framework easy to apply especially for companies new to emissions accounting and is planning to adjust its method to comply to the GLEC Framework and consequently to the European standards.

A shipper of agricultural products, wanted to combine the GLEC Framework with the LEAN AnalytiX tool to improve its emissions calculations. Mostly using dedicated transport services, Company J collected data from its TMS and performed calculations using the GLEC Framework. The GLEC Framework approach assisted the company to make robust calculations and, in combination with the LEAN AnalytiX tool, enough guidance can be provided to a customer on how to make efficient changes in its supply chain and achieve lower emissions.

A shipper in automotive industry, wanted to validate its in-house GHG emissions calculation tool using the GLEC Framework. The company already makes calculations using primary data from its own operations and subcontractors. Robust emissions calculations were performed, and the company believes that with small adjustments their tool can conform with the GLEC Framework.
**EXAMPLE: GEODIS**

**About**
- 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. GEODIS’ Freight Forwarding offers multimodal transport solutions (air, sea, rail, barge, road) with value-added services integrating customs operations and GHG emissions.

**Current situation**
- GEODIS 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, are done based on operational data's (such as routing, flight number, carrier) through the external EcoTransIT tool, and ocean carrier data are obtained from the Clean Cargo Working Group (CCWG). The company adopted the GLEC Framework in 2017.

**What was done**
- Calculation tool outputs were compared with calculations using the GLEC Framework for three multimodal routes:
  - Road/train/road (China – Sweden)
  - Road/air/road (China – Sweden)
  - Road/sea/road (Sweden – Thailand)

**Results**
- The calculation approach of using carrier data, where it is available, and supplementing this using detailed modelling based on EcoTransIT, is in line with the recommendations of the GLEC Framework.
- A lack of accurate input data from individual carriers was apparent for road, which forces reliance on modelling or default values in many cases.
- There were differences between calculation outputs using actual or modelled data to those using default values from the GLEC Framework. This is inevitable because default values are an approximation that cannot accurately represent every transport operation. The deviation between actual or modelled data and default results was especially large for air and ocean container carriers.

**Conclusions**
- The company is already largely, if not completely, applying the GLEC Framework using a mixture of actual, modelled and default data.
- The default values provided for air and sea container transport in v1.0 of the GLEC Framework are higher than those experienced by the company. These default values have been systematically reviewed as part of the revised GLEC Framework.
- It is important to realize that the GLEC Framework recommends that good quality carrier data should be used wherever possible, and default values are a last resort when carrier data or detailed modelled data are not available.
Stef is a European specialist for coolchain logistics, bringing together all transport, logistics and IT skills dedicated to raw and transformed food products. The company has customers across food processing, distribution and catering. Stef has been working with the GLEC Framework since 2017.

Current situation
Stef developed an in-house transport GHG calculator that takes into account the company’s activities, subcontractors, fuel consumption and refrigerated groups and retrieves tonnage and mileage from its TMS tool. The calculator was built in 2009 and conforms to the French OOET Methodological Guide and French regulations.

What was done
Calculation tool outputs were compared with calculations using the GLEC framework for the transportation of a customer’s delicatessen food products from collection at two food processing plants and delivery to a retailer in France. As Stef mainly used own trucks to service this customer, data collection through the TMS was straightforward.

Results
As the GLEC Framework and Stef’s tool build on the same base methodologies, compatibility was found on most aspects:
• Accounting of fuels consumed in the engine (road diesel) and refrigeration groups (non-road diesel)
• Actual fuel consumption is known as each fuelling is recorded and assigned to the vehicle.
• Fuel consumption is averaged by vehicle type and by transport branch before calculation.
• Emission factors for the combustion of diesel and non-road diesel are from ADEME Carbon database. These are “well-to-wheel” factors, taking into account the following greenhouse gases: CO\(_2\), CH\(_4\), N\(_2\)O.
• Calculations are carried out per customer, considering the journey type (collection and delivery rounds, direct route from loading to unloading place) and temperature profile (frozen, refrigerated, dry).
• A challenge is getting accurate data on actual distances travelled which affects tonne-km calculations.

Conclusions
Stef is already largely, if not completely, applying the GLEC Framework.
• Adoption of the GLEC Framework was relatively easy as the in-house tool was built on the same principles and underlying methodologies.
• The GLEC Framework could provide more guidance on tonne-km calculations in case actual distances travelled are not available.
EXAMPLE: EWALS CARGO CARE

About
- Ewals Cargo Care is a logistics service provider specializing in road transport across Europe using own fleet operations supplemented by subcontracted and chartered service providers. The company makes use of intermodal transport opportunities where trailers and truck trailer combinations use other modes such as rail and sea. Customers are from the automotive, paper & packaging, healthcare & hygiene and retail sectors.

Current situation
- Ewals Cargo Care is calculating its emissions but seeks to improve the level of detail and how results can be used to improve operational efficiency.
- The company wanted to explore how adoption of the GLEC Framework as the emerging industry standard can be combined with using an external tool, to better inform logistics decisions. The Lean AnalytiX tool takes data on the amount of goods moved and the fuel/energy consumed to calculate GHG emissions.

What was done
- Calculations were compared using the GLEC Framework and the LeanAnalytiX tool
- Specific transport supply chain scenarios were developed. These related specific client multimodal transport service chains which range across the utilization of purely own fleet, purely subcontracted operations and combinations of own fleet and subcontracted operations.
- For their own fleet, they collect operations data (planned distances), fuel costs and quantities. However, this data is averaged across all fleet vehicles and is based on vehicle kms not tonne kms. For their road sub-contractors that use STEF’s fuel card accounts they can collect fuel quantities and driven distances. Where gaps in data exist, such as RoRo ferry operations or Road-Rail or Rail-Road terminal operations, the default factors are used.

Results
- Calculations using the GLEC Framework resulted in slightly lower emissions than using the LeanAnalytiX tool.
- When primary data from subcontractors are missing, default factors have to be used as a last resort. Challenges identified in relation to this:
  - Calculations using default factors, in the absence of primary data, will not detect any improvements in empty runs
  - It must be ensured that default factors used are based on well-to-wheel (WTW) instead of tank-to-wheel (TTW). If the full impact of changing to alternative fuels or electricity, both of which are being strongly promoted by various industry bodies and policy makers, are to be quantified then the full impact of the original and new alternative must be compared to avoid perverse outcomes and unavoidable consequences.

Conclusions
- Ewals Cargo Care is considering as a consultee of GLEC to adopt the GLEC Framework based on the LEARN test case and continue using the LeanAnalytiX tool.
- The company will focus on getting data indirectly from road subcontractors to avoid the use of default data and improving together with GLEC default data from ferry and rail suppliers.