# Connecting data points on road transport for ISO 14083


## Why this read is worth your time and attention

Thinking about GHG emissions calculations for an entire transport chain that involves carbon-intensive road transport can be overwhelming. Yet, most of the necessary data points are already being tracked by carriers - they just need to be connected and put into context in a meaningful way. Drawing on a conversation with Bricklog, this case study addresses how standard business control measures may help in calculating GHG emissions in line with ISO 14083.

## Context

In March 2023, ISO published its new 14083 standard on the quantification and reporting of GHG emissions arising from transport chains. The standard establishes an internationally harmonised approach for quantifying and reporting on GHG emissions in the logistics sector.To gather their views in relation to this new standard, our external partner LRQA has talked to

- Shipping Technology - case study 1.
- Bricklog - case study 2.
- BigMile - case study 3.

## Road transport plays a central role in any effort to reduce emissions

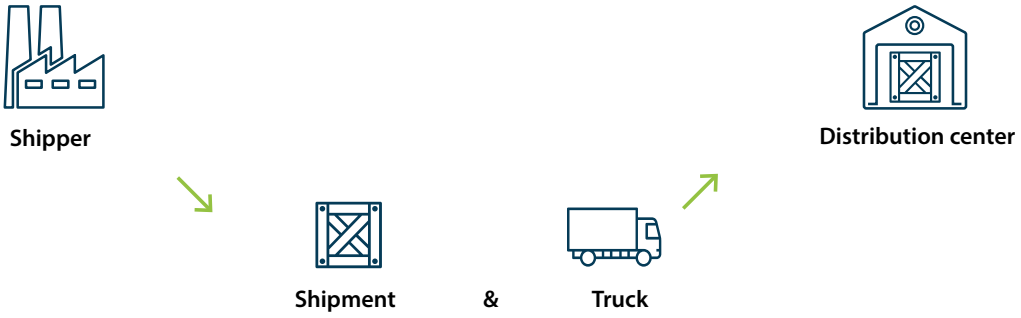
More and more companies disclose their Scope 1, Scope 2 and Scope 3 GHG emissions. A key driver for this is the EU's Corporate Sustainability Reporting Directive (CSRD), which includes mandatory climate reporting. While the CSRD applies in 2024 only to large EU companies, smaller companies, especially those in the transport- and logistics sector, may nevertheless face demands to provide GHG emissions-related data. Already now, transport companies are being asked about their CSRD-relevant climate disclosures by their existing customers or via new tenders. While reporting at the corporate level can be considered an established practice, calculating and reporting GHG emissions at the value chain level, still poses challenges to companies. It requires the connection of insights from various actors and data sources involved, at the lowest level of detail possible. Within the wider transport- and logistics sector, road transport is one of the most widely used forms of transportation, facilitating the movement of goods between businesses and consumers worldwide while also helping passengers reach their destinations.


Unlike other means of transportation, trucks and passenger vehicles can navigate a diverse range of terrains and reach destinations that may be inaccessible to other modes.
Yet, road transport remains the EU's biggest emitter of GHG emissions in the transport sector.

# Regular business control practices provide a basis for data gathering

Most companies in the transport sector implement strong business control measures as a standard practice. Business control mechanisms allow them to monitor and minimize fuel consumption, manage a truck fleet efficiently, optimize routes and cargo loads, or manage inventory levels. Typically, on-board diagnostic and fuel monitoring systems of trucks track for example fuel efficiency and engine performance while GPS devices can automatically track location, speed and the route of the vehicle. Load sensors and weighing systems can record relevant data on the shipment carried by each vehicle. These existing systems are able to provide relevant data on e.g. the freight type, condition of the freight, journey type, distance, and energy sources used - all crucial elements for the calculation of road transport emissions. Having business control and data analytics processes in place is consequently not only beneficial to generally optimize operations and increase efficiency, but it also facilitates accurate GHG emissions calculations.
Yet, while systems often already provide relevant data, it is not always guaranteed that the different data points are connected in a meaningful way.

If different data systems, sensors or devices are used, the data format and units resulting from them may differ, leading to challenges of data inconsistencies or incompatibilities.
External service providers like *Bricklog* provide solutions for these challenges, allowing them to connect the relevant dots and ensuring interoperability between systems. This enables them to allocate the GHG emissions of a client's truck or trip on the lowest detail possible to the shipments transported by that specific truck or trip.


**Data points**

**Must-have**
- Load details (mass)

**Nice-to-have**
- Origin and destination data
- Route information
- Temperature monitoring
- Compliance documentation

**Data points**

**Must-have**
- Fuel monitoring consumption
- Route (distance)
- Load and weight

**Nice-to-have**
- Fuel monitoring efficiency, engine performance
- Location, speed
- Time logging

*Simplified illustration of typical data points gathered per shipment and truck via on-board computer systems, indicating must-have and nice-to-have data points for carbon footprinting*

## Moving from a narrow scope to the bigger picture, while keeping attention to detail, can be challenging

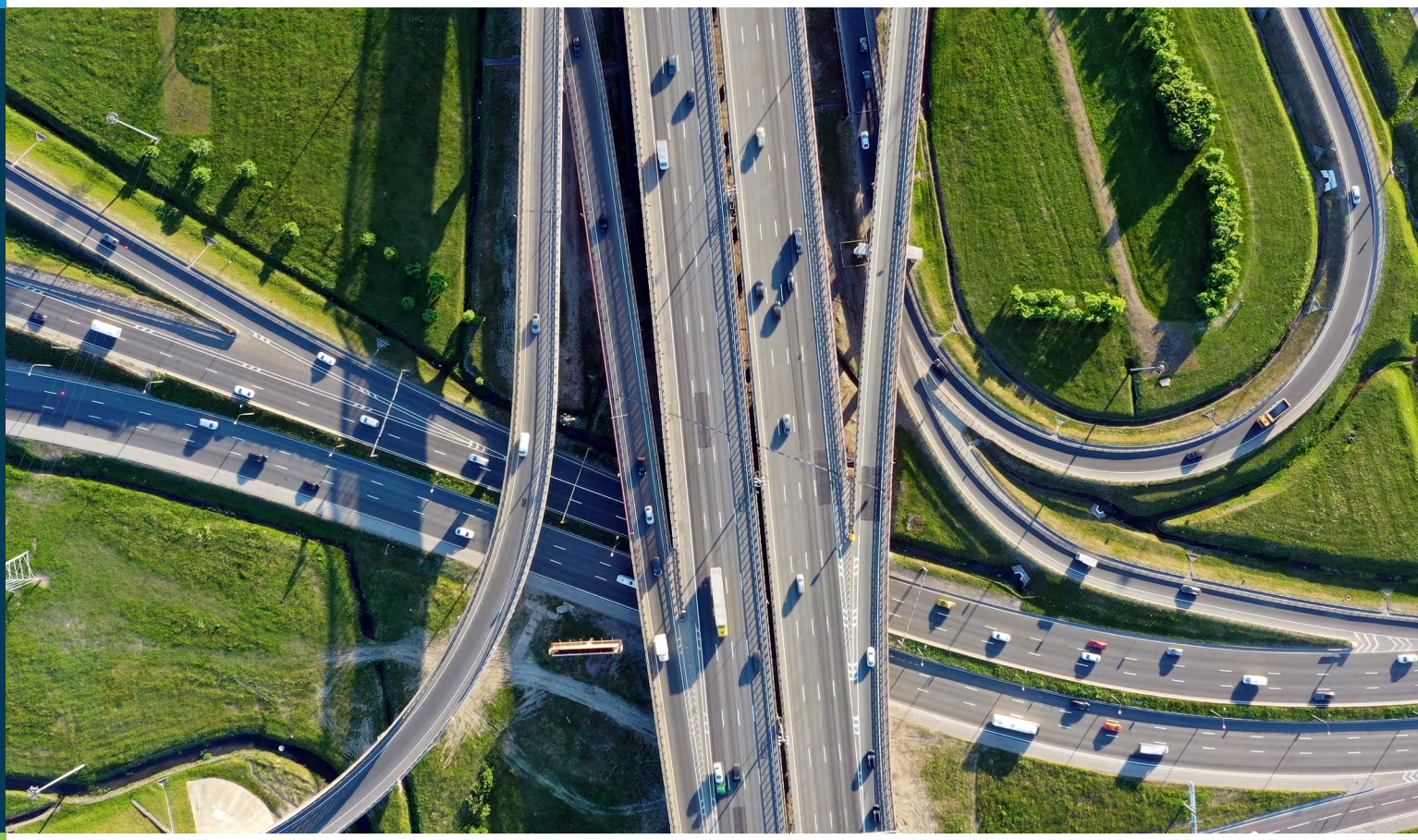
Characteristic of the ISO 14083 standard is its focus on the entirety of the transport chain, requiring transport companies to include emissions associated with hub operations that are carried out at e.g. warehouses or cross-docking sites. In practice, companies that in the past have looked at e.g. four individual sections of transport by truck, now need to consider the linking hub operations between these legs as well, increasing the number of sections to focus on from four transport-, to an additional three hub operation sections.

At the same time, gathering data on hub activities, such as cross-docking operations, may not be feasible with the source systems of most transport companies. Their systems are built to focus on tracking where and when the shipment was loaded and unloaded for which trip. In addition, emissions associated with hub activities are usually less significant in comparison to total emissions. In turn, gathering this data – and ensuring accurate and high-quality primary data wherever possible – can become quite a challenge for companies, as it is not automatically tracked via existing data systems.


## Connecting the data points enhances accuracy and allows companies to provide detailed reports to stakeholders

Solutions providers like *Bricklog* offer (road) transport companies support in solving data issues, providing support regarding e.g. data gathering in real-time, business control, order entry, but also GHG calculations. They can connect their data analytics system directly to all the data-generating systems available at the company, such as transport management systems or board computer systems. In this way, companies can track and use the most direct, primary data that is available in relation to their transport activities, e.g. on the shipment's origin, destination and weight, the mode of transport and carrier performance, the route distance, and the load efficiency. Insights gained from business control measures and $CO_2$ calculations allow transport companies not only to optimize supply chain efficiency and reduce both costs and GHG emissions, but it also enables them to engage in the necessary conversations with their customers. Transport companies generally have a lot of different data sources at hand, and they do not necessarily need any additional data.


Yet, as soon as transport chains get complex, involving multiple transport phases with different trips and shipments for different customers, companies are required to connect their data points with data from other sources.



Aware of this, *Bricklog* has adjusted its data gathering and calculation systems to include the consideration of hub operations, for example. Yet, mere access to data does not necessarily ensure good quality of data. An error in the input data, e.g. a wrong indication about the kilometres travelled, will directly impact the calculated GHG emissions. Most data solutions providers, including *Bricklog*, do not change or omit any data but work with the input data they retrieve. Even more, ensuring high-quality data is crucial. them. Validating data inputs via original direct measurements, such as for example fuel receipts, plays an important role.

Through its data platform, *Bricklog* provides both business control and data quality solutions to help transport companies not only improve their data quality but also process quality and learn how to follow and be aware of more data-driven approaches. Connecting dispersed data sources and ensuring all actors know how to assure data quality, is key for enhancing the accuracy and completeness of information. Companies should well consider their resources and capabilities, as ongoing (time) efforts are needed to build and refine comprehensive datasets.

Depending on the framework or data requests that companies want to answer, they may need to adjust their data control systems and may want to leverage third-party data solutions providers to elevate the quality of data analysis.

While GHG emissions calculation in the transport sector remains complex, the consolidation of multiple frameworks into one standard, such as ISO 14083, simplifies the process and provides a starting point for companies looking to improve their sustainability efforts. Collaborating with other companies and leveraging external expertise can mitigate issues related to data quality and ensure the delivery of reliable results. Companies should not wait any longer but should start now to review their systems and make changes as necessary to ensure all data and insights gathered are correct and detailed enough for the necessary GHG emissions calculation.

At the same time, companies should not necessarily try to do everything themselves. Relying on external support from firms whose business it is to handle data can be beneficial and allow the companies to keep focussing on the core of the business, i.e. the transport operations.