TRANSPOREON
transforming transportation

CASE STUDY

How better quality data helps IKEA Supply Chain Operations & Girteka manage transport emissions

Company profiles

About IKEA Supply Chain Operations

IKEA was founded in Sweden in 1943 and offers well-designed, functional and affordable, high-quality home furnishing, produced with care for people and the environment with the vision to create a better everyday life for the many people. IKEA Supply Chain Operations, within IKEA Supply, is a transport buyer that develops and deliver excellent transport & logistic solutions and we yearly ship approximately 2 million shipments. The goal for IKEA is to become climate positive by 2030. For us in Supply Chain Operations we want to reduce the carbon footprint from every transport that we do by an average of -70% per transport by 2030.

Girteka Logistics is the largest asset-based logistics provider in Europe. Girteka Logistics provides road transportation solutions for its customers across Europe, utilising an environmentally friendly fleet of 9,000 trucks and 9,800 trailers to deliver over 880,000 full truck loads each year.

Global transport to go green

According to the **European Environment Agency** (EEA), unlike other sectors, emissions from the European Union's (EU) transport sector increased steadily between 2013 and 2019. It is also predicted that transport emissions will significantly rise in subsequent years following the pandemic.

To tackle rising emissions from road transport, the EU has put forward various measures that will come into effect over the next few years.

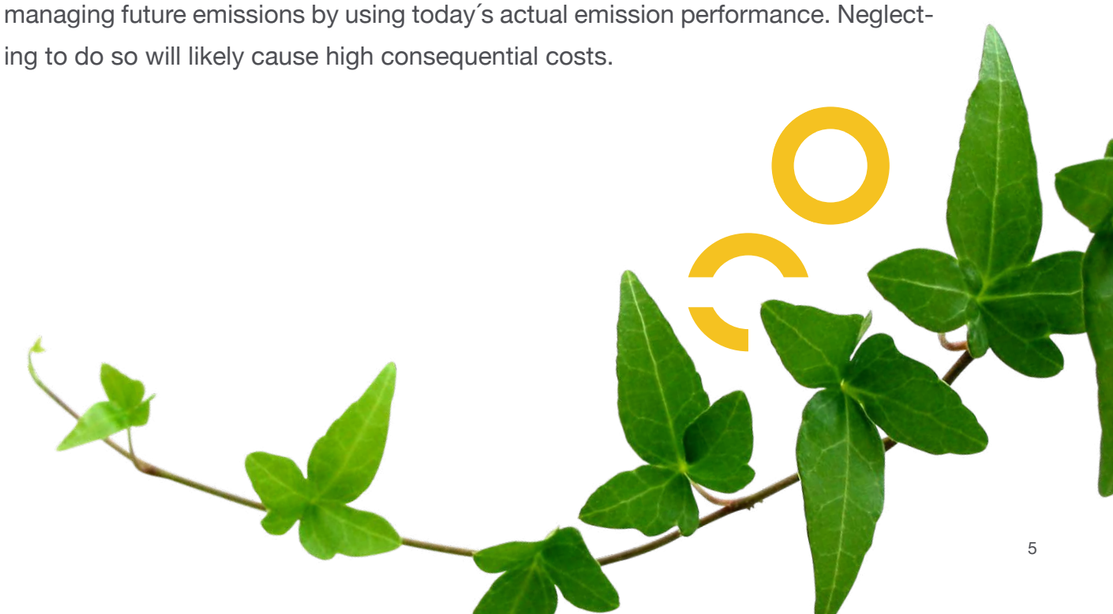
As part of the Green Deal, and under the European Climate Law, the EU Commission is working to align current climate, energy and transport-related legislation laws with the 2030 and 2050 ambitions through what is known as the '**Fit for 55** package'.

Within the **Fit for 55** package, transport logistics will no longer be exempt from carbon certificate trading as of 2026 and will need to apply the EU Emissions Trading System (EU ETS). The package has also called for changes to the existing **EU ETS**, requiring sectors included in the trading system to reduce their emissions by 43% compared to 2005 levels. To facilitate this change, emission allowances will decline at an annual rate of 2.2% from 2021 onwards, compared to the current 1.74%.

Likewise, under the **Corporate Sustainability Reporting Directive**, which will include environment, social and governance (ESG), it will become mandatory as of 2023 for 55,000 companies with over 250 employees. The Corporate Sustainability Reporting Directive **(CSRD) proposal** calls for the audit of reported information as well as a requirement to report according to mandatory EU sustainability reporting standards.

These efforts are not limited to Europe. The US Securities and Exchange Commission (US SEC) published a statement on March 21st, 2022, requiring companies to disclose certain environmental statements and reports to their investors that would have a "material" impact on their business. Registrants would also be required to disclose Greenhouse Gas (GHG) emissions from upstream and downstream activities in its value chain (Scope 3).

Legislation changes will impact both carriers and shippers alike. This means, now more than ever, tracking and reporting accurate emissions will be crucial, as well as managing future emissions by using today´s actual emission performance. Neglecting to do so will likely cause high consequential costs.



Data and collaboration, that´s the solution

The regulations imposed by the EU signify a need for certified, accurate emissions calculations. To do that, there also needs to be a level of standardisation across calculations since in-house methods will no longer be accepted unless they meet specific criteria.

The Global Logistics Emissions Council (GLEC) framework is in line with the Greenhouse Gas Protocol, UN-led Global Green Freight Action Plan and CDP reporting. Within the framework are three accepted methodologies to measure emissions:

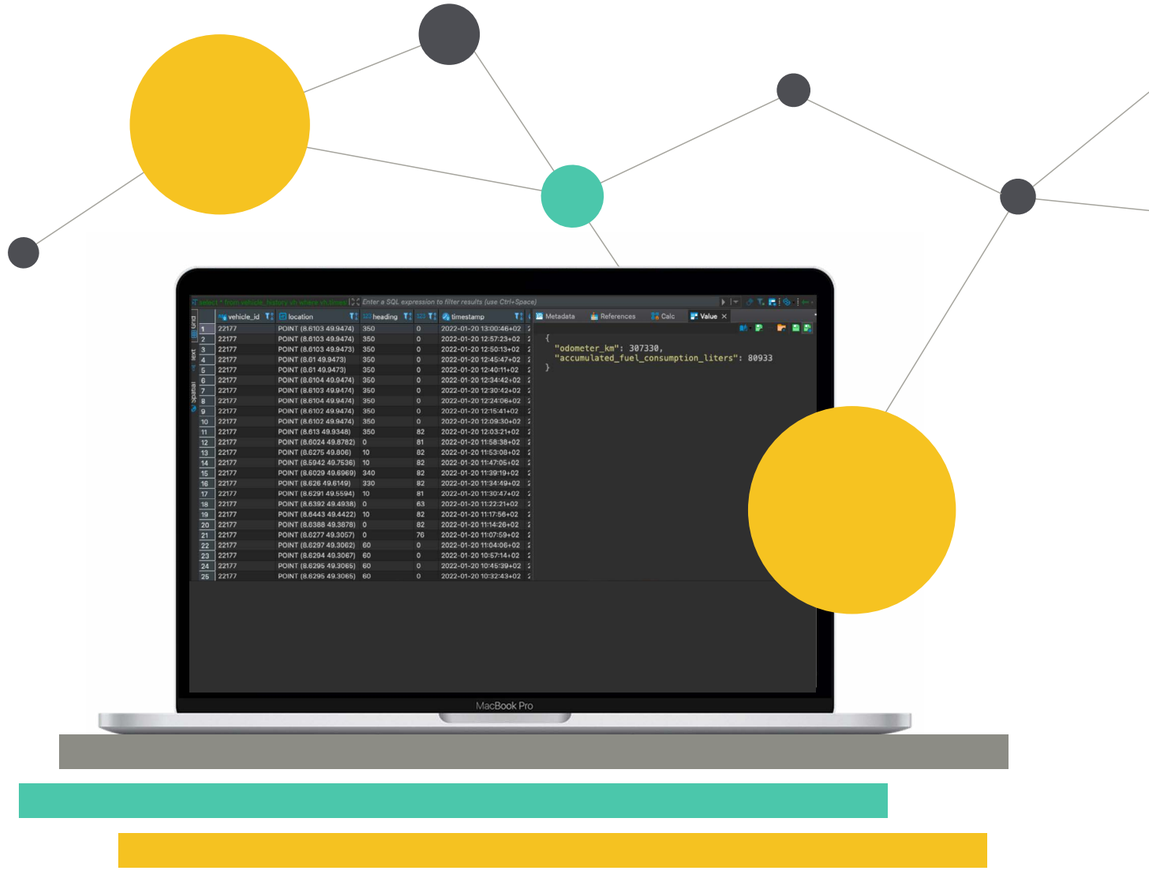
1. **Default data**
2. **Modelled data**
3. **Primary data**

The main difference between the three methods is the accuracy of data presented.

The default data method only focuses on industry average figures such as the planned route of the vehicle, a default vehicle etc.

The modelled data method is more detailed, taking into consideration actuals to the extent they are available. For example, the vehicle type, load weight, region and actual route driven are all taken into consideration.

Lastly, the primary data method of calculation is the most detailed. The method takes into account real-time data regarding actual routes driven, as well as actual fuel or energy consumption and fuel type provided by telematics.



Currently, the main methodology used by most businesses is based on default data only. These figures give estimates that can be higher than necessary. As a result, companies are set to pay more for what is perceived to be higher emissions when in reality, the figure may be a lot lower and cheaper.

Using primary data would ensure that figures are calculated as close to reality as possible. This means that not only are reports presented more accurately, but re-

ported emissions are shown to be a lot lower compared to the results using default data. This is particularly important since there will be a (higher) price on emissions in the coming years. Therefore, it is worth reporting results as accurately as possible to avoid paying for additional costs. Moreover, primary data allows people to distinguish suppliers even within the same modality and make better decisions today to reduce tomorrow´s GHG footprint.

Understanding where the most emissions are being generated creates the opportunity to improve those areas. Using the default method leaves little room for improvement. Additionally, when using primary data, particular issues within specific areas can be identified, such as modality, routing, or supplier specific shortcomings. Efforts made by carriers become visible and provide a return on investment.

Likewise, primary data-based calculations help businesses to remain transparent towards the extent of how they support emission goals. All these factors count towards helping secure future ventures, building partnerships, and maintaining a strong brand image.

Results:

Better data means a lower carbon report but also better decisions

IKEA Supply Chain Operations and Girteka conducted a trial using Transporeon's Carbon Visibility tool. The trial entailed tracking around 1,720 full-truck load transports using the three methodologies outlined in the GLEC framework: default data, modelled and primary data. Results were calculated bottom up, transport by transport to ensure total transparency.

The trial found that under equal conditions, average well-to-wheel emissions reported using primary data were 5% lower than emissions reported using the default data.

More than that, when looking at different sub-categories such as distance, weight and mode, differences in emissions were more obvious. For example, the trial found that using primary data to track emissions in vehicles weighing between 10-20 tons showed a reduction of 6% in reported emissions compared to default data. With heavier transports (>20 tons) the effect was even clearer, with a reduction of 11%.

Results also significantly varied depending on distance travelled. Mid-range-distances (between 300-900 km) measured using primary data resulted in 4% less emissions reported. Longer distances (>900 km) tracked using primary data reported 6% less emissions.

Likewise, when tracking intermodal transports, such as road-rail-road, using the primary data method resulted in 27% less emissions being reported.

Also, there were use cases where the default calculation method suggested less emissions compared to actuals.

Overall, the trial concluded that better data quality and the particular use of primary data brings added value. Depending on the variables, such as the use case, the differences to default value driven calculations can peak at 13% on average – meaning up to a 13% reduction in costs associated with reporting inaccurate emissions.

Johann Spriet, Global Sustainability Developer, Supply Chain Operations, IKEA Supply Chain Operations, found that **"sharing primary data will not only help to improve emissions reporting but will also ensure that we have one same figure with our transport service providers. This will create trust and enable a focus on the right actions to decarbonise. Urgency of climate change requires exchange of real data, and we see with this case study that it is now possible!"**

Johann Spriet
Global Sustainability Developer,
IKEA Supply Chain Operations

Martynas Sarapinas
CIO Girteka Logistics

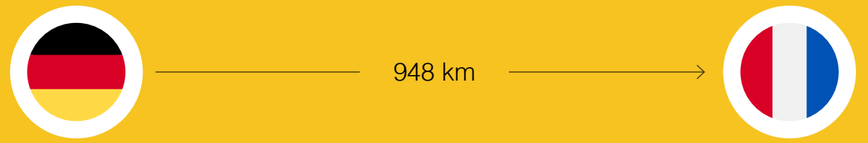
Martynas Sarapinas, CIO Girteka, says the “**use of digitalization gives us the opportunity to improve the efficiency of all our undertakings. In that sense, we are glad we have collaborated with IKEA Supply Chain Operations and Transporeon on this Case Study on GHG measurement. It has shown that sharing emissions among the carrier and the shipper, in a transparent and scalable manner, based on primary real time monitoring data, isn’t a dream anymore, but a reality. We have seen that default driven calculation has its shortcomings, even if compliant with the GLEC framework. Sharing actual data makes all sides improve and brings enormous benefits to the environment!”**

In addition to improving emissions reporting accuracy and driving down costs, sharing primary data promotes greater collaboration between shippers and carriers when it comes to Environmental, Social, and Governance (ESG)/CO2 goals. Both parties share the same figure, enabling standardisation and transparency, particularly when reporting Scope 3 emissions.

It has been long due that we must take carbon emissions seriously, and transportation is a big contributor here. We start with creation of visibility, accurate, standardised and actionable measurements - we must do it properly, so everyone can go on with actual carbon reductions.

Jaak Laineste
Director of Research at Transporeon

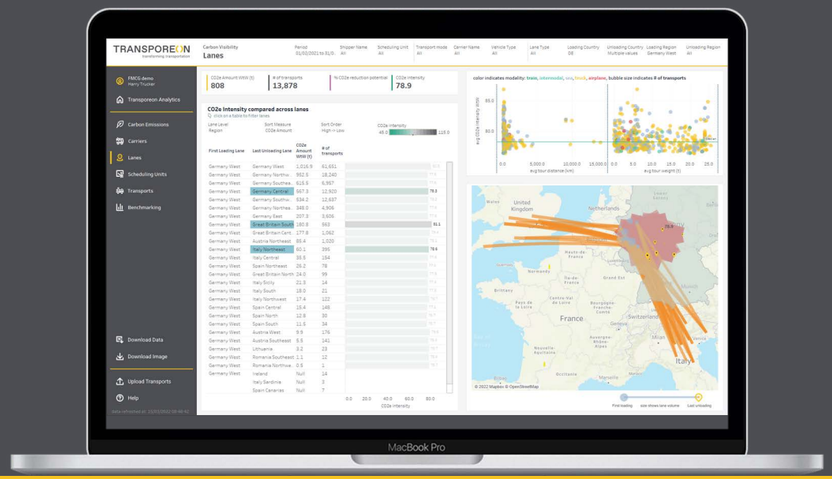
Sample:



BUERSTADT

IKEA distribution Centre Fos

	TRANSPORT 1	TRANSPORT 2	TRANSPORT 3
Weight, tonnes	20.7	23.8	23.9
Driven distance, km	963	966	952
Fuel, liters	296 (default: 351)	216 (default: 371)	277 (default: 373)
Consumption, liters/100 km	30.7 (default: 37.8)	22.4 (default: 40.0)	29.1 (default: 40.1)
WTW CO2e, kg (fuel- based)	938 (default: 1095)	685 (default: 1159)	878 (default: 1162)



Carbon tracking tools are a significant asset when it comes to tracking emissions and ensuring that they are measured as accurately as possible. For example, Transporeon's Carbon Visibility tool is compliant with the GLEC framework. It uses all three methodologies to calculate emissions: Bottom-up default data based on granular industry averages, modelled data and primary data. Primary data doesn´t only provide the highest possible accuracy when it comes to reporting emissions. It also steers better decision-making by visualising the differences among suppliers. Using default data would make all providers appear equal.

Furthermore, it is an added value that shippers, carriers and Logistics Service Providers (LSPs) are enabled to share the same GHG emission reports and joint targets within the supply chain network.

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Key details

Participants: IKEA Supply Chain Operations and Girteka
Tool used: Transporeon Carbon Visibility
Number of transports tracked: 1720 Full Truck Loads
Methods used: default driven calculation, calculation modelled using real-time visibility, primary data (fuel-based calculations)

Key findings

-5% of **average** well-to-wheel emissions
-6% calculated CO2 emissions for transports >900 km
-11% CO2 emissions reported for heavy transports exceeding 20 tons
-27% CO2 emissions reported for multimodal transports like road-rail-road

Conclusion

"We have to move away from simply using industry average default values. We got to move towards real-time primary data, which can be disaggregated, and which can give us a much more granular view of emissions from the logistics sector."

Alan Mc Kinnon
Professor of Logistics at Kuehne Logistics University

Talk to a sustainability expert!

Request your personal appointment.

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