



The next 'Big Thing' for your supply chain

Reducing a Company's Carbon Footprint Through Logistics Optimization

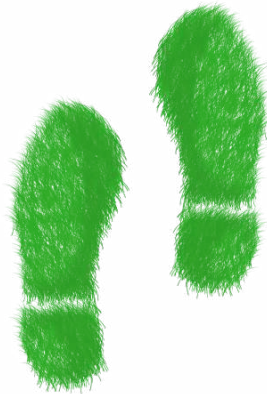


Content

- 1 Companies are motivated to measure carbon footprint across supply chain operations**
 - 2 Transportation is a key factor in a company's carbon footprint**
 - 3 It is crucial for organizations to account for the impact of their logistics processes in the environmental analysis of their supply chains**
 - 4 IoT sensor devices offer visibility into the environmental impact of the movement of goods across the supply chain**
 - 5 Carbon footprint monitoring and emissions reporting solution by Arviem**
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Companies are motivated to measure carbon footprint across supply chain operations

Sustainability initiatives are gaining momentum. As many key stakeholders such as customers, investors and employees are showing an increased interest in monitoring the business practices of organizations with regards to sustainability, many forward-looking companies are recognizing that sustainability is beneficial for all; it is good for the planet, appreciated by consumers and investors and leads to cost savings and improved brand image.



Alignment with sustainability commitment

As companies commit to reduce the carbon footprints of the products and services they provide, they start to look into various business operations to identify activities that are significant greenhouse gas emitters.

Risk Mitigation

The power of a brand is affected by a company's reputation for sustainability. Managing and measuring supply chain greenhouse gas emissions effectively helps companies to avoid damage to brand value and lack of preparedness for complying with carbon regulations.

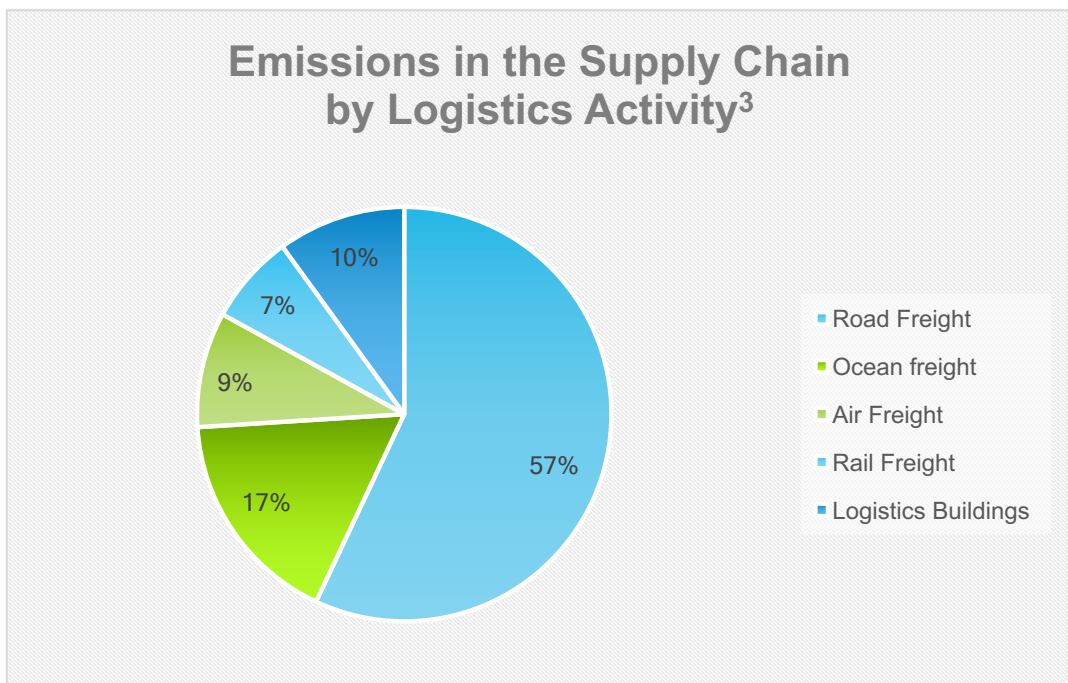
Demand from customers and consumers

Increasingly, business customers are asking companies to provide information on the life cycle emissions of the products and services that they procure. Sustainability aspects are influencing the purchasing behavior of buyers.

Transportation is a key factor in a company's carbon footprint

Nearly 6% of the total volume of greenhouse gases generated by humans are due to the flow of products to consumers. Research shows that supply chains can be responsible for up to four times the greenhouse gas emissions of a company's direct operations¹, while transportation is the 2nd highest emitter of greenhouse gases worldwide².

The World Economic Forum estimates in its Supply Chain Decarbonization report that the logistics and transport sector has a carbon footprint of around 2,800 megatonnes. In absolute terms, road freight is the greatest part, at around 57% of the total, with ocean freight some way behind at 17%³.



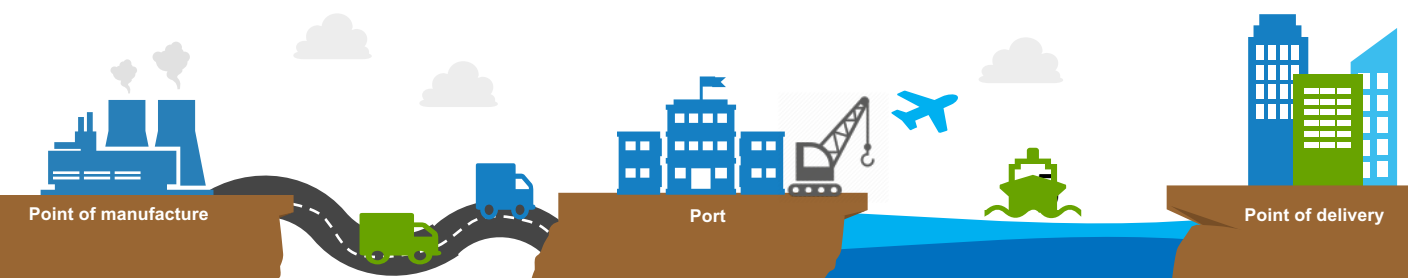
It is crucial for organizations to account for the impact of their logistics processes in the environmental analysis of their supply chains

Forward looking companies are looking for ways to decrease their carbon footprint. Companies understand that lowering the carbon footprint in their supply chain can not only substantially contribute towards the company's sustainability initiatives, but it has also quantifiable business effects such as lowering operational costs. However, before building an energy efficient supply chain, companies need to understand the company's carbon emissions.

Considering that transportation represents such a significant share of greenhouse gas emissions in the supply chain, it is crucial for organizations to account for the impact of their logistics processes in the environmental analysis of their supply chains.

To find out where carbon emissions are concentrated in the logistics chain and develop and put in place reduction plans, organizations are in the need of quality metrics and assurance. Measuring the complete carbon footprint across a global supply chain is challenging, it is a complex task that is time and resource intensive. However, with the help of new technologies this task can be automated and carbon footprint reporting can be introduced across organizations. Real-time carbon footprint monitoring is one example of cargo monitoring technology available on the market. Customers can see the carbon footprint of a shipment and use this information to map out and optimize emissions across their logistical chain.

Lowering the carbon footprint of the supply chain not only contribute towards the company's sustainability initiatives, but it has also quantifiable business results.



IoT sensor devices offer visibility into the environmental impact of the movement of goods across the supply chain

The rise of IoT (Internet of Things) technologies opens up new possibilities to monitor, analyze and manage the carbon footprint across the supply chain, including in places or at levels of detail not possible before. Carbon footprint monitoring solutions involving IoT sensor devices offer unprecedented visibility into the environmental impact of the movement of the goods across the supply chain.

Unlike other solutions on the market, Arviem's IoT based solutions offers a more accurate reporting of carbon emissions. IoT enabled carbon emissions reporting is calculated based on effective transport data instead of the less accurate planning data. As the IoT monitoring devices are riding along with the cargo, companies can analyze emissions on a shipment level, use the collected data to make key business decisions, reduce energy use and lower the carbon footprint of logistics operations.

Sustainability, especially in supply chain logistics, often goes hand-in-hand with efficiency. Eliminating excess carbon emissions from your logistics chain is similar to eliminating any other waste of resources leading to more sustainable supply chains. And just like eliminating waste of any other valuable resource, it can result in cost savings. Projects aiming to cut carbon emissions can yield additional benefits (like loading and route optimization), some of which could have significant financial value in their own right.





Monitor your carbon footprint in the logistics chain with Arviem

We eliminate milestone based visibility solutions that only record data about the status & condition of assets when goods reach or leave certain checkpoints. Arviem provides real-time, trustworthy, carrier independent data about the whole journey of the goods from the point of manufacture to the point of delivery uncovering supply chain blind spots. Our cloud-based, easy to use carbon footprint monitoring and analytics platform provides business intelligence for decision makers.



Carbon footprint reporting: The key to identifying opportunities for improvement

Environmental policies at national and regional levels are driving investment into green compliance initiatives on a global scale. The ongoing efforts towards making supply chain more sustainable motivate companies to introduce various tools and services that can provide transparency in the supply chain.

Arviem's service for carbon footprint monitoring and emissions reporting in the logistics chain enables organizations to take a systematic look at logistics. The data collected by Arviem's IoT enabled sensor technology serves as the basis for data analysis, empowering supply chain and sustainability professionals to understand the greenhouse gas emissions generated during the transportation of goods as well as helps them to evaluate the the impact of various logistics choices.

Arviem's award winning service provides carbon footprint monitoring, reporting and analysis to be used in various areas:



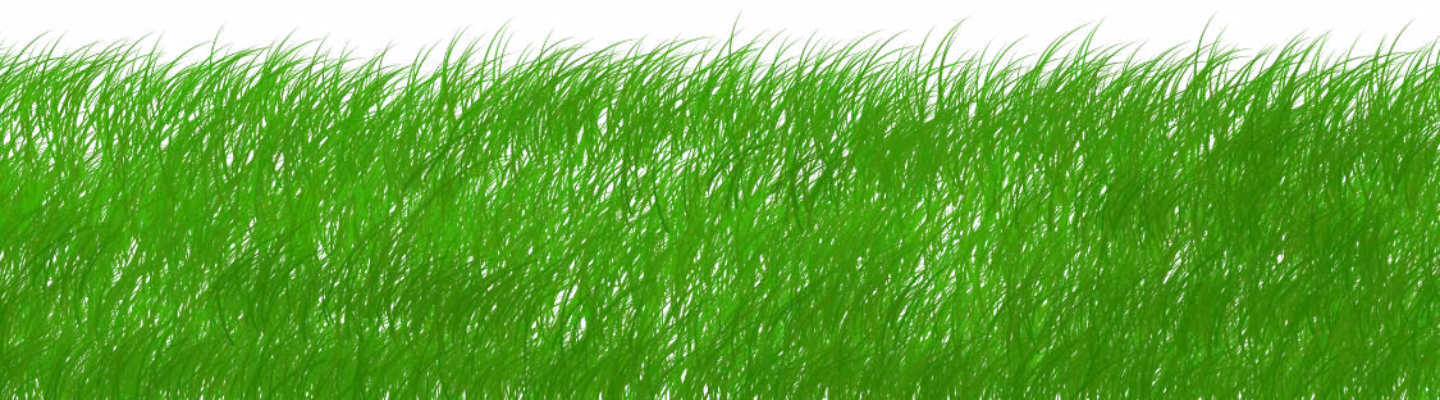
Quantifying existing carbon emissions from logistics processes & transportation networks



Testing alternative methods & modes of transportation and quantifying the potential emissions reduction



Developing plans to reduce carbon emissions by modifying transport usage

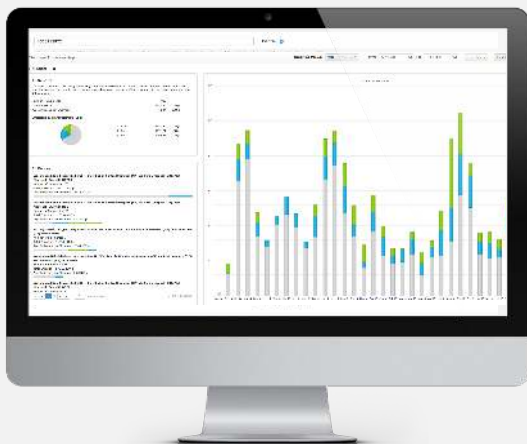


Carbon footprint monitoring and emissions reporting in the logistics chain




Unlike other solutions on the market, Arviem's carbon emissions reporting is calculated based on effective transport data instead of the less accurate planning data building on Arviem's core competence of cargo monitoring. As Arviem's monitoring devices ride along with the cargo, clients are able to reveal and report emissions on the level of a single shipment. Arviem's carbon footprint reporting and emissions monitoring solution reveals where carbon emissions are concentrated in the supply chain. Clients can leverage the collected data when making key business decisions with regards to the supply chain; such as, how to reduce energy use and how to lower the carbon footprint of logistics operations. The gathered data empowers decision makers to implement actions that make the whole supply chain more sustainable. With the aggregated data, supply chain and logistics managers can develop less intensive supply models to reduce the energy consumption of the supply chain and lower the company's carbon footprint.

"Monitoring the location and environmental conditions of our shipments is a very important component of our stewardship efforts. Arviem provides us this capability."

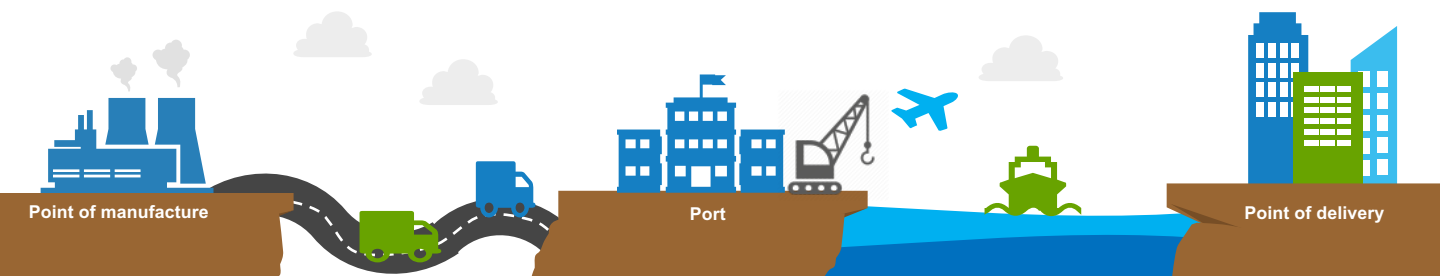
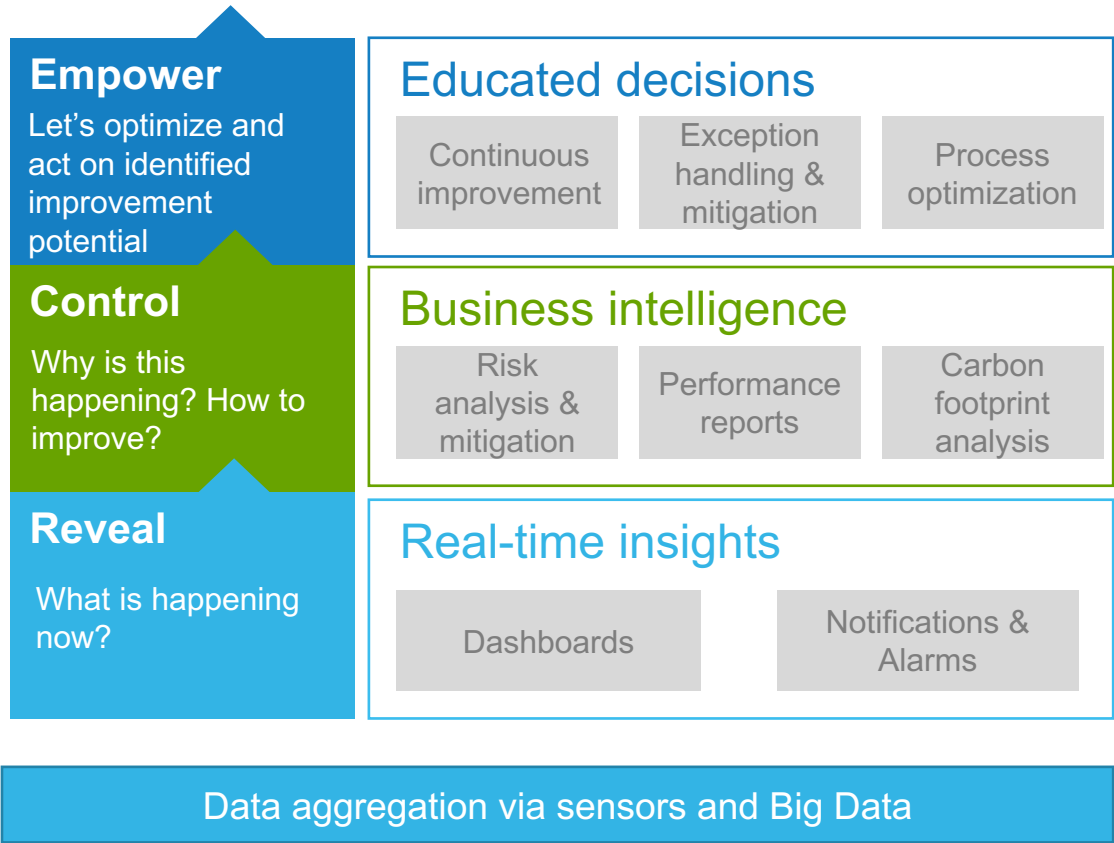
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Benefits of carbon footprint reporting and emissions monitoring in the logistics chain

-  **Cost savings**
-  **Regulatory compliance**
-  **More accurate reporting**
-  **New market opportunities**
-  **Improved brand image**

The Arviem supply chain visibility and cargo monitoring operating model



Why Arviem?

We operate **worldwide** and offer a **full service**

We provide **multimodal** cargo monitoring solutions

We offer '**pay-as-you-use**' service, no investment needed

We guarantee **24/7** customer service

Our solution is up and **running in a day**

We have **long established expertise** in the industry

We operate from and develop our software in **Switzerland**

*"We have eliminated waste,
reduced demurrage costs
substantially and achieved timely
product availability and product
freshness."*

Nestlé on Arviem's Services





Resources:

- 1: Dixon (2016) Do you know the carbon Footprint of your supply chain? Published in Supply Chain Digital
2. Eurostat. Greenhouse Gas emissions, analysis by source and sector.
3. WEF (2009). Emissions in the Supply Chain by Logistics Activity