# Innovative forms of cooperation for climate-neutral transport systems

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In order to achieve a climate-neutral transport system, large-scale implementation of new technologies is required, such as increased use of electrification, as well as changed control of the logistics systems. Innovative technology already exists, but many challenges remain before it reaches its full potential.

We are faced here with several questions: Who will drive the implementation beyond occasional demonstrations? Who will bear the costs? Who will receive it strengthened competitiveness and the increased profitability one? But the questions are wrong, we shouldn't ask ourselves who, we have to ask the question which! In order to achieve set climate goals, innovative forms of cooperation are required.

Within the framework of the Vinnova-financed project "Innovative forms of collaboration and business models for climate-neutral transport systems" (years 2020-2023) we want to support the emergence of new innovative and effective forms of collaboration and business models that can enable a comprehensive transition to a more climate-neutral transport system. A central point of departure is that these forms of collaboration should reduce the distribution problem that arises when costs and benefits are to be distributed between involved actors when implementing ground-breaking solutions.

**Fossil-free vehicle fleet through cooperation with many different actors**

One of the first cases we studied within the framework of the project was the collaboration that was required for a haulage company with around 100 trucks to be able to reach its vision to become 100 percent fossil-free. To do this, they chose to include six cars powered by liquefied biogas (LBG) in the vehicle fleet. But the journey there was long and lined with successful cooperation with other actors. First, an anchoring would take place centrally against the larger logistics company that a few years earlier procured the haulage company. The central logistics company was not only positive about the changeover, but was also able to support the haulage company in the applications needed to obtain government investment support. But this money did not cover the entire transition and it became clear that the haulier's largest transport-buying customers needed to support the transition by paying a slightly higher price for the fossil-free transports. multi-

the number of talks where, among other things, the benefits for the transport buyers to support the implementation of this technology followed. The transport buyers saw the advantages of paying a higher price, now it remained to convince their customers as the costs of the transports finally ended up with them. The haulier supported the transport buyers in the meetings with their customers and an expert from a major gas supplier was also included in the collaboration to get a realistic price picture and reassurance that the new technology would not lead to a deteriorated delivery service. Contracts were drawn up where the customers were promised the same delivery service as before but with a new surcharge for the fossil-free transport. For the haulage company, however, it meant an adjustment where the drivers had to start driving the routes earlier to compensate for a slightly longer time for refueling and increased distance to petrol stations.

**Get the drivers with you**

Here you might think the journey has ended, but no! The next step was to get the drivers involved in the vehicle change. This was easier said than done, in addition to the challenge of the prevailing driver shortage, there are several drivers strongly loyal to certain truck brands. It was even the case that some drivers ultimately chose to change employers when they were no longer allowed to drive their favorite brand or had continued mistrust of the greener technology.

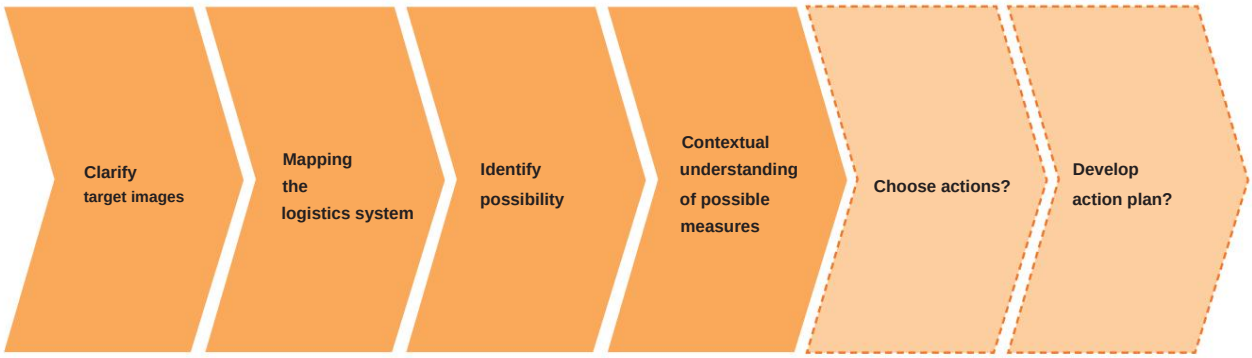
The way to get the other drivers on board meant an in-depth collaboration with the gas supplier. The gas supplier supplied the haulier with demo cars so that the drivers could try the new technology at home and assisted as a sounding board for all the questions that the drivers had.

We were initially somewhat surprised that collaboration with the automotive industry was not more prominent, but this is probably due to two aspects, firstly that in this study we focused on the implementation phase and not the development phase of the new technology.

Partly because the vehicle suppliers get a sale regardless of whether the customer buys a gas or diesel car, while the gas supplier only gets a deal if this fuel is chosen.

**Stakeholder collaboration in case of changed logistics management**

But we will not reach the environmental goals by only implementing new technology, it also requires changed management and design of the logistics systems. For example, driving around with half-full fossil-free vehicles does not solve the problems. There are several different green logistics practices that we can use to make logistics more sustainable that are not technology-oriented. For example, we can question locations such as which terminals and warehouses are used, we can plan routes that take into account possibilities for the efficient use of return transport and joint loading with other people's goods, or adapt the packaging for efficient transport utilization, a problem that is often highlighted within, for example, e - the trade.




*A first draft of a process image for how collaboration can look like to identify and design suitable green logistics practices for the company.*

**Green logistics practices**

But sometimes the measures are of a completely different nature than we might first imagine when we talk about green logistics practices. Moving the quality control further up the chain to avoid transport of incorrect products is one such example, or not splitting orders into two different transports, which risks drastically increasing the environmental impact. Just an activity as simple as avoiding boom runs, i.e. ensuring that someone is on site and able to receive the goods, can in itself greatly minimize the need for extra runs.

That the goods owner changes his requirements for delivery service, such as allowing longer lead times and more flexible and wider delivery time windows to create opportunities for climate-smarter transport, is something that is also best done in cooperation. Changes in the delivery service affect other actors in the supply chain and the room for action can be limited or the effects absent if central actors are not on board. Here, too, good cooperation between actors is required.

**Changed delivery service through cooperation with several different actors**

A major transport buyer wanted to investigate the environmental benefits of being more flexible in their delivery requirements. What initially appeared to be a question that could be answered in dialogue with the logistics company they purchased the logistics services from, quickly turned out to require cooperation with a number of other actors.

The logistics company needed to talk with its sub-suppliers, i.e. haulage companies, to understand how changes in, for example, lead times and delivery windows would affect the efficiency of the transports and thus the environmental impact.

Furthermore, the transport buyer realized that they mainly acted as an intermediary between their product suppliers and the customers, any changes they made in the delivery service would affect the operations of these actors to a significantly greater extent than their own the business. Even if the transport buyer had a lot of freedom in the matter of what requirements they placed on the purchased logistics service, they were not the ones who needed to make the biggest adjustments in the event of any changes. This illustrates the need for understanding-oriented cooperation with other actors.

**Stakeholder collaboration to identify appropriate green logistics practices**

Proactive and understanding-oriented companies may need to adopt a more agile way of working, when it has not been decided in advance which green logistics practices offer the best opportunities or what is required to successfully implement them. Within the framework of the ongoing project, we have the great privilege of following two different collaborations between two large logistics companies and one of their respective most proactive customers (transport buyers).

The two collaborations are referred to here as BS (Bring-Systembolaget) and PS (PostNord-Staples). For just over a year, we researchers have been allowed to sit as spectators at their strategic meetings, which took place quarterly and each time involved between two and ten people from the respective companies. Both collaborations have great similarities on an overall level, as they had a forward-looking aim: to jointly try to find the best changes that can be made in about 1-5 years to make logistics more sustainable.

**Change process for collaboration**

A first draft of a process image for how collaboration can look like in order to identify and design suitable green logistics practices for companies has been created, see orange boxes in the figure above. The study is still not complete and there remain what we believe to be at least two process steps (suggestions have been included with dashed lines).

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The first step involves clarifying target images. Companies can have different target images and in order to determine the direction of the environmental work, the companies must match their respective target images and find where the targets overlap. It is clear in both collaborations that the logistics companies' transition to fossil-free transport is tougher when the change must take place in their operations. At the same time, both transport buyers are demanding a faster conversion than the logistics companies originally planned for, which is pushing further. Furthermore, the transport buyer may have requirements regarding other target images, such as making sustainability work or social objectives visible. Based on a shared target picture, a joint mapping of the part of the transport buyer's logistics system that the logistics company takes care of takes place. In both of our case studies, the focus of the mapping has been on environment-related key figures such as CO2 emissions or types of fuel consumed. In the collaboration BS, the mapping of the logistics system continues in parallel with the following process steps, while in collaboration PS, a common system was decided early on to start from at the next process step, which leads to different focuses further on in the process, for example when identifying opportunities to improve the environmental performance of the logistics system. In the collaboration PS, the focus in the determined logistics system that more specific opportunities were identified, while in the collaboration BS it led to more general opportunities being identified.

**Contextual understanding**

Based on the mapping, various improvement opportunities were clarified and proposals for potential solutions began to crystallize. The fourth step, contextual understanding of possible actions means adapting actions that can be applied to the logistics system.
In practice, this means concretely adapting measures from a general level to what needs to change the actual logistics system and determining who has control over the action, who is responsible for the action and owns the change. However, it is noticeable that these are rapidly changing systems, the more easily implemented environmental improvement measures have been carried out on an ongoing basis. This also shows that the steps in the process are not completely linear, but that the companies continuously return to previous steps.

**Concrete action plan**

The subsequent process steps we have not yet been able to study, we believe will be about concretizing the

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implement the more advanced measures, for example based on available resources and greatest effect and then develop a concrete action plan for how the measure can be implemented. We have chosen to illustrate this here as two steps, but here the future will show the actual number of steps.

This will hopefully be followed by implementation and follow-up. Furthermore, the importance of cooperation with other actors has been highlighted on several occasions in connection with various measures. This can, for example, involve using other goods owners' warehouses or return transports, successful collaborations with fuel suppliers that enable conversion in certain regions, or working more closely with municipalities to enable new logistics arrangements. These collaborations probably need to be deepened if the companies choose to proceed with these proposed solutions.

**Every collaboration is unique**

Apparently, there are both similarities and differences in how the two collaborations follow and act in different stages of the process. It can be due to a number of different things, such as group compositions, where in one collaboration there have been more people representing different functions within the companies than in the other, which had a smaller group composition with more similar backgrounds. In the collaboration between BS, the common flow consists of relatively small volumes with a focus on home deliveries to consumers, while the in the collaboration PS is a focus on almost all volumes from the transport buyer out to various customer groups. Since the logistics system was significantly larger and more complex in the one collaboration, this may explain why more emphasis was initially placed here in particular to map the logistics system. Although both transport purchasing companies operate in different industries, there are a number of similarities. Both companies offer different sales channels, own their own warehouses, and are strong brands in their respective industries. In both collaborations it has been one open climate between the transport buyers and the logistics companies, and in addition to the strategic meetings between the parties, it appears that more meetings take place between smaller external constellations and internally at the companies.

Despite the fact that companies with different conditions can still find similar ways to cooperate with logistics operators to enable a green transition. Furthermore, although the process does not look exactly the same for all companies, continuous collaboration leads to the development of actionable measures that can be implemented in the system where it has the greatest impact.

**In total**

In order to get closer to the goal of climate-neutral freight transport systems, logistics players must find new ways to meet and drive the work forward. In our studies have

we have come across companies that have demonstrated innovation by reaching out to other companies and jointly finding solutions that can have a greater impact and save more resources than if the company had operated on its own. Logistics companies are important hubs in a collaboration that requires increasing involvement of other actors to actively drive environmental work forward.

We also see that the more proactive product owners are central to driving this development. Proactive transport buyers who are willing to carry out this form of very close cooperation with logistics operators will be able to draw great benefits in the form of increased competitiveness but also be able to participate and develop measures that are not only good for the environment, but also for them themselves. Companies that supply and sell vehicles and fuels will benefit from being helpful and cooperative in getting logistics operators to choose greener technologies.
The benefits are many and only when companies work closely together can the combined benefits trump the costs usually associated with a green transition.

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