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El-Logik

Elektrifierande Logistiks

Ele

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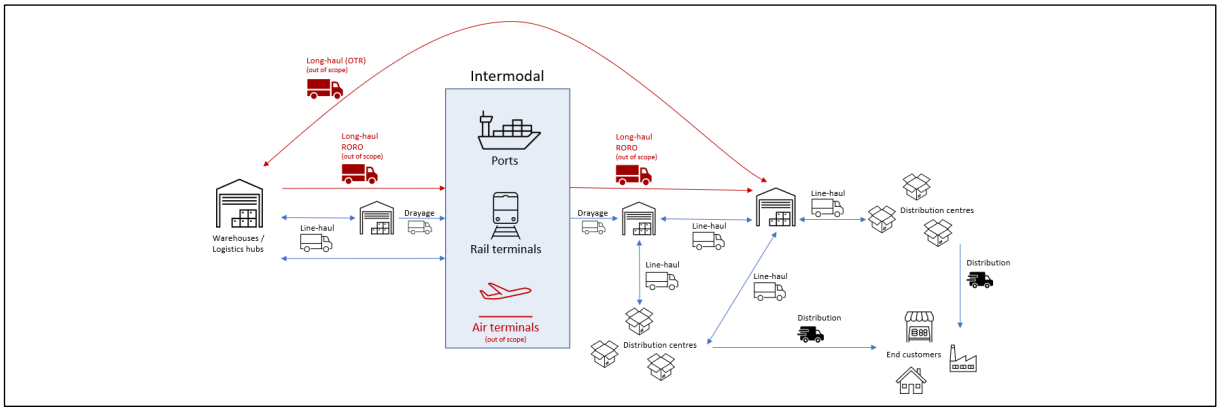
Electrification of trucks is one of the key enablers in reaching the EU requirements to reduce CO^2 from new trucks by 15% from 2025, and by 30% from 2030. This will only be possible if the needed charging infrastructure to enable the electrification of trucking is implemented. But how will such infrastructure look like across different types of logistics sites, from fuel stations to warehouses to intermodal terminals? And what are some of the practical and business implications that stakeholders will need to consider?



Figur 1 - Simplified diagram of the different types of trucking operations in logistics

This project is a pre-study that looks at what the preconditions are for establishing semi-public truck charging at three logistics sites with different operational characteristics. The project is a collaboration with Volvo AB and funded by Triple F Fossil Free Freight. The two main objectives are:

1. Establish what the operational assumptions and parameters for establishing charging stations at various logistics sites will be; and

2. Document stakeholder views on what business models would be feasible for electric truck charging at these sites.

Three case studies were selected to examine at a high level how electric truck charging could practically be implemented on the sites – including discussions about what considerations were important to the site owners.

Site 1 Mertz Transport Kombiterminal (Malmö) is an intermodal site where road freight is transferred from trucks onto rail wagons, and vice-versa. The site sees a mix of long-haul, line-haul and drayage vehicles transferring and receiving both palletised and container freight.

Site 2 DB Schenker Terminal (Borås) is a logistics hub located near Borås that is part of DB Schenker's much larger logistics hub network. The hub is used by a mix of line-haul and long haul vehicles, both from within DB Schenker's own fleet of vehicles as well as vehicles operated by contractors and those from other logistics companies.

Site 3 Circle K Vädermotet is a fuel station with secure truck parking and amenities catering to truck drivers. The site is located right outside of the Port of Gothenburg and used by a mix of long-haul and line-haul vehicles, many with deliveries to and from the port.

Project status:

A final draft of the project has been completed and is undergoing review amongst the project participants and stakeholders. A draft summary of the project's main findings is provided below.

Draft Summary of findings:

Every logistics site has different operational as well as business model characteristics. This pre-study has looked at which of these characteristics matter to the provision of semi-public charging infrastructure specific to three case studies and attempted to discuss why they matter. The study has made use of interviews and virtual workshops with a range of stakeholders in the logistics field, not least those from the facilities covered by the case studies. Some concluding observations can be made about findings which stood out and were either not immediately obvious or expected at the beginning of the study:

- **Opportunity for electric road systems:** Logistics sites tend to strive for layouts with as little protruding or fixed infrastructure as possible to avoid creating obstacles for vehicles. This means that traditional charging methods utilising cables (and associated power cabinets) will either be, at worst, completely unsuitable such as in the case of kombi terminals, or at best, difficult to implement – requiring customised solutions or compromises to the functionality or ease of use of the site. This suggests that logistics sites of all types could potentially be major benefactors from the successful commercialisation of charging systems embedded into the road surface, such as those being developed for electric road systems.
- **Investigate drayage segment for accelerated electrification:** The investment risk in transitioning a fleet to electric drivelines in trucking will be far from uniform across the sector. It is already well-known that city distribution is a low-hanging fruit for truck electrification. But on the heavier end of trucking applications, drayage services is also another segment that is well-suited to lead the transition towards electrification. This has already been acknowledged by programs in other jurisdictions such as California (Project 800 Initiative) that specifically targets this segment. Further research into drayage operations in Sweden should be undertaken to understand the size and nature of this sub-segment and whether policy measures targeting it for accelerated electrification should be considered.
- **Rollout of charging should be regional, but parallel across different types of logistics sites:** Line-haul vehicles and operators tend to be based locally within a logistics region, and within that region most vehicles used by haulers visit multiple types of logistics sites on a regular basis rather than specialise in shuttle traffic between just one type of site. With the exception perhaps of special cases such as drayage, the roll-out of charging infrastructure at logistics sites should ideally not occur in a sequential fashion that prioritises certains types of logistics centres (e.g. electrify X number of logistics terminals, before X number of distribution centres, before X number of kombi terminals) but rather in parallel within one region. This concept of a 'region' here refers to that used in logistics as opposed to regions as understood in a cultural or municipal sense.