Market evolution

- Realization - vision
Metropoles pushing toward clean mobility and logistics

Excluded (categorie N2 en N3; >3.5T)

Cities pushing toward clean mobility in city centers

http://urbanaccessregulations.eu/
Shaping the market for Alternative Fuel-trucks

Unsecured position for battery-electric (BEV) approach for Heavy Duty

Various OEM have seriously started developing e-Trucks for (city) distribution and waste collection

High Power plugs will become reality

- Charging with up to 1.5 MW
- Charging for 700-800 km in 45 minutes
Market outline

What does the market look like?
Evolving the market

Expansion of range speeds up the electrification of transport modalities

Depot Charging
warehouse, depot, destination
50kW – 150kW

Opportunity Charging
truck stops, POI’s, corridor
350kW – 600kW

(City) Hub Charging
intersections, long haul vs last mile
50kW – 600kW+

- Start of electrification with overnight charging first (depot/warehouse)
- Retrofit trucks <150kW will dominate the market till 2022
- Before 2023 minimal E-trucks above 350kW, no need to extend 600Vdc level
- HD vehicle battery size remain 200-300kWh, enough for 200-400km/day
- Next steps of OEM electrification focus on 450/600kW charging
- Intersections on Long Haul and Last Mile will become more important after 2023

ACEA data 2020

<table>
<thead>
<tr>
<th>Route Type</th>
<th>Km / day</th>
<th>% of Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Haul 1 transport cross border</td>
<td>800-900</td>
<td>9%</td>
</tr>
<tr>
<td>Inland region peer-to-peer</td>
<td>300-500</td>
<td>6%</td>
</tr>
<tr>
<td>Delivery and logistics</td>
<td>200-300</td>
<td>64%</td>
</tr>
<tr>
<td>Innercity</td>
<td>50-200</td>
<td>21%</td>
</tr>
</tbody>
</table>

Allego standard products and propositions
Allego scope for CEF application (GIGA-E) or upscaling programs (Horizon2020)
Heavy Duty Scenario setting
CEF application focus on scenario 3 and 4

Scenario 1 Depot (A → A)
- charging at depot (50-150kW)
- regularly returning to depot (~150 km)

Scenario 2 Depot-to-Destination (A → B)
- charging at depot (overnight) (50-150kW)
- extend trip after charging during docking (150-300km)

Scenario 3 Depot-Public-Depot (A → C → A)
- charging at depot (overnight) (50-150kW)
- extend trip by public charging OC (~450kW) (~300km)

Scenario 4 Depot-Public-Destination (A → C → B)
- charging at depot overnight (50-150kW)
- extend trip by (multiple) public charging OC (450kW)
- charge (overnight) at destination (50-150kW) (unlimited km)

Depot (Over Night Charging (ONC))
Destination (Transshipment Charging TC)
On-route (Opportunity Charging OC)
Allego’s role in electrification

- Upscaling pilots – supporting Long Haul and corridor electrification
Long haul perspective

From ‘Port-to-Port’ to ‘Port-to-Destination’ and what about rail and water?

CONCEPT
- 15 sites with OC charging facilities for 20+ vehicles
- 2000km, charging every 75km-100km

ROUTE
- A2/61 Amsterdam-Eindhoven-Bonn (300 km)
- A15/3 Rotterdam-Nijmegen-Dortmund (270km)
- A16/E17 Rotterdam-Antwerp-Lille (227 km)
- A73/E25 Nijmegen-Roermond-Luxembourg (290 km)
- A67/40 Antwerp-Venlo-Duisburg-Dortmund (243 km)

OPTIONS
- France: Lille-Charleroi-Dordmund
- France: Calais-Dover or Poland

Logistic Operator
- DB Schenker
- Rhenus
- Cornelisse
- De Rooy
- Kusters
- Dachse

https://www.statista.com/study/50218/top-100-logistics-companies-germany/
Core Allego Corridors:
- Amsterdam-Hengelo-Osnabruck
- Amsterdam-Rotterdam-Antwerpen-Brussel
- Brussel-Cologne-Osnabruck
- Rotterdam-Nijmegen-Duisburg-Cologne

Why?
- Opportunity charging increases flexibility and regional territory;
- 20,000-40,000 HD vehicles per day average corridor route;
- 50,000 transshipment activities near Ports per day;
- 25,000 logistic activities (delivery) near inner cities per day.

What to equip?
- Ports and POI's like highway stops and truck parking’s with ONC
- Major Corridor Routes with OC
- Multimodal charging facility were Long haul meets Last mile
- Embrace Logistic Operators to equip Transshipment POI’s
Thanks for watching