Introducing the Fleet Electrification Coalition
Road transport is a major source of CO$_2$ emissions

- Transport accounts for 20% of global emissions
- Road consumes 75% of total transport energy consumption
- 96% of energy consumed comes from fossil sources
EU regulations require ambitious emissions reductions for new trucks.

To meet these CO₂ targets, 30-45% of new trucks sold will have to be zero emissions in 2030.
Electric vehicles offer significant CO₂ reduction potential

*Life-cycle GHG emissions (g CO₂e/km) – 40t tractor-trailer
There is still a long way to go before new truck sales reach 30% zero emissions.
Our vision is to accelerate the adoption of eTrucks by harnessing the power of market demand

“By fostering a strong market for electric trucks, we will help drive the transition to sustainable transportation and reduce carbon emissions. Through strategic partnerships, innovative solutions, and targeted advocacy, we will empower businesses to make the switch to eTrucks, creating a more sustainable future for all.”
Electrification of medium- and heavy-duty trucks faces 3 key challenges

High cost and low supply
- The eTruck market will experience a supply shortage in the future
- Low expected production volumes contribute to high prices

Lack of charging infrastructure
- eTruck charging infrastructure needs to grow 180x to support electrification at scale
- Current grid capacity and capital availability are likely to limit pace of rollout

Carrier entry barriers
- Complex subcontracting structures, creating business case challenges for carriers
- High upfront investments, leading to capital constraints and benefit distribution discussions
The Fleet Electrification Coalition aims to address all the key hurdles identified:

- e-Truck demand & supply
- Joint procurement
- Practical guidance
- Carrier entry barriers
- SME / Financing
- Demand signal
- Public charging
- Shared charging
- Charging
A wide range of e-trucks is already available

Mapping of eTruck models available in the EU by weight / class and max range

1. Only including focus OEMs
2. Projected models OEMs are likely to produce in the next years - no specific range information yet
3. Gross weight vehicle rating: maximum weight the vehicle can weigh when fully loaded

Source: IHS, press release

More HDT models are available than MDT models

Main applications are in local and regional distances.

Many more vehicles are in the development pipelines and will be release in coming years.

For a current overview, please visit the ZETI database.
But we see a significant gap between supply and demand for the coming years.

**2022 eTruck production and demand forecast**

<table>
<thead>
<tr>
<th>Year</th>
<th>MDT ZEV production</th>
<th>MDT ZEV demand</th>
<th>HDT ZEV production</th>
<th>HDT ZEV demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2023</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>2024</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>2025</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2026</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>2027</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>2028</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>2029</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>2030</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>

---

1. Based on currently announced OEM production plans and demand forecast model based on BEV vs ICE TCO parity adjusted by regulatory constraints
2. Move from hundreds/ couple of thousands trucks ordered to tens of thousands of BEV trucks ordered

**By 2025 HDT latent demand double the announced production volumes; MDT latent demand >3.5x larger**

Current production announcements suggest that demand is likely to outpace supply of eTrucks until 2025.

Large production backlogs and more attractive business case for ICE trucks has made OEM response in building BEV capacity slower than potential demand signals.

Production of e-trucks needs to grow significantly. The coalition aims to encourage this, based on committed BEV truck orders.
We are aggregating demand for e-trucks to encourage stronger supply

**Step 1: demand signal**
*Target group:* all freight buyers, LSPs and carriers
*Commitment:* share existing and future electrification plans
*Focus:* all medium- and heavy duty trucks, EU and US

Please join us to make the demand signal as strong as it can be!

*Requested data:* short term electrification plans, longer term electrification plans, priority lanes for electrification, high-level charging strategy, etc.

**Step 2: Proof of Concept Tender**
*Target group:* 5 – 8 large fleetowners
*Commitment:* jointly purchase e-trucks
*Focus:* heavy duty trucks US (Class 8)

**Step 3: Tender scale-up**
*Target group:* all fleetowners
*Commitment:* jointly purchase e-trucks
*Focus:* variety of MHDTs, EU and US
Large scale e-truck procurement will benefit fleet owners as well as manufacturers

**Benefits for FEC members**

- **Get eTrucks faster**
  Gain priority access to limited supply and accelerate delivery timelines

- **Get eTrucks cheaper**
  Reduce TCO for eTrucks by 5-10% through demand aggregation, spec harmonization, and joint negotiation

- **Achieve decarbonization targets**
  Achieve sustainability goals and meet regulatory needs, with modules to electrify both owned and outsourced fleets (incl. SME carriers)

- **Become a sustainability front-runner**
  Meet consumer pressures on emissions and become a sustainability leader, enjoying the consumer green premium of 6-8% for sustainability front runners

- **Utilize procurement resources more efficiently**
  Focus procurement efforts on high quality engagements by dedicating resources to a set of pre-screened suppliers

**Benefits for OEMs**

- **Reduce costs**
  Spread fixed costs and gain economies of scale via increased production

- **Drive revenue**
  Increase revenue and solidify foothold in eTruck market through high volume orders, opportunities for recurring revenue (e.g., services)

- **Streamline sales process**
  Simplify customer acquisition process through joint procurement

- **Decrease risk and uncertainty**
  De-risk their investments in eTruck production and R&D via committed orders
The coalition focuses on the 2 charging solutions that benefit from collaborative action

<table>
<thead>
<tr>
<th>Solution</th>
<th>Description</th>
<th>Benefits</th>
<th>Downsides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private charging at company</td>
<td>Companies invest in own charging solutions for use by own trucks or 3rd parties</td>
<td>+ Easiest to coordinate</td>
<td>– High upfront investment</td>
</tr>
<tr>
<td>location</td>
<td></td>
<td>+ Priority charging access</td>
<td>– Low utilization rate</td>
</tr>
<tr>
<td>Shared charging at EV hotspot</td>
<td>Multiple companies collaborate with CPOs to develop charging stations at EV hotspots</td>
<td>+ Lower investments for users</td>
<td>– Requires more coordination</td>
</tr>
<tr>
<td>Public charging along transport</td>
<td>Large scale public charging stations along major transport corridors</td>
<td>+ No investment for users</td>
<td>– Concerns about impact on operations</td>
</tr>
<tr>
<td>corridors</td>
<td></td>
<td>+ Support widest range of use cases</td>
<td>– Likely results in highest cost per kWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Public charging infrastructure development requires bottom-up information

Taking a top-down approach tells us we need to have 3000+ truck charging locations…

…but where do we need them first?

- Charge point operators will only make investment when they are confident there is demand at a certain location
- Transportation companies are in a position to indicate where they plan to deploy the first e-trucks
- Guaranteed usage will speed up the development of public charging sites
- We will use the CHALET tool, developed by Amazon, to perform a bottom-up analysis of priority public charging locations

Please join us in this effort by sharing your deployment plans!
Shared charging solutions will help overcome major hurdles

A shared charging solution will be located at high traffic locations

Logistics zone

Key benefits

- The **high upfront investment** for high-power chargers can be **shared across multiple stakeholders**
- Requesting 1 large grid upgrade instead of multiple smaller ones works better for grid operators
- Less trucks taking up warehouse space during charging
- Higher **asset utilization rates** lead to a better business case
- Asset management responsibilities can be outsourced to a professional party

Please join us in this effort by:

- helping work out the concept
- commit to future use
Concrete example: Bad Hersfeld

- Bad Hersfeld is a logistics hotbed in the middle of Germany
- A large number of logistics companies are all located fairly close to each other
- All companies deploying private charging solutions would result in:
  - suboptimal asset utilization
  - higher total investment
  - dozens of individual applications for grid upgrades where Tennet projects grid congestion for the next few years
- It’s likely there are strips of land that are not big enough for a warehouse, but are perfectly suitable for charging infra deployment

Let’s work together to develop a shared solution that benefits all stakeholders!
We will publish a series of guidance documents to support shippers and carriers.

- **Depot charging guidelines**: Provide guidelines on how to design the charging infrastructure at a depot. Final version ready. Publication in coming months.

- **Influencing carriers**: Provide recommendations on how shippers and carriers can work together on EV adoption. First draft under review. Publication in Oct/Nov.

- **Electrification impact analysis**: Describing impact of EV adoption on operations, finance and environment. Content under development. Publication in Oct/Nov.

- **Operational deployment guidelines**: Provide comprehensive guidelines on how to effectively deploy EVs. In scoping phase. Likely to start early 2024.
Including small- and medium sized carriers is the key to large-scale electrification

Small- to medium sized companies form the majority of the European trucking market…

…an inclusive approach is required to maximize impact

- The purchase price of e-trucks, even at TCO parity to diesel trucks, will be significantly higher.
- Trucking companies operate on low margins and have limited capital available to support CAPEX requirements.
- Many small transportation companies have limited borrowing options from banks.
Turning CAPEX into OPEX is the key to unlocking e-trucks for carriers

Objective
Create a scaleable mechanism for ‘leasing’ e-trucks to SME carriers at cost parity compared to diesel trucks

Impact

**Carriers**
- Guaranteed access to e-trucks
- High upfront investments avoided
- Clear incentives
- Improvement of competitive position

**Shippers & 3PLs**
- Decarbonized road-transport
- Reduced risk

**Finance industry**
- Unlock revenue potential
- Derisked investments is a vast industry
How you can get involved: join the action!

**e-truck demand**
- Express your interest in benefiting from joint procurement to your carrier manager

**Charging**
- Join the working group for shared charging
- Share your e-truck deployment plans to influence public charging roll-out

**SME**
- Join the working group to be among the first to benefit from innovative e-truck financing
Thank you!

For FEC membership discussions, contact Ruben van Doorn
ruben.van.doorn@smartfreightcentre.org

For any other questions, reach out to us at
sfba@smartfreightcentre.org

OR visit our website to explore more

Schedule an onboarding call with SFC

Begin collaborating!