Shared Charging Working Group
**Project overview: FEC Shared Charging**

**Project description:**
The focus of this project is to present a concept that encourages collaboration among companies operating within close proximity, enabling them to collectively invest in a shared charging infrastructure.

The project aims to significantly reduce the individual investment requirements for companies seeking to establish private charging facilities. Furthermore, this collaborative approach provides charge point operators with increased demand certainty, making the investment in shared charging stations an attractive proposition. Finally, this concept reduces the pressure on grid operators by requesting a single large upgrade rather than multiple individual upgrades.

We intend to develop a comprehensive framework that facilitates the successful implementation and operation of shared charging stations for e-trucks.

**Project objectives:**
- Forge strong collaboration between SFBA members for the development of shared charging locations
- Develop an outline of shared charging concepts
- Develop a proof of concept for shared charging solutions

**Project deliverables:**
- Solution design, including
- Publication of concept note – Shared Charging
- Design of Proof of Concept pilot project(s)

**Project team / working group:**
- Amazon
- CHEP
- Geopost
- Green Finance Institute
- Prologis
- Sovereign Speed
- Tchibo
- Terawatt
- Cargill
- BAT
- Others to be added soon

**Key stakeholders:**
- Charge Point Operators
- Shippers
- LSPs
- Carriers
- Grid operators
- Real Estate companies
- Technology Providers

**Milestones**

<table>
<thead>
<tr>
<th>Year</th>
<th>Milestone</th>
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<tbody>
<tr>
<td>2023-11</td>
<td>Compose shared charging working group</td>
</tr>
<tr>
<td>2024-01</td>
<td>First working session + finalize project outline</td>
</tr>
<tr>
<td>2024-03</td>
<td>Second working session + stakeholder involvement</td>
</tr>
<tr>
<td>2024-05</td>
<td>Third workshop + draft proof of concept design ready</td>
</tr>
<tr>
<td>2024-06</td>
<td>Go / no-go re pilot</td>
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Shared Charging Is Positioned Between Private and Public Charging

**Solution**

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

Concerns about grid availability will exist in all solutions and require solutions beyond the scope of FEC.
Shared Charging Aims to Overcome the Downsides of Private Charging Solutions

1. **Upfront investment**
   Private e-truck charging facilities will require significant upfront investment. With hardware costs ranging from ~$30k (50 kW) to ~$200k (350 kW) per charger, large investments will be required.

2. **Grid capacity**
   Most buildings will not have sufficient bandwidth in the existing electricity connection. Large numbers of high grid upgrade request from individual site owners will be difficult to handle for grid operators.

3. **Space limitations**
   With land being a scarce resource in popular logistics locations, large numbers of truck occupying space at warehouses is likely to cause operational issues.

4. **Asset management**
   Owning and operating charge points will force site owners to also manage and maintain the assets, which are an additional burden on site-owner operations.

Shared charging solutions will allow stakeholders to share investments with other users, while also creating the opportunity for Charge Point Operators to take on (part of) the investment.

Shared charging locations will apply for 1 large grid connection instead of individual companies requesting many smaller grid upgrades. This will make it easier for grid operators to facilitate the request.

Shared charging locations could potentially be placed at locations that are less ‘prime’ than the space allocated for warehouses, making it more acceptable to have trucks occupy space.

Asset management could be outsourced to the Charge Point Operator or other asset management professionals.
The Problem

- Logistics, and road freight specifically, are under pressure to decarbonize
- High level of interest in the benefits of shared charging, with little real-world examples
- High costs, uncertain business cases, and a congested grid contribute to hesitation in private depot electrification and position shared charging as a key solution to enable depot electrification
- Shared charging is a new concept, and thus needs thorough exploration before implementation
- By adopting a collaborative approach, we can preempt sticking points and build consensus
How Will We Accomplish Our Goals?

- **Collaborative member meetings**: meetings will take place every six to eight weeks, lasting one hour
  - This timeframe is flexible as we can increase capacity if/when it is needed
  - We will conduct three action-oriented sessions fostering two-way communication
- **FEC will drive progress**: providing research, expertise, and problem solving beyond the group gatherings
- **Member contributions**: participants will share their specific knowledge and insights on session topics
- **Increasing responsibilities**: we anticipate that the participants will be willing to take on additional responsibilities
- **Geographically agnostic lens**: The first responsibility of this working group will be to produce consensus around key aspects of shared charging, with the pilot location decided on in the second.
- **Success Factors and Real-World Implementation**: Our approach involves first understanding success factors and considerations, which will serve as the foundation for our work as we move toward real-world implementation.
Who Should Join?

• The current group stands at 15 participants, with representatives from key industry areas
• The FEC is looking to involve those who have an action and results-oriented approach
  • We are happy to include those looking for outcomes and information to the communications list
• Looking for the right mix from key areas such as
  • Logistics users (urban, regional, and long haul - are all welcome!)
    • LSPs
    • Shippers
    • Carriers
  • CPOs
  • Technology (route planning, reservation services, etc.)
  • Utilities
  • Real estate
  • OEMs
  • And more
Expected Outcomes

- **Guidance – based on lessons learned**
  - Including the publication of a Shared Charging Concept note in a morphological matrix framework, this publication will consolidate key concepts related to ownership, operation, use cases, and more

- **Planning – production of a solution outline**
  - Identification of logistics location “hotspots” for implementation

- **Scalable proof of concept**
  - Geographic specification and real-world applications
Thank you!

Uniting corporate freight buyers to shift towards zero-emissions freight across all modes of transport in collaboration with their supply chains and partners.

Join us today!

Please send an email with your information to:

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