“SSAB Industrial Transports”

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SSAB Europe Oy
Kuljettava Oy
Case: *Joint Project Electrifying Heavy-Duty Industrial Transportation*

This is SSAB

- **SSAB*** is a Nordic and US-based **steel company** that builds a stronger, lighter and more sustainable world through value added steel products and services

- SSAB is a member of the **First Movers Coalition****, founded by the World Economic Forum in 2021. SSAB has commitments to use emission-free truck transport services by 2030
- SSAB has set **Science Based Targets initiatives***** STBi in scopes 1, 2 and 3
- Start up of SSAB´s **first fossil free mini-mill in Luleå** end of 2029
- Since 2023 SSAB Zero product, made using recycled steel and fossil free electricity

SSAB Special Steels
has global responsibility for sales of SSAB's quenched and tempered (Q&T) steels and advanced high-strength steels (AHSS) as well as for the production sites in Oxelösund, Sweden, and in Mobile, USA.

SSAB Europe
is responsible for sales of strip, heavy plate and tubular products in Europe, the global business in the Automotive customer segment (AHSS) and for the production sites in Raahe and Hämeenlinna, Finland, and in Luleå and Borlänge, Sweden.

SSAB Americas
is responsible for sales of heavy plate in North America and for the production site Montpelier, USA.

Tibnor
is the Group's distributor of a full range of steel and non-ferrous metals in the Nordics and Baltics. Tibnor buys and sells materials produced both by SSAB and other suppliers.

Ruukki Construction
produces and sells energy-efficient building solutions, with a focus on northern and eastern Europe.

*Read more about SSAB from web-pages SSAB high-strength steel - sheet, plate, coil, tube, profile – SSAB
**Read more about First Mover Coalition Home | First Movers Coalition
***Read more about Science Based Target initiatives Ambitious corporate climate action - Science Based Targets Initiative

Kuljettava Oy

who we are and what we do

KEY CUSTOMER SEGMENTS

Paper, cardboard, pulp and lumber

Steel coils and other steel products

bulk goods, e.g. concentrates, ores and fertilizers

Construction industry products

circular economy

- Headquarters
  Kouvola, Finland
- Founded in 2025 after a carve-out from VR Group
  — continues a 40-year legacy in the business.
- Owned by Mutares SE & Co. KGaA
- Turnover of €70 million
- Key focus on large industrial customers

Joint Project Kuljettava & SSAB 2022 - 2025

Funded by the European Union
NextGenerationEU

To electrify heavy-duty industry transports → short distance deliveries (→ 200 km)

Drivers and background: (2023)

- Both companies have aspiring targets in reducing emissions
- Customers demands for fossil free transportation
- No experiences nor common practises available in BEV solutions/heavy-duty truck transportation
- No battery charging infrastructure available in Finland to BEV trucks (2022 no charging stations).

Target:
Feasibility study and piloting of electrifying heavy-duty transports / short distance deliveries to reduce emissions

- Can it be proceeded in commercially sustainable way
- What are the possible challenges and obstacles and how those can be solved
- How the preliminary simulations are corresponding to the reality e.g. charging times, ranges etc.

Project responsibilities:

SSAB:
- To install heavy duty transportation charging points at SSAB Hämeenlinna Mill
- To offer steel products to BEV trucks/agreed areas

Kuljettava:
- To acquire BEV trucks for the project
- Driving arrangements and required system changes
- Physical vehicles charging and providing the transportation services

Charging station Hämeenlinna facts:

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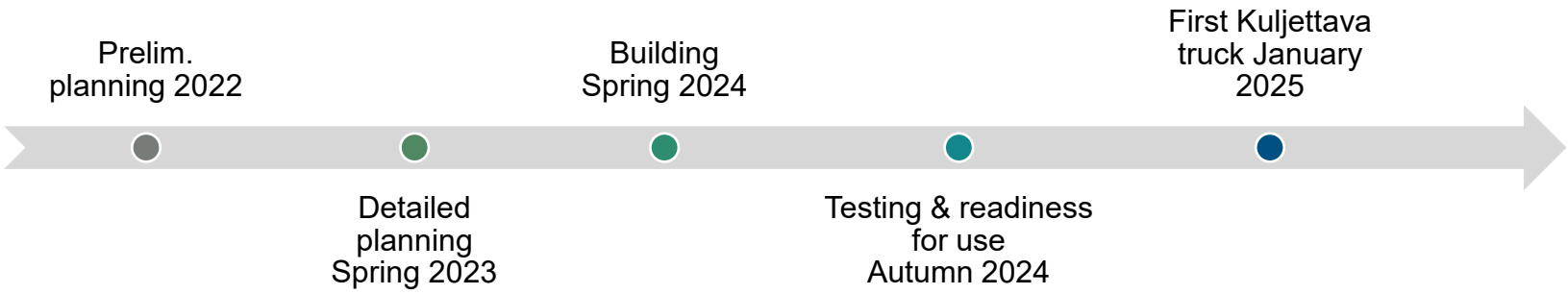
Charging station in Hämeenlinna by PLUGIT

- **Plugit Hube CCS**
  - 720 kW Power station
  - Oil transformer substation 1600kVA
  - 2 pc 360 kW satellite, both having 2x charging cables = in total 4 charging stations
- Charging available to SSAB contracted transportation companies
- SSAB sells electricity, invoicing by Plugit



2022 – 2025 = long time from the beginning of the project to the first truck !!

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Charging station in Hämeenlinna

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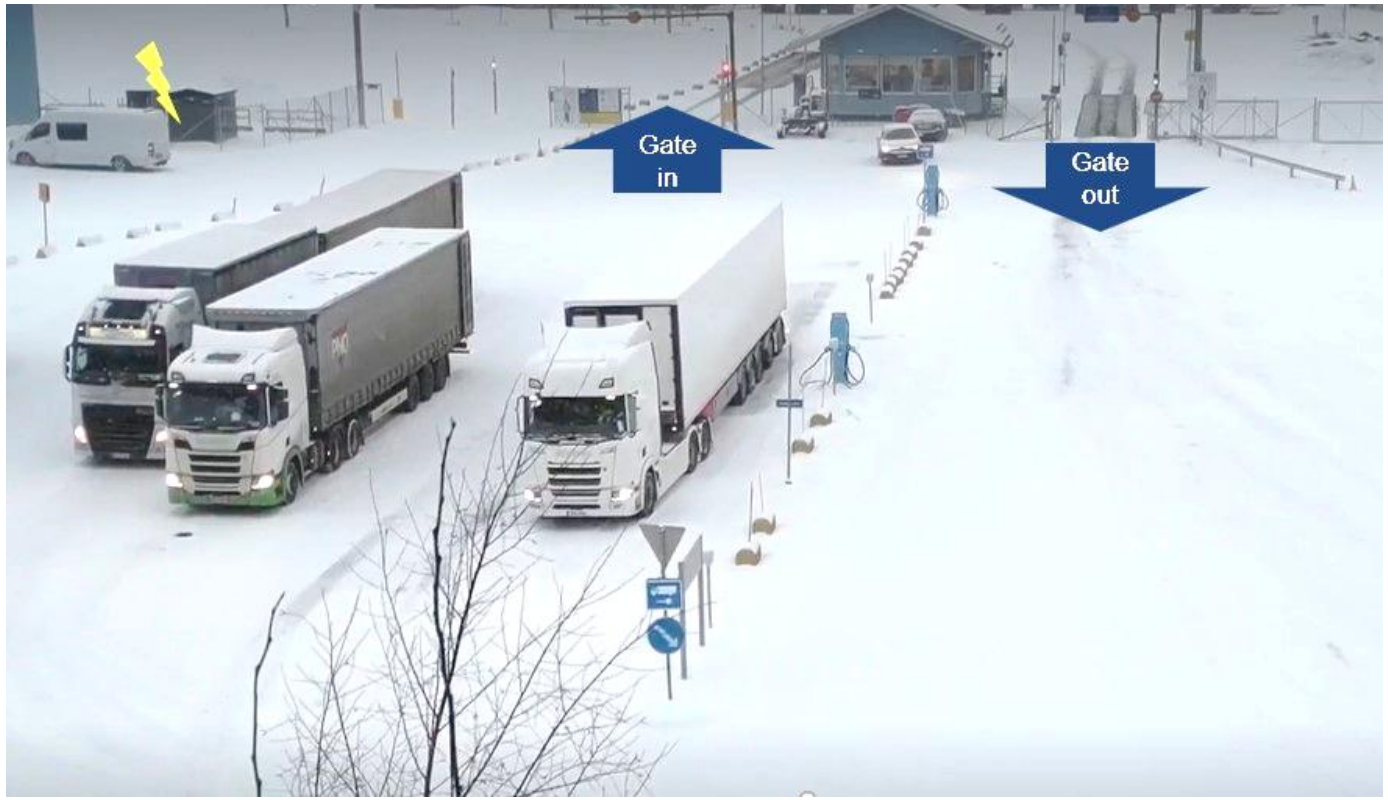

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A vehicle full of innovations

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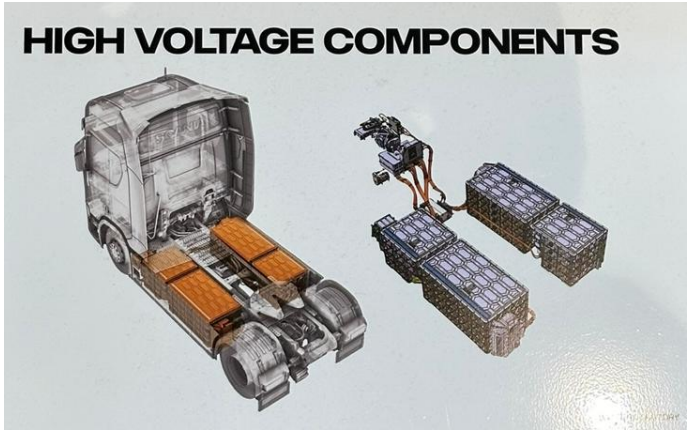
5-axle lifting curtain trailer with hydraulic tilting roof

- High capacity
  - Load space length 16.4 m
  - Capacity 39 tons of cargo
  - Capable of carrying coil weights up to 28 tons
- Energy efficient
  - 3 lifting axles on the trailer to reduce rolling resistance
- High security
  - “Pole-hole floor” enables safer supports and reusable coil supports

Scania R400E A6x2*4 BEV

- Net weight 12.3 t (diesel 10 t)
- Battery
  - Total capacity 624 kWh
  - SOC 75%, 468 kWh available
  - Weight 3.6 t
- Charging connection CCS type 2
- Engine, EM 400 C3-6
  - 400 kW or 544 hp
  - Maximum torque 3500 Nm



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Operating range with one charging point

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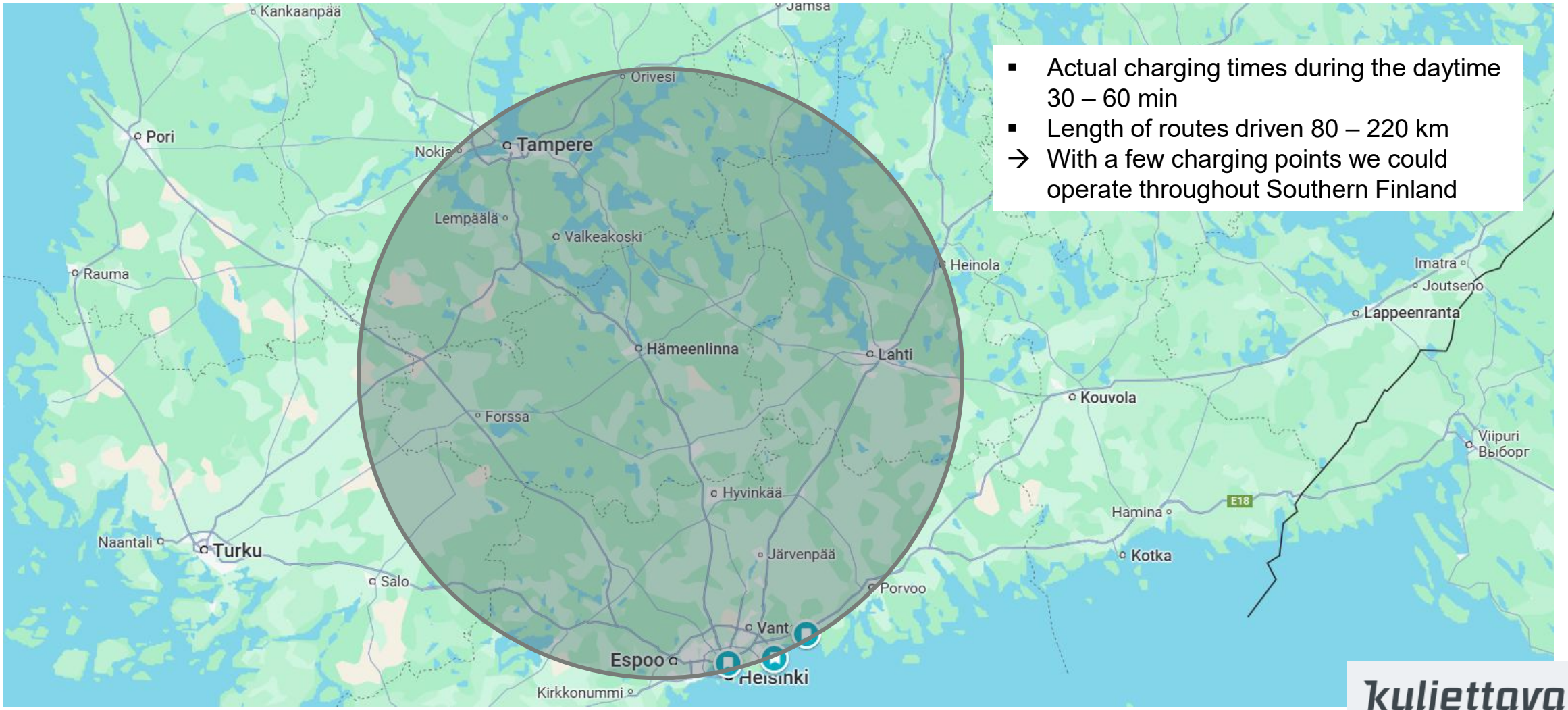

- Actual charging times during the daytime 30 – 60 min
- Length of routes driven 80 – 220 km

→ With a few charging points we could operate throughout Southern Finland

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Joint Project in a Nutshell

Funded by the European Union
NextGenerationEU

* **Funding !!** Received government grant from Traficom *(”Raskaan teollisuuden kuljetusten sähköistäminen”) and SSAB management committed to invest to the charging station and VR /Kuljettava to the BEV trucks*
* Excellent supplier co-operation with all parties
* Testing of the charging points was successful even when the joint project truck was delayed
* No technical challenges with neither charging nor truck (charging success rate close to 100 %)
* **In 8 months about 17500 tons steel short distance deliveries with electricity instead of diesel → less emissions (APPROX 32000 litres diesel) 80 tn CO2 + other emissions**
* **Experiences support expanding of the usage of BEV for heavy-duty industry**

* Exactly best location of the charging stations?
* What are future Best practices? Examples: trailer battery also requires charging /plug socket needed or how to mark and paint the charging spots.
* Transportation planning: to prioritize BEV truck deliveries→ requirements to future TMS systems
* Experience in extremely challenging weather conditions is lacking. Last winter was mild.

Future development topics to tackle together:

* Means and methods how to reserve/book/use the charging stations in future (day and night) (→multiple users)
* How to prioritize the e-trucks through the gate to the mill area
* Reporting development & cloud access and visibility to transportation companies
* Winters with a lot of snow: maintenance challenges at the charging field

Electrifying heavy-duty industrial transportation and emission deduction is doable, when:

1. There is **common interest and committed partners** across the entire value chain, all working toward the same goals.

2. Piloting, testing, and further analysis are needed to **identify best practices** and share knowledge.

3. Means and methods are required to address the **identified obstacles and challenges** that hinder or delay progress (e.g., financing, charging infrastructure, political climate).

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