

# REEL

## Regional Electrified Logistics

*Andreas Josefsson*



# REEL involves 45 organizations all around Sweden in various types of industries



# In the project 60 logistic solutions are established and cover multiple applications with trucks in the range from 16 to 70+ tons

AN

**Total**  
**63** BEVs  
 whereof  
**18** prototypes





**DHL**  
AKERI

VOLVO

FH

AGS 93R



# ICA

ELECTRIC

Den här bilen drivs av  
förnybar el och matglädje

FÖR EN GOD  
MORGONDAG

VÅRA KLIMAT-  
GUIDADE RECEPT  
nyttigt dig ut  
om klimatet  
???

ICA

SKONA  
- ett hälsot väl

100%

Ne kör vi  
500 gram frukt och  
gränsöcker om dagens!

100% ELDRIVEN

NWH 637



MAERSK

MAERSK

DELPHIS

est

SmartLevert

SmartLevert

SmartLevert

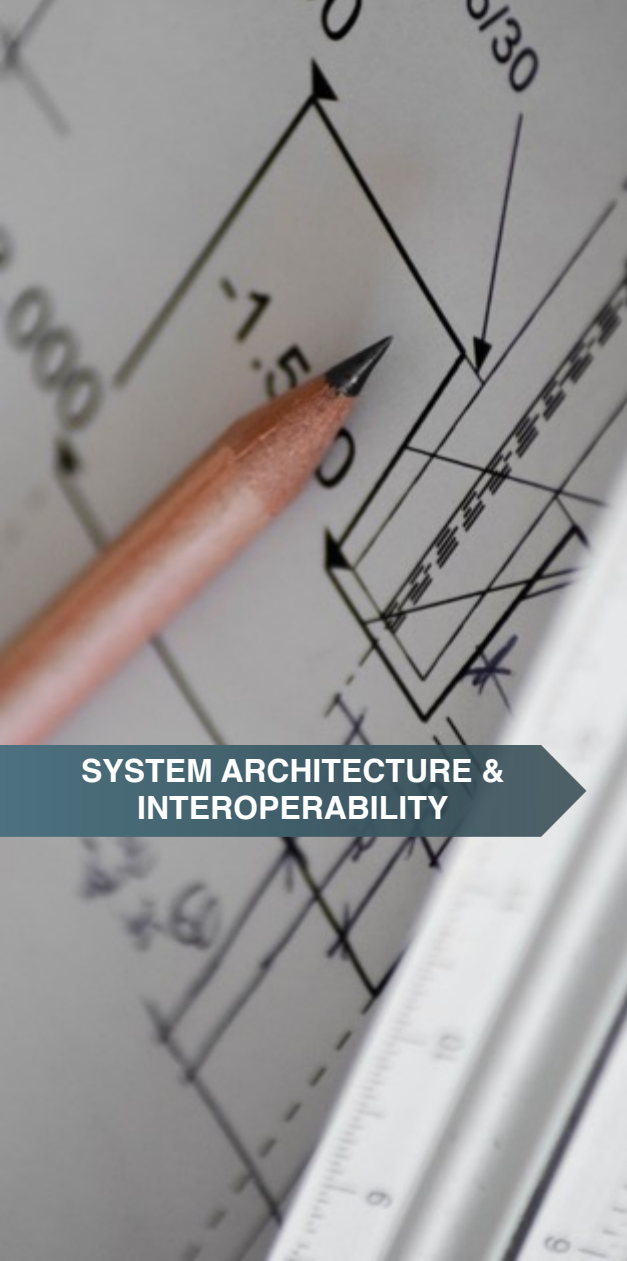
Sn

SCANIA

32m

32m

The parties work together in horizontal work packages, harmonized solutions are developed to accelerate the transformation



**SYSTEM ARCHITECTURE & INTEROPERABILITY**



**POLICY & REGULATION**



**BUSINESS & FINANCING MODELS**



**WORKING CULTURE & KNOWLEDGE**



- Two battery-electric rigid trucks each with a refrigerated superstructure and a total weight of 27-tons.
- Operate in 2-shifts (06:00-22:00) on weekdays and 1-shift on Saturdays and Sundays. The trucks operate approximately 250 km on weekdays and 120 km on Saturdays and Sundays, 350 days a year
- The trucks and their batteries are fully depreciated in 6 years.
- Installed battery capacity is 300 kWh and the total vehicle incl. refrigeration consumes 1.25 kWh/km, the equivalent diesel vehicle consumes 0.27 l/km.
- In this case, the extra weight of the batteries has no impact on the operation, as the goods are rather limited on volume.
- Charging take place at the same time as reloading at the terminal takes place without additional downtime. In addition both trucks are charged in a depot at night.
- The charger at the terminal has an output of 175 kW, each vehicle uses this charger for approximately 2 hours per day. The chargers used at night have an output of 25 kW and are used for approximately 6 hours. All chargers are fully depreciated after 6 years. A service agreement is paid for all chargers
- It must be noted that this is on the condition that public co-funding can be obtained for both charging infrastructure and trucks.
- The comparison above do not include interest rate and the additional time for preparatory work for the electric solution that the logistic operator needs to do with regards to discussions with e.g. transport buyers, hardware suppliers, grid companies as well as applying for public co-funding. Maintenance cost has been noted to be approximately the same for both solutions and is not included.

| Cost element                             | Electric (SEK/yr)                      | Diesel (SEK/yr)                  | Comments  |
|--|--|----------------------------------|---|
| <b>Hard- and software</b>                |  |                                  |   |
| <b>Trucks</b><br>(incl. superstructure)  | (2 x 3 700 000 x 0.8) / 6 =<br>986 667 | (2 x 1 800 000) / 6 =<br>600 000 | 2 trucks, 6 yr depreciation, public co-funding for electric truck 20%         |
| <b>High power charger</b>                | (790 000 x 0.6) / 6=<br>79 000         | N/A                              | 6 yr depreciation, public co-funding for charger 40%. Incl. installation.     |
| <b>Low power charger</b>                 | (190 000 x 0.6) / 6=<br>19 000         | N/A                              | 6 yr depreciation, public co-funding for charger 40%. Incl. installation.     |
| <b>Fuel, power and energy</b>            |  |                                  |   |
| <b>Service agreement for charger</b>     | 13 000                                 | N/A                              |   |
| <b>Power tariff</b>                      | 94 500                                 | N/A                              |   |
| <b>Energy and grid transmission cost</b> | 186 250                                | 776 439                          | Mileage / yr 2 trucks:<br>149 000 km<br>1 SEK / kWh and 19.3 SEK / lit diesel |
| <b>Staff</b>                             |  |                                  |   |
| <b>Drivers</b>                           | 2 880 000                              | 2 880 000                        | 2400 h / truck per year.<br>600 SEK / h                                       |
| <b>Total cost</b>                        | <b>4 258 437</b>                       | <b>4 256 439</b>                 | Cost parity   |



**Report soon to be released!**

# REEL

## Regional Electrified Logistics

Report based on interviews with logistics actors  
1<sup>st</sup> edition 2022:08

**CLOSER**



[closer.lindholmen.se/projekt/reel@lindholmen.se](mailto:closer.lindholmen.se/projekt/reel@lindholmen.se)



[@CLOSERse](#)  
[@Lindholmen Science Park AB](#)



[andreas.josefsson@lindholmen.se](mailto:andreas.josefsson@lindholmen.se)