ELECTRIFICATION – ONE ROAD TOWARDS SUSTAINABLE TRANSPORT SOLUTIONS

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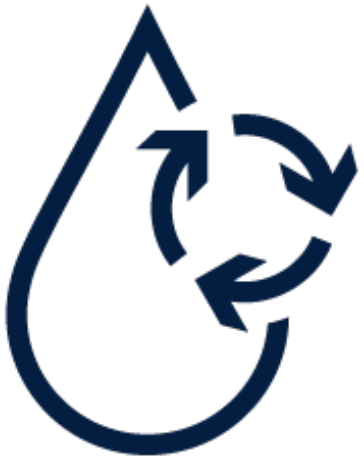
Region Gävleborg SIEMENS SCANIA

SCANIA'S APPROACH TO SUSTAINABLE TRANSPORT

Energy efficiency



Alternative fuels and electrification

Smart and safe transport

ELVÄG E16, TEST BED FOR EXPERIENCES FROM PRACTICAL IMPLEMENTATION

- Decision June 2015: a 2 km long facility on the E16, outside Sandviken
- Region Gävleborg is project owner and builder
- Financed mainly by Trafikverket, Energimyndigheten, VINNOVA, Scania and Siemens
- Built without legal dispensations
- During two years run two trucks with loads up to 60 tons – in test and commercial traffic.

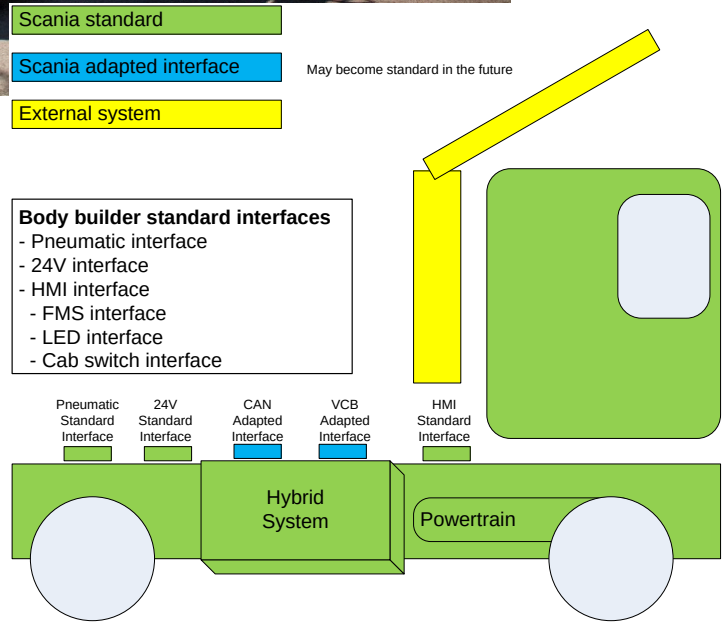
ELECTRIC ROAD IN REGION GÄVLEBORG

THE FACILITY

- Infrastructure/facility owner Siemens
- Power supply Sandviken Energi
  - 10 kV AC
  - After conversion 650-800V DC
- Catenary system – common technology in use in other sectors today
- Easy and fast to build
- During use no interference with other traffic

VEHICLE: SCANIA PARALLEL HYBRID

- 264kW Euro 6 diesel, 139kW electric engine,
- 100kW battery – up to 10 km
- Limited adjustments needed for operation on electrified road
- Parallel hybrid platform well suited to:
  - enable electrification and to
  - ramp up production on customer demands



SAVINGS WITH ELECTRIC ROAD
40 TONNES TRUCK

Energy	Electricity 150 kWh/100km	Diesel 30 l diesel/100 km =300 kWh	Saving 50%
Cost	75-150 SEK/100 km	450 SEK/100 km	80%
CO_2	9 kg/100 km	90 kg/100 km	90%

Challenge: weight of batteries – 1500 kg - but still a factor five lower than with only battery

We develop electric roads in cooperation

regiongavleborg.se/elvag

Challenges

- Motivated on roads with high transport density
- Need strong commitment among stakeholders
- Large investment in infrastructure
- Decision and governance
- Public or private interests and investment?

Benefits for HD Long haul

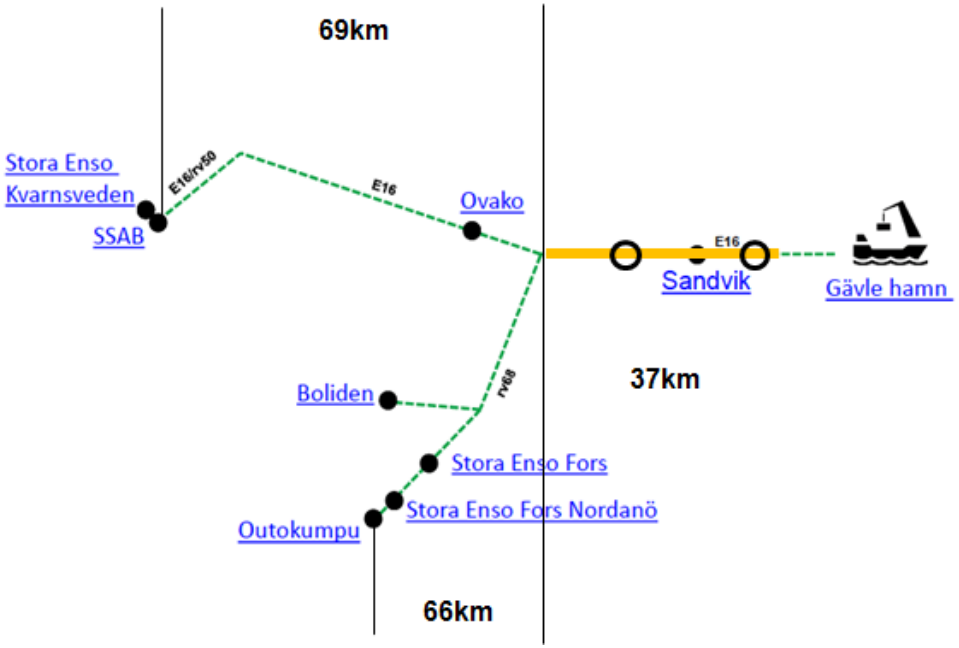
- Reduced operational cost
- 50 % reduction of energy use
- Use of sustainable energy
- Transportation productivity kept or improved
- Normal operation for the driver
- Limited need of batteries

Region Gävleborg SIEMENS SCANIA

WHY REGION GÄVLEBORG?

- Good experience in “bridging the gap”, enabling value chains to bring solutions to use
- Regional industry (Dalarna and Gävleborg) with high demands on increasing capacity of climate smart road transportation
- Accomplish full implementation of electrified highway for heavy transportation on E16 Gävle harbour-Borlänge
- Boost export, innovation and development around sustainable heavy logistics
- Attract investments and research to Gävleborg
- Foster regional increase in growth, employment and quality of life

NEXT STEPS



Region Gävleborg

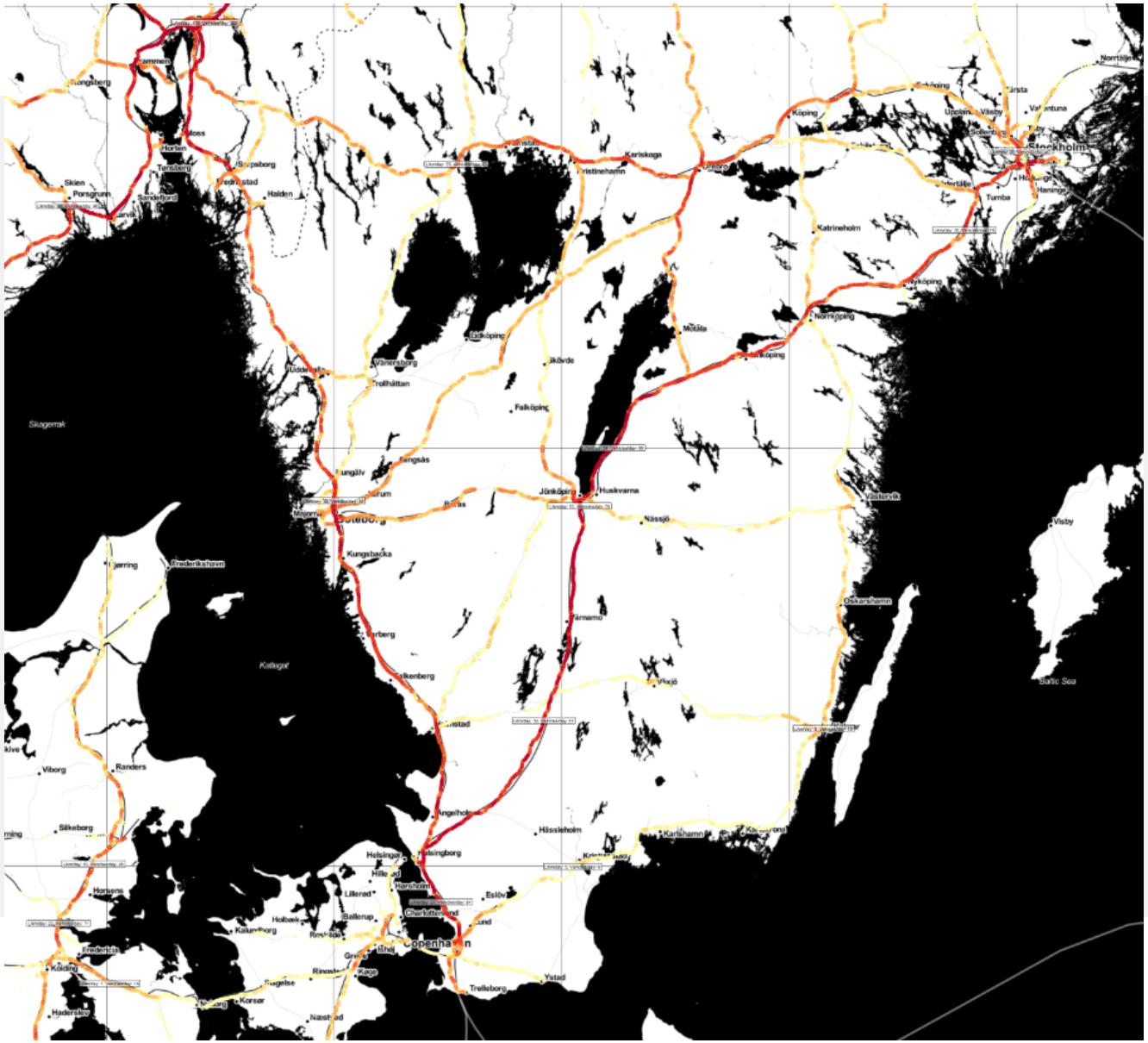
SIEMENS

SCANIA

POTENTIAL FOR ELECTRIFICATION

Electrification of 3% of the Swedish highway network saves 25% fuel

10% of the highway network saves 50% fuel



Thank you!

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