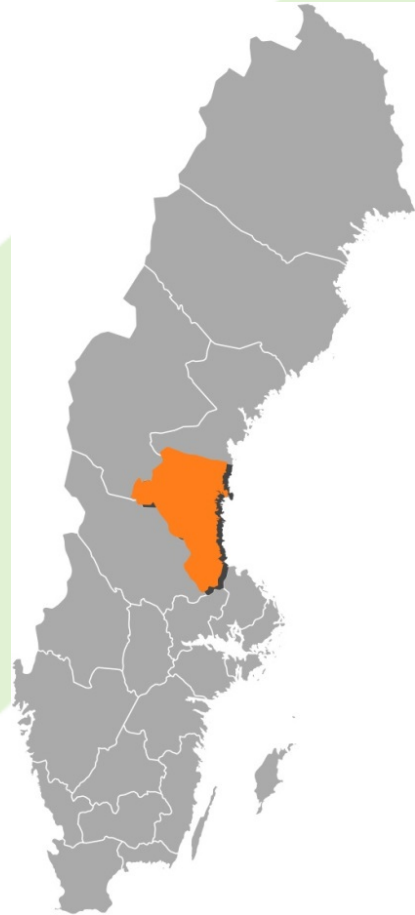


Electric Road – E16 Sandviken



Background

- By 2030 road transportation in Sweden is believed to have increased to app 60%
- 86% of all Swedish transports are on road
- Move to electricity as energy source for heavy road transportation is faster then expected (no matter what you expect)
- Technology and business models to supply and/or carry energy on vehicles will depend on application and develop over time.
- This is an opportunity when we balance and work together
- Bridge the gap - Pre Commercial Procurement!
- The ElvägE16 is a demonstration facility, to gain knowledge and experience about electrified heavy transportation



A map of Northern Europe showing Sweden (Sverige), Norway (Norge), Denmark (Danmark), and parts of Finland and Lithuania. Two green arrows originate from the left side of the image and point towards the cities of Stockholm in Sweden and Oslo in Norway. The map includes labels for the Baltic Sea, the Gulf of Bothnia, and major cities like Copenhagen and Riga.

ELVÄG E16, test bed for experiences from practical implementation

- Decision june-15; 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.



Some of the partners in the demonstration project

- **Project owner/coordinator**

Region Gävleborg

- **Main partners**

Siemens and Scania

- **Main financing**

Swedish Transport Administration,
Swedish Energy Agency and
Swedish Innovation Agency

Industry/ Logistics buyers

- Boliden
- SSAB
- Sandvik
- Outokumpu
- Stora Enso
- Ovako

Freight vendor

- Ernsts Express

**Regional/local public
authorities**

- Sandviken municipality
- Sandbacka Science Park
- The Port of Gävle
- Region Dalarna

**Construction/
Maintenance**

- PEAB
- Ramudden
- WSP
- JB Rail

Energy

- Vattenfall
- Skellefteå kraft
- Gävle Energi
- Sandviken Energi

Permits, Policy and Legislation

- Swedish Transport Administration
- County Administrative Board
- National Electrical Safety Board
- Swedish Transport Agency

Vehicle industry

- Scania

Safety, Surveillance, Rescue

- Swedish Transport Administration
- Swedish Transport Agency
- County Administrative Board
- Swedish Police
- SOS Alarm (Emergency dispatch)
- Gästrikland Fire/Rescue Service

Academia and research

- RISE Viktoria Swedish ICT
- Royal Institute of Technology
- Sw National Road and Transport Research Institute
- Chalmers University of Technology
- Lund University Faculty of Engineering
- Norwegian Centre for Transport Research
- Stockholm School of Economics
- University of Gävle

National Research platform for ERS

- *Project Management*
RISE/Victoria Swedish ICT
- *Main Financing*
**Fordonsstrategisk
Forskning och Innovation
(FFI)**
**Trafikverket, Industry
partners**

- Chalmers
- KTH
- LTH
- Trafikverket
- TØI Transportøkonomisk Institutt
VTI
- Viktoria Swedish ICT

- Fortum
- Profu
- Scania
- Vattenfall
- AB Volvo

- Region Gävleborg
- Regionförbundet i Kalmar län
- Airport City Stockholm

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

regiongavleborg.se/elvag



Vehicle

- Scania, Euro6 Class
- Parallel hybrid power train
- 264kW diesel, 139kW electric engine, 100kW battery
- Still a test vehicle
- Parallel hybrid platform well suited to:
 - enable electrification and to
 - ramp up production on customer demands

regiongavleborg.se/elvag



 Instagram @elvag_e16

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 – for the regional industry
- Boost export, innovation, development around sustainable heavy logistics
- Attract investments and research to Gävleborg
- Foster regional increase in growth, employment and quality of life

Today



- Since inauguration; 52 groups, about 580 visitors
- Tests are running fine
- We suffer from a lack of problems (not even snow this winter)
- Cooperation nationally and internationally
- Strong cooperation with the national research platform for ERS
- Strong interest from regional industry for electrification in logistics
- Work on extending the infrastructure



Agreement on cooperation on electric road development Sweden-Germany



Into the future...

- Carry on with test
- Detailed planning for Mid Sweden
- Who needs to make which decision?
- How does who procure what?
- Enable electrification of point-to-point solutions driven by customer demands, in Sweden and Europe
- Stimulate other regions to electrify
- Connect and foster development based on advantages, financing and effects from actual use

Thank You!

Jan Nylander, Magus Ernström and
Helena Fahlstedt



Follow us on Instagram: @elvag_E16
info@regiongavleborg.se
www.regiongavleborg.se/elvag