Statens vegvesen

Electric snow plow truck and more

Torstein Isaksen
Norwegian Public Road Adminstration

Picture: Torstein Isaksen, NPRA

Background for testing an electric snow plow truck

- The Norwegian Public Roads Administration aims to reduce CO2 emissions from our operations by 55 percent by 2030.
- Winter operation by truck is one of the most energy-intensive tasks, and one of the tasks that causes the largest emissions of greenhouse gases.
- The Norwegian Public Roads Administration therefore wants to test electric trucks to see if they are suitable for winter operation

Picture: Kine Nilssen, NPRA

- Test of electric snow plough truck at Ev6 Dovrefjell winter 23/24
- Volvo built for long-haul transport with 1000 kWh battery by Designwerk
- Access to charging infrastructure is an important for the use of electric trucks
- Low temperatures do not lead to significant range loss

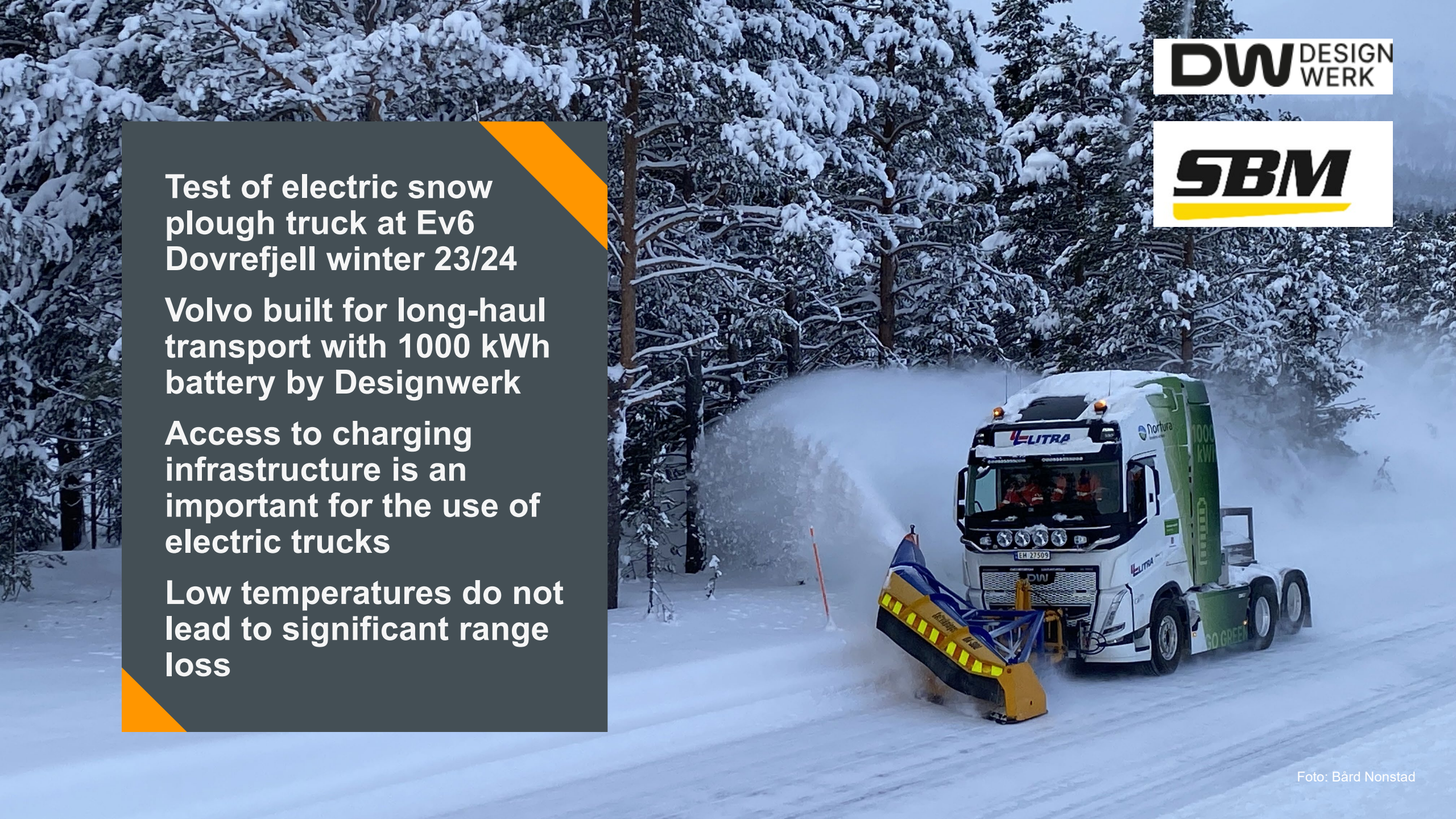


Foto: Bård Nonstad

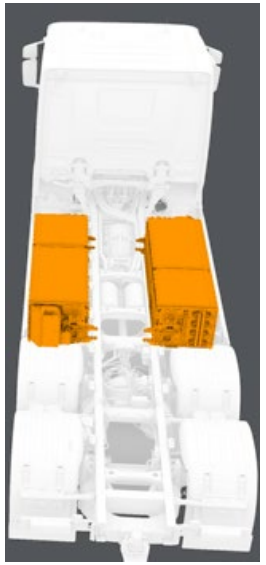
Test of electric snow plough truck on RV7 Hardangervidda

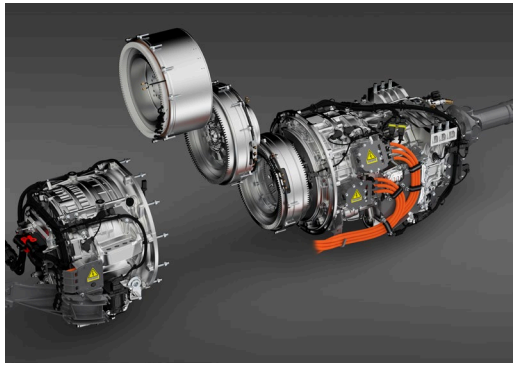
- Collaborative project between the contractor Presis vegdrift, Scania, Elywhere and the Norwegian Public Roads Administration
- The truck, Scania 45R, is in daily operation with general winter work such as plowing, scraping and spreadingof hotsand
- Elywhere installed a charging station at Leiro
- There have been some start-up challenges with charging, but this has been sorted out and the car was charged until 350 kw

Foto: Presis vegdrift

Scania 45R

- 6x2 Fully Air Suspended Rigid Chassis, hydraulic Steered boggie axle
- Wheelbase 4550 mm
- Weight Chassis 12 250 kg. Complete vehicle about 16 000 kg.
- Batteries
  - 4,3 ton with batteries
  - 6 in total
  - 624 kWh installed energy, 468 kWh Usable
  - Up to 375 kW charging speed. (average charging speed in an hour, between 350 and 360 kW)
- Drivetrain:
  - 3 electric machines and a 6 speed gearbox
  - 450 kW constant power, (511 kW Peak)
  - 3500 Nm
  - Heavy duty rear axle with hub reduction
  - GTW 64 ton





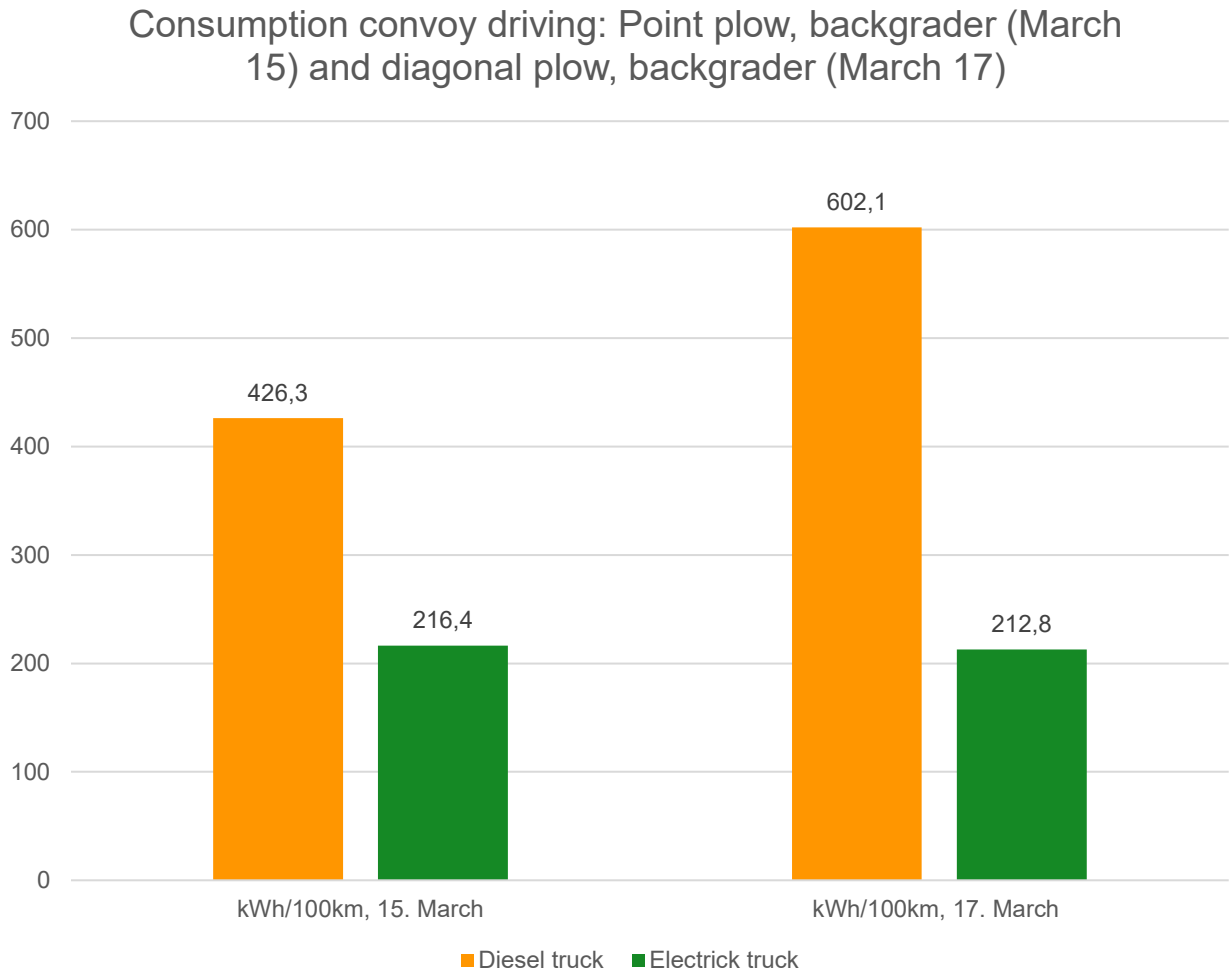
Scania 45R as a fully equipped snow plough truck with hotsand spreader and rear-mounted scraper

Lars Erik Rodian, Scania

Picture: Torstein Isaksen, NPRA

Energy consumption

- 468 kWh usable battery capacity – at 10% remaining 421 kWh usable battery capacity
- Mixed production ploughing, planing, spreading 5403 km (3357 miles) – average energy consumption 2.02 kW/km (mile)
- Range km (100%-10%) in mixed production – 208.4 km (129 miles)
- Range hours (100%-10%) at average production speed 30 km/h (20 mile/hour) – 6.58 hours
- 30 min charge 300 kW – 150 kW/74.3 km (46.5 mile)/2.28 hours increase in range
- For comparison of energy consumption between fossil and electric snow plough trucks, a conversion factor has been used, where 1 litre of diesel corresponds to about 10.1 kWh of energy.



Automated dosing of salt

Automated dosing of salt, based on forecasts and road condition together with GPS control, will lead to better traffic safety, better accessibility and reduction of salt on the roads.

In Norway, several trials are being carried out with forecast-based salting, where the current temperature (and permit) of the road also helps to control the amount of salt that is laid.

Winterroad AHEAD

The Swedish company Klimator has developed the patented technology AHEAD, that automates the use of salt based on weather and road conditions.

The technology is now being tested in a collaboration between Klimator, the contractor Mesta and the Norwegian Public Roads Administration

Foto: Kjell Wold, SVV

The salttruck that «watch the road»

- With NIR laser and RGB camera, AHEAD can determine the condition of the road up to 50 meters in front of the car
- Based on this and data from weather forecasts, it is determined which type of salt and amount is the most correct to use
- This technology can probably reduce the amount of salt on roads by 30-40 percent.

Illustration: Klimator AB

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Remote-controlled wheel loader in avalanche-prone area

- Rv 13 Vikafjellet is Norway's most closed national road
- Avalanche-prone mountain pass that has very unpredictable weather
- Snow ploughing crews have been trapped in avalanches on the stretch – fortunately it went well

Picture: NPRA

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Remote-controlled wheel loader

- Presis Vegdrift, Hive Autonomy and the Norwegian Public Roads Administration have joined forces to find solutions for remote-controlled and AI-powered machines.
- Hive has developed remote control for wheel loaders. This machine can drive remotely into avalanche prone areas.
- The driver sits protected outside an avalanche-prone area and carries out the work.

Illustration: HIVE AS

Illustration: HIVE AS

Picture: Øveraasen AS

Snower IoT RWIS

- Outputs:
  - Snow Height
  - Road Surface Temperature
  - Air Temperature
  - Relative Humidity
  - Amount of Snowfall
  - Wind sensor as an option
  - Batteries will last for 5-10 winters

Picture: Torstein Isaksen, NPRA

9303 Hardanger og Sogn - Rv7 Skulevika (v) #16467

Wednesday, 14 January 2026 - Last Updated: 01/14/26, 03:03 PM

BASIC | ROAD MAINTENANCE

Risk level

Not Evaluated

This Ski zone safety is not evaluated yet!

Temperature

-6.4 °C

Surface Temp. -8.3 °C

Humidity 94.2 %

Wind

N/A

Snow Depth Diff.

↓1 cm

Last 24 hours

Snow Depth

8 cm

Last Updated: 01/14/26, 01:16 PM

Picture: Kine Nilssen, NPRA

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