

A nighttime aerial view of a city with illuminated buildings, streets, and a large stadium in the background.

Tenix : Intelligent Charge Management, Depot Control & Battery Health

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CEO

Webinar
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AGENDA

1. Short Introduction
2. Experiences & solutions for eBuses
in Nordic weather conditions
3. Live Demo
4. Q&A



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Established IT vendor in the Nordic bus market, with a **leading charge solution** for professional EV fleets



Leading IT vendor for buses
and trucks in the Nordics
since 2012

CHARGE
eDEPOT
TELEMATICS / FLEET
ECODRIVE

34 e-Depots for 9 operators
4 of 6 large PTO in Norway

~600 eBuses/Trucks
using Charge

Offices in Norway, Sweden,
Poland and UK

Using Machine Learning to
optimize SOC% for Charging

How to ensure that 600 eBuses are
charged – every day in all
conditions?

EV operations are more complex to handle

- 1 Missed or delayed departures due to incomplete charging
- 2 Weather affects battery performance and charging time
- 3 Charging too late or too early wastes costs or capacity
- 4 Batteries capacity degrades over time – affects operations
- 5 Depot chaos, multiple charging solutions, multiple vehicle types

Proactive vs.
reactive
Operations
Control?

Tenix smart charging solution reduces energy cost and ensure operational efficiency and stability



Tenix Charge – a complete & proven depot fleet charging solution for professional EVs since 2018

PROVEN SOLUTION

State-of-the-art telematics solutions, with bases in Norway, Sweden, UK and the Netherlands. 6,000+ vehicles use our services each day, and more than 350 million events recorded every month.

HIGH COST SAVINGS

USD 300 – 800 per EV/month in saved energy cost, due to operational charging efficiency, improved driver performance and system stability.

MULTI VEHICLE COMPATIBILITY

Supports vans, cars, HGVs, hybrids and alternative fuel vehicles across various manufactures.

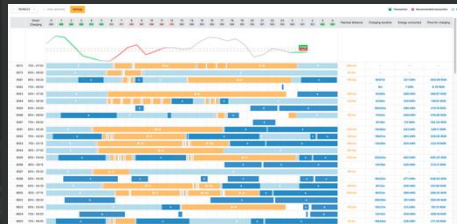
SCALABLE PLATFORM

The software platform is built on MS Azure using Machine Learning tools to provide a state-of-the art charging optimization. A partner supporting growth and a pioneer in innovation.

BRAND AGNOSTIC CHARGING

System has integrations and is proven with 30+ different charger brands, for example: Siemens, ABB, Kempower, MedCom, EcoEnergetica, Alpintronic and more.

Cloud-based SaaS solution integrates and supports your daily operations



1

Smart Charging optimizing price, schedule and capacity

Optimized charging based on planned schedule, price variations and capacity constraints – reducing energy costs with 16-27% and ensure load balancing .



2

Driver performance monitoring and reporting

Driver Performance report for every driver and miles / km driven in the EV. Feedback on harsh driving and uneconomical behaviour. Optimal training of drivers reduces cost 5-15%.



3

Intelligent Depot Management for EVs

Smart parking according to logistic plan, charging plan and capacity per charger. Ensure that the charging of EV is adapted to the load / unload of vehicles and transport plan



4

Fleet Map showing position of all vehicles

The real-time map shows an overview of all vehicles, and differentiation if it is an electric or non-electric vehicle. With an up-to-date overview of battery status.



5

Battery Health Monitoring and **Operational Reports**

The system monitors battery health and creates various operational reports such as energy consumption, idling and CO2 emission reductions

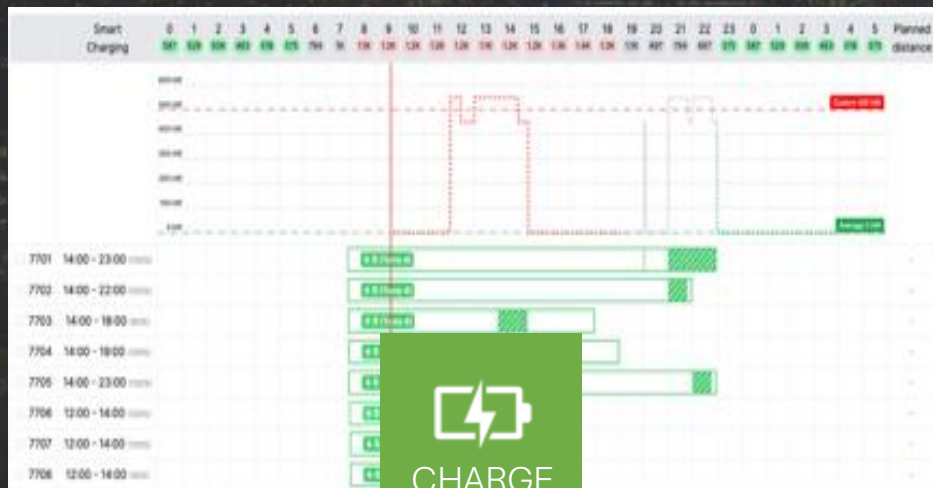
Tenix Charge – Leading Fleet Charging Solution

	Smart Charging	0	1	2	3	4	5	6
		629	596	587	576	590	628	647
☐ 8587	75% > 04:30							
☐ 8591	95% > 07:00							
☐ 8593	75% > 08:15							
☐ 8595	80% > 05:30							

Route & time
optimized charging



Cost & capacity
optimized charging



Range prediction & optimal charging
Using ML/AI
Autom. Load balancing
Full SaaS solution
Unified platform

In Daily use for ca. 550+ eVehicles in the Nordics – in all weather conditions



Proven with 30+
different chargers



Works with all vehicle
brands

Smart Charging: AI based Charging Management integrated with logistic / warehouse planning system, costs and depot capacity



Cost optimized charging with Nord Pol integration

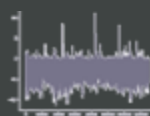
Total depot power consumption and cost

Smart charging: optimized % for route and start time, cost and capacity

Distance, charging data and cost per vehicle

Integrated with logistic and or warehouse planning system

Using Machine Learning with 28 data parameters such as temp, capacity, tire pressure, route topology, speed and weight to predict optimal SOC% for a specific route/day.



Driver Performance – saving 10-15% cost and reduce CO2 emissions



Score for **both** Diesel and Electric vehicles

Historical data and detailed trip breakdown

Save cost & reduce CO2
EcoDrive / Driver Performance can reduce costs 10-15% - and reduce CO2 emissions for Diesel Vehicles.

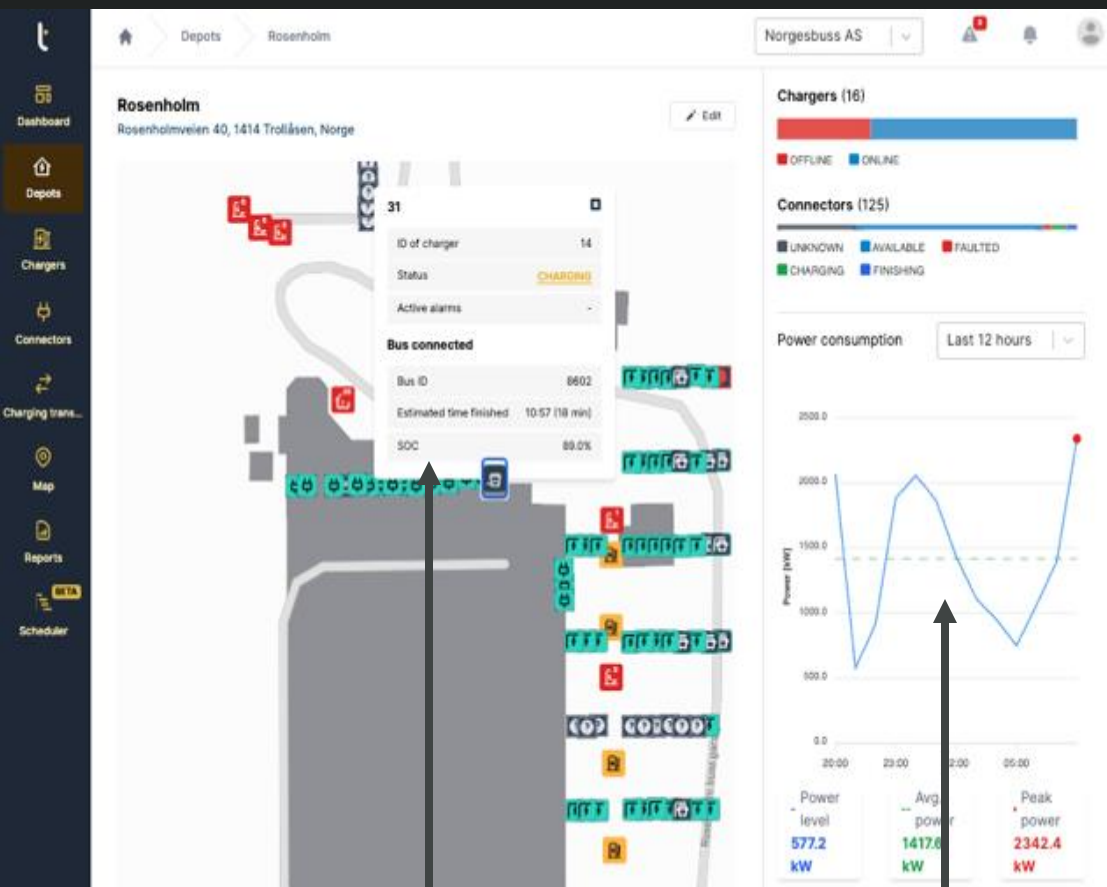
Personalized Reports via Driver app and or email.

GDPR Compliant system.

Driver Score **independent of vehicle brand & type** compared to team and division

Idle time overview, **fuel** and **energy** consumption

Intelligent Depot Management - Depot Charge Control & Smart Yard Assistance



Depot map with live status incl. alarms



Live depot power consumption overview

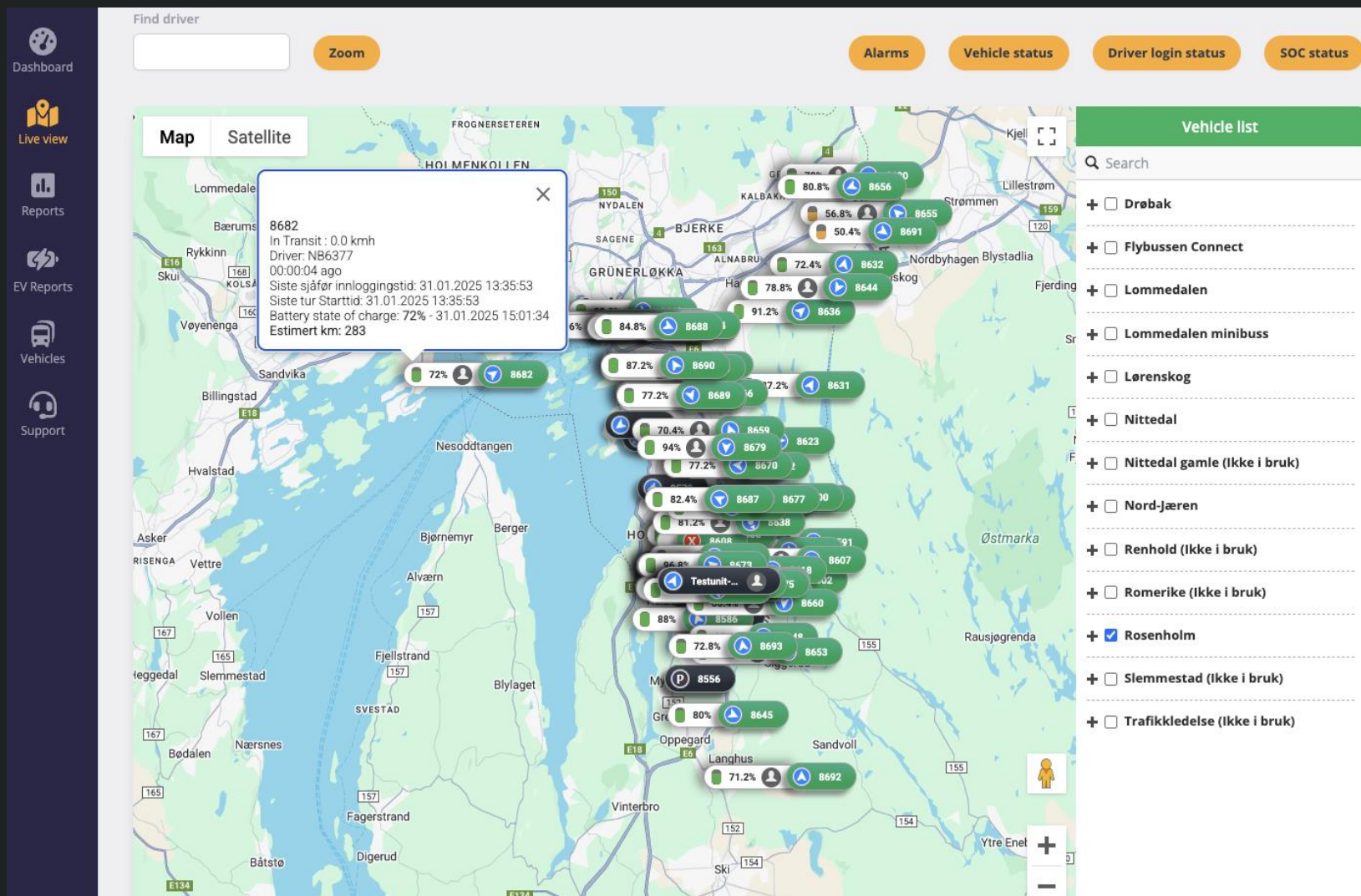


Charger overview, occupancy and Charging sequence



Real time depot bus location and charging status

Fleet Map: Optimal operations – integrated diesel and electric fleet management for a complete overview

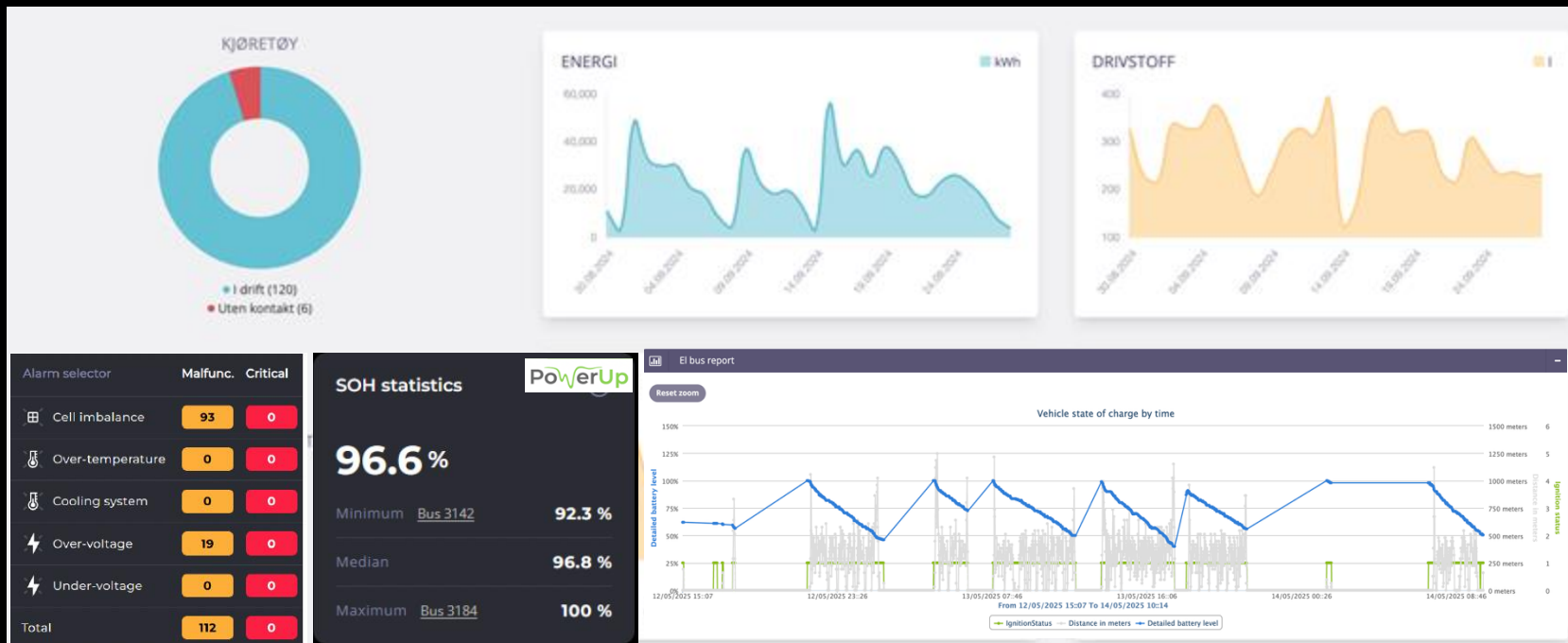


FLEET

Real-time and historical data

- Positioning / drive path
- Driver behaviour / Eco-driving
- Vehicle data, e.g.
 - Fuel consumption
 - State of charge
 - Odometer
 - Temperature
 - Driver ID
- Events and alarms, e.g.
 - Triggered alco-lock
 - Vehicle indicators
- Tachograph download

Battery Health – monitor and track your battery health based on different data and a dashboard with real-time operational reports



Battery Health Indicator

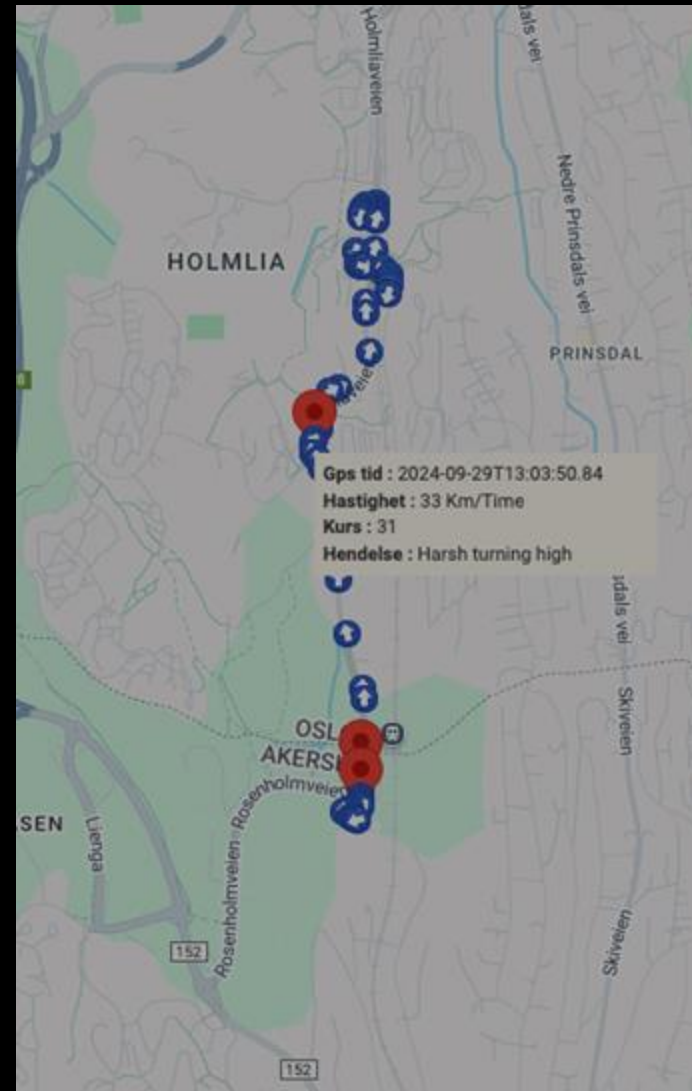
Ensuring that battery degradation and SoH is closely monitored for operational stability and safety

Dashboard

Dashboard for all departments or per depot for total overview of Energy or Diesel consumption++

Detailed Reports

Detailed Reports per driver or bus, department or entire company.



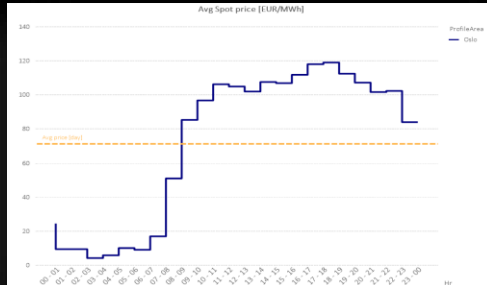
Proof in Practice

>600 EVs in daily operations since 2020 – in Nordic Conditions



INVESTMENT ENABLER

Reducing depot
investments by 20-
25%



ECONOMIC OPERATIONS

10-15% reduced cost
of energy



CHARGER AGNOSTIC

Proven with 30+
different chargers



BRAND INDEPENDENT

Works with all vehicle
brands



EFFICIENT OPERATIONS

100 buses can do the
job for 102 buses

Customer Statements



An increasing proportion of our buses are electric. Electric buses require new tools and routines, which is why we have chosen to purchase a charging management system from Tenix. We look forward to starting and ensuring the best possible charging of our electric buses so that we can continue to transport passengers in an environmentally friendly manner,” says **Vidar Hauan, Director of Operations and Development at Vy Buss**.



“Saga Tenix is a forward-thinking supplier with a focus on innovative solutions and optimal operations. We have had very positive experiences with Saga Tenix over a ten-year-long partnership and look forward to continuing to work with them to create excellent and sustainable travel experiences,” says **Ronny Paulsen, Director of Business Development at Tide**.



“We chose Tenix mainly because we wanted a supplier based in Norway. Proximity to the provider is important for ensuring quality. At the same time, we saw that the offerings and pricing, along with the smart solutions, fit our operations well. It was also important for us to choose a company familiar with Ruter’s requirements for digital services,” says **Kristin Langbakke from Nedre Romerike Minibuss**.



We have had positive experiences with Tenix’s systems and therefore wish to continue using them for our electric minibuses in Asker and Bærum. Oslo Taxibuss aims to offer inclusive and environmentally friendly transportation for people with functional variations, and reliable solutions and systems are crucial for this,” says **Group CEO Tonje Grave of Oslo Taxi AS, the parent company of Oslo Taxibuss**.



“Contracting Tenix for this assignment with our client HTM marks an exciting chapter for us. Our mission is to leverage innovative and cutting-edge technology to make transportation safer, more efficient, and more sustainable. We invited Tenix and GeoSignage to help us do exactly that for HTM. We are confident that together we will enhance HTM’s passenger services.” - **Jan Linssen, CEO ARS T&TT**



We have collaborated with Tenix for several years and look forward to using their systems on even more buses. Tenix finds good solutions in cooperation with us, and the technology the company provides has helped ensure efficient and reliable operation of our electric buses, says **Grete Mollestad Tveit, CDO of the Connect Bus Group**.

