Accelerating Sustainable Waterborne Mobility

Through Public Leadership

Region Stockholm


WAXHOLMSBOLAGET


SL

A large and complex Service System

- An area of 200 kilometers north-south and 50-60 kilometers east-west.
- Variation in terms of geography, population density and nautical conditions.
- Archipelago traffic is based upon Reply points and Core islands.

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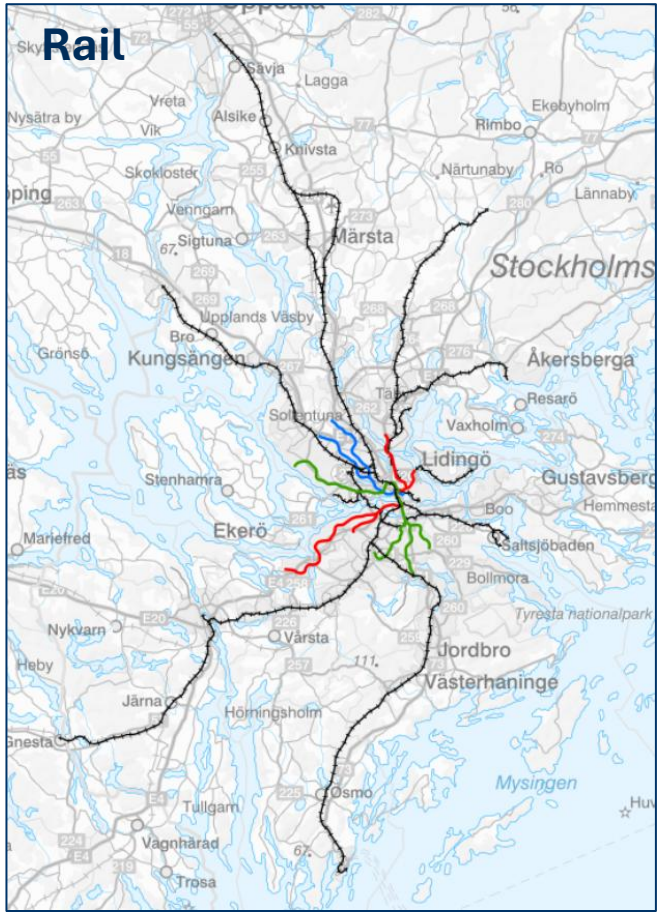
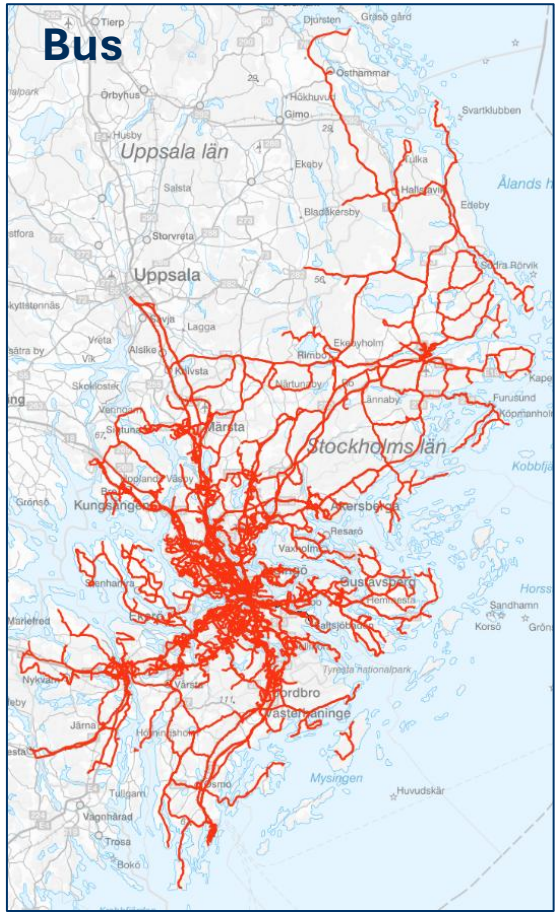
Public transportation in the Stockholm Region





~1%

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Decided Climate objectives

”The climate impact of Region Stockholm is 50% lower 2030 compared to 2019”

”Region Stockholm reaches net zero emission by 2035”

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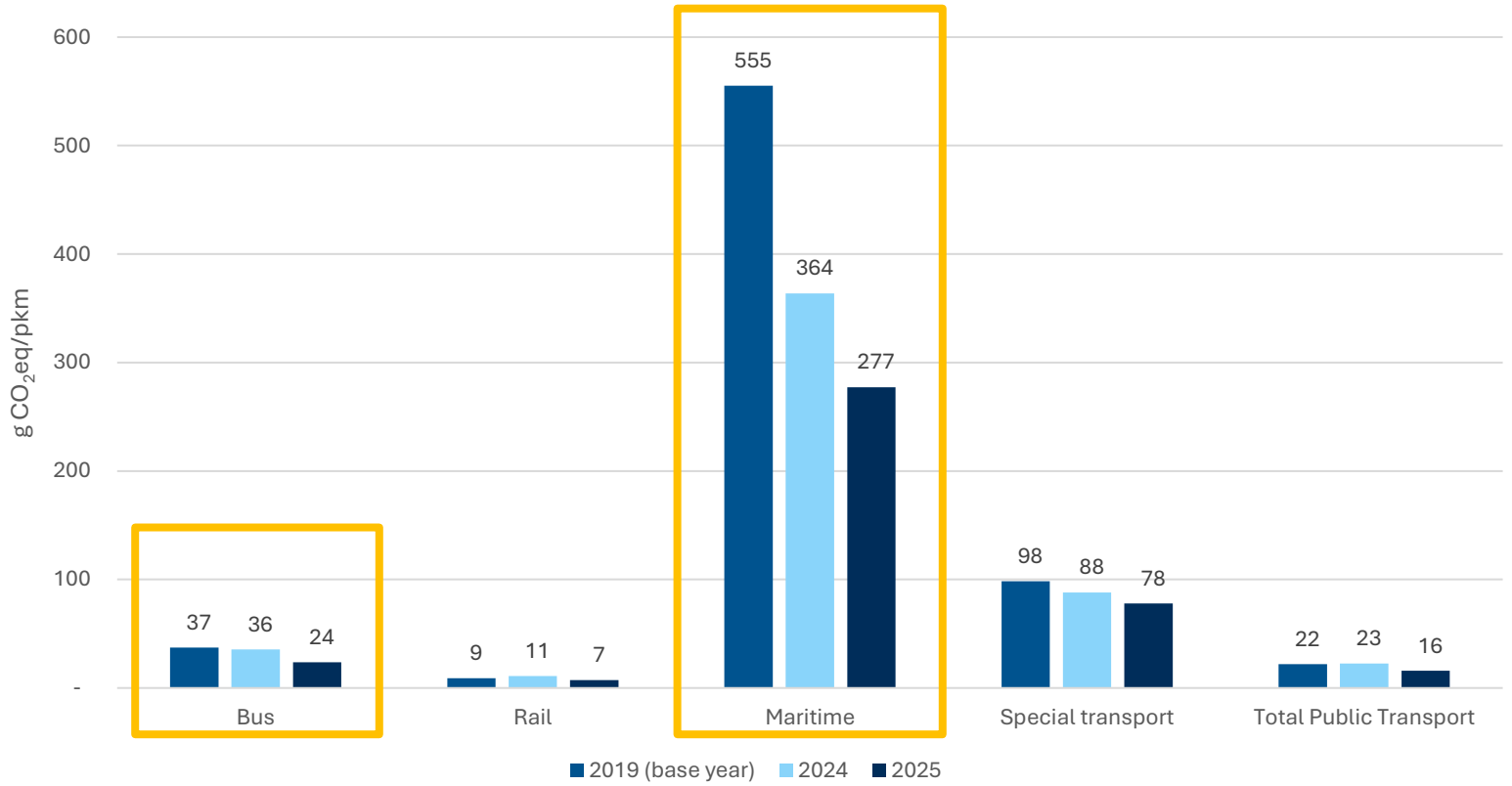
CO_2eq Emissions per passenger kilometer



Target 2025: 20 g CO_2 / pkm
Target 2026: 18 g CO_2 / pkm

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2014
1st electric ferry

Dec 2018
1st diesel-hybrid ice-going ferry

Aug 2012
The oldest vessel in the fleet was upgraded with a diesel-electric propulsion system.

2016
Introduction of HVO (Hydrotreated Vegetable Oil) as part of the fuel mix.

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Aug 2020
2nd diesel-hybrid vessel upgraded

29 October 2024
Worlds first electric hydrofoil (E/S Nova) in public transport start trialruns

2020

2020
HVO use reaches 50 %

Aug 2022
Battery electric buses in trunk routes in city centre

2025

2026
HVO use increase

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A belowed part of Stockholm and the Archipelago

Retrofit? → **Replace?**

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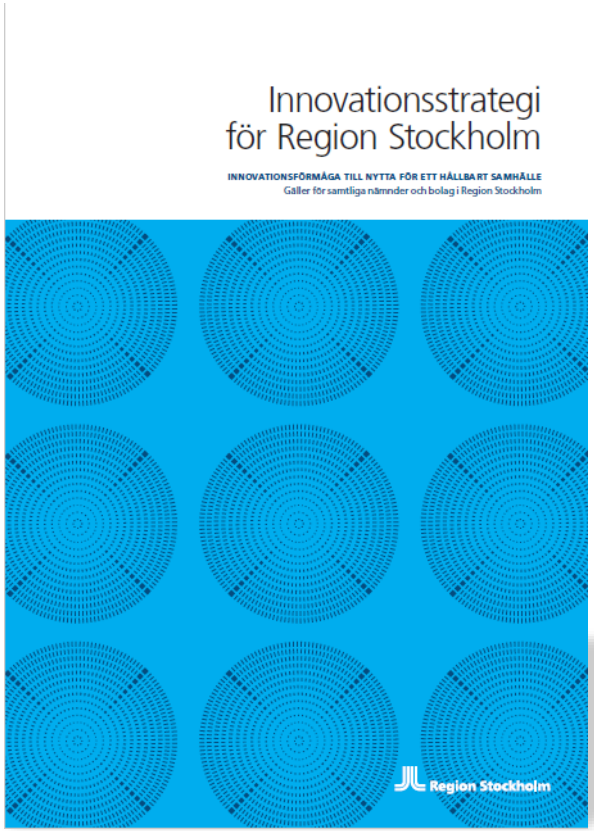
The Innovation Strategy – for Leadership, not Leading

- **Introduced in 2019**
- **Cater for test arenas and foster real, scalable innovation**
- **Encourage external collaborations**



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K1

Testbeds to Accelerate Technology Adoption and Behavioral Change

Autonomous buses and DRT

Shared mobility

Energy efficient vessels

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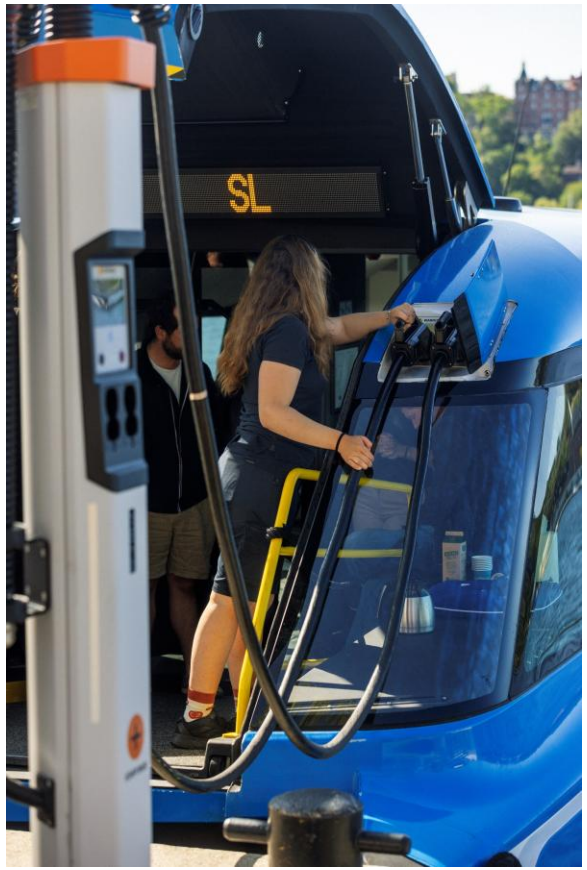
Testbed – Electric Hydrofoil in Public Transport



TRAFIKVERKET
Innovation financing

CANDELA
Project coordinator

Testbed partner

Operator

Region Stockholm

Potential effects and benefits

- Reduced energy consumption
- Reduced emissions
- Reduced cost per passenger
- Reduced wakes
- Reduced noise
- Decreased travel time
- Increased attractiveness – modal shift
- Socioeconomic benefits and transport equality

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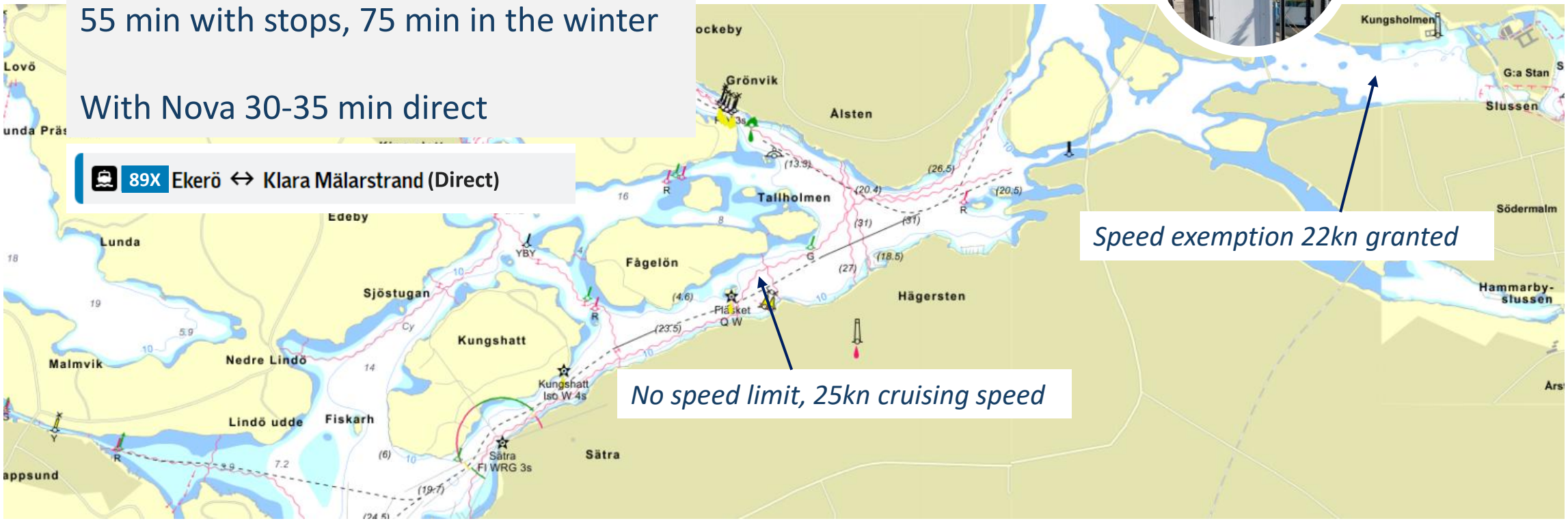
6 months of operation in public transport

Travel time compared to regular vessels
45 min direct (1 per day)
55 min with stops, 75 min in the winter

With Nova 30-35 min direct

DC charger 250kW
Norr Mälarstrand
Hotel/night harbour

Pier
Klara Mälarstrand



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Results – emission and energy

Comparison with standard traffic/vessels

- **99.9% reduction in NOx emissions.**
- **94% reduction in CO_2 emissions compared to Mk1 diesel.**
- **68% reduction in emissions compared to a 100% HVO scenario.**
- **66% lower energy consumption compared to the equivalent transport activity of current vessels.**

Traveling results

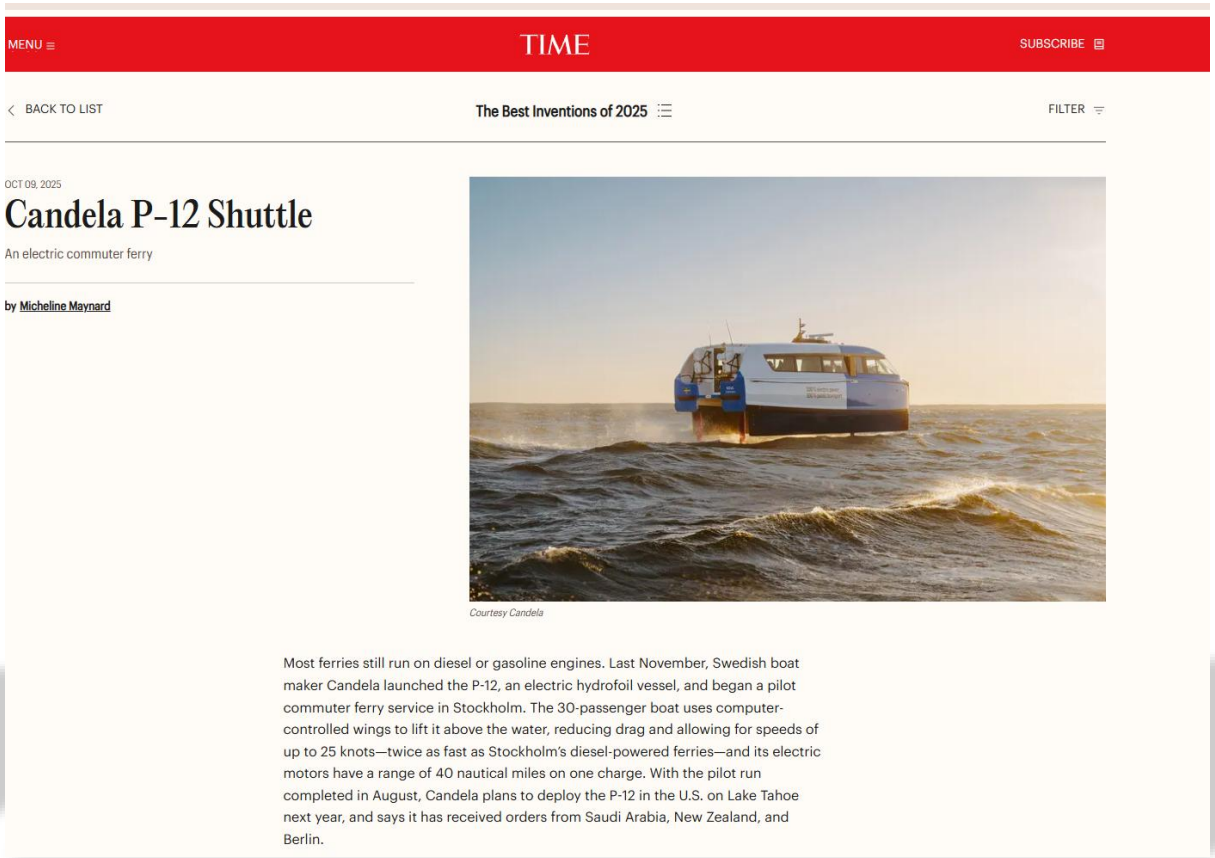
- **12,553 passengers traveled over 650 trips.**
- **Fastest travel time was 30 mins and 22s.**
- **Speed exemption for 22kn(12) was granted during low season and in daylight.**

Results – wakes and noise

- **At close range, the Candela P12 generates 0.21 m waves, decaying to 0.13 m at 80 m.***
- **During take-off and landing, wave heights increase to 0.33 m.***
- **When stationary, Nova produces no mechanical powertrain noise, significantly reducing noise pollution in port environments.**
- **At 25 knots, the Nova hydrofoil generates noise levels equivalent to a modern passenger car traveling at 45 km/h**

* Aug 24 - Wake Wave Measurements On Candela P12, Prof. Jakob Kuttenkeuler, Royal Institute of Technology, KTH

Awards and Recognitions



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OCT 09, 2025

Candela P-12 Shuttle

An electric commuter ferry

by Micheline Maynard

Courtesy Candela

Most ferries still run on diesel or gasoline engines. Last November, Swedish boat maker Candela launched the P-12, an electric hydrofoil vessel, and began a pilot commuter ferry service in Stockholm. The 30-passenger boat uses computer-controlled wings to lift it above the water, reducing drag and allowing for speeds of up to 25 knots—twice as fast as Stockholm's diesel-powered ferries—and its electric motors have a range of 40 nautical miles on one charge. With the pilot run completed in August, Candela plans to deploy the P-12 in the U.S. on Lake Tahoe next year, and says it has received orders from Saudi Arabia, New Zealand, and Berlin.

Next – Energy in Challenging Environments

Energimyndigheten

Innovation financing for:
Sustainable and Resilient Transport System

Project timeline 2025-2028

Dare Devil Leadership Accelerates in Testbeds

Thank you!