

# Rail transport of carbon dioxide



Kirsi Klemola 16.4.2024

# Who's speaking?

Kirsi Klemola is in charge of the work shift and locomotive planning of the rail logistics production personnel.

Previously, Klemola worked in sales at VR Transpoint, where she was responsible for managing growth projects and the development of new logistics solutions.

Klemola has extensive experience in business development in both the logistics sector and as a consultant in other sectors. Her area of responsibility has also included key customer relationship management, logistics sustainability and the management of large-scale projects.

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## Kirsi Klemola

Head of Resource Planning

[kirsi.klemola@vrtranspoint.fi](mailto:kirsi.klemola@vrtranspoint.fi) | +358 400 738 980 |





# Our business areas

We transport passengers in long-distance and city traffic.  
We handle freight traffic for industrial companies.



## VR City Traffic

Commuter train, tram and bus services in Finland and Sweden.



## VR Long-distance Traffic

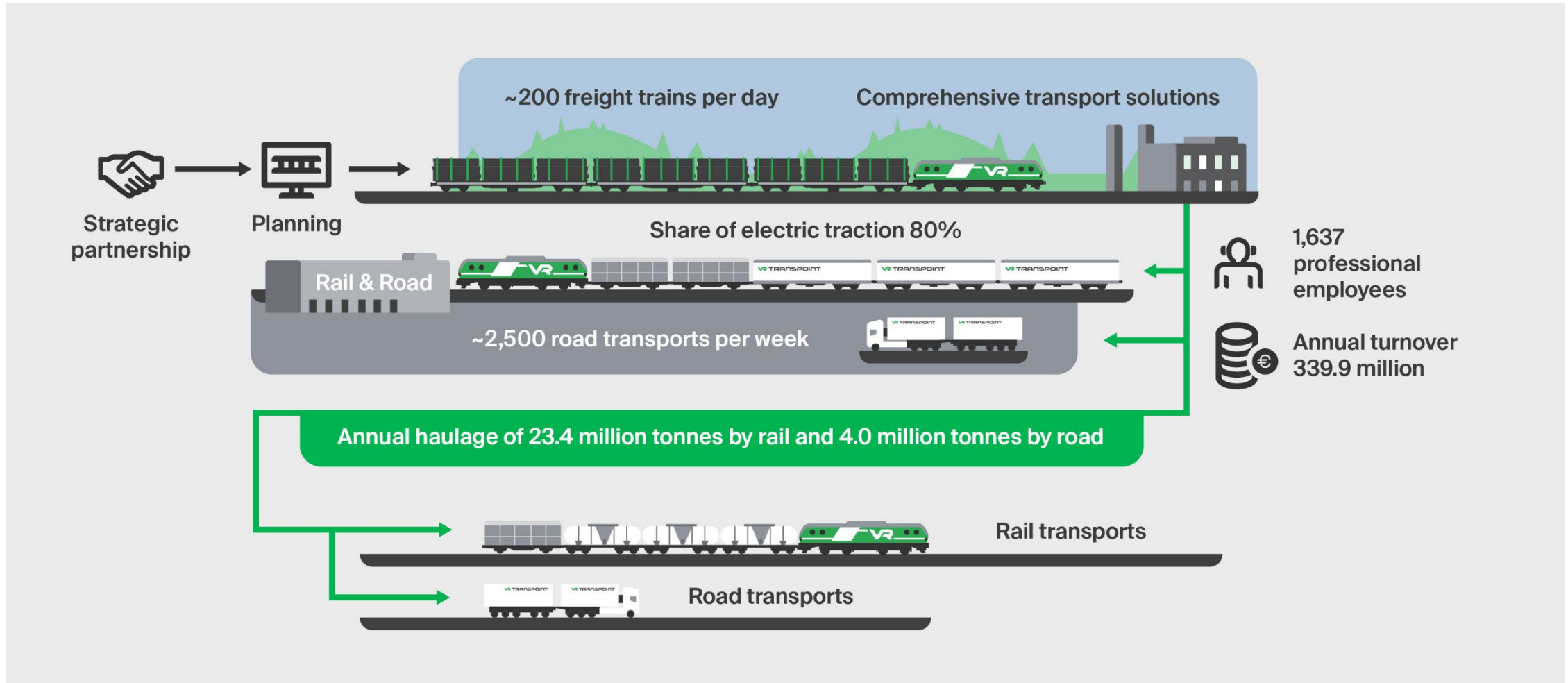
Long-distance train travel in Finland.



## VR Transpoint

Heavy industry logistics transport by railway and road in Finland.

# We are a strong pillar of support for industry



# Railway transportation structure in Finland

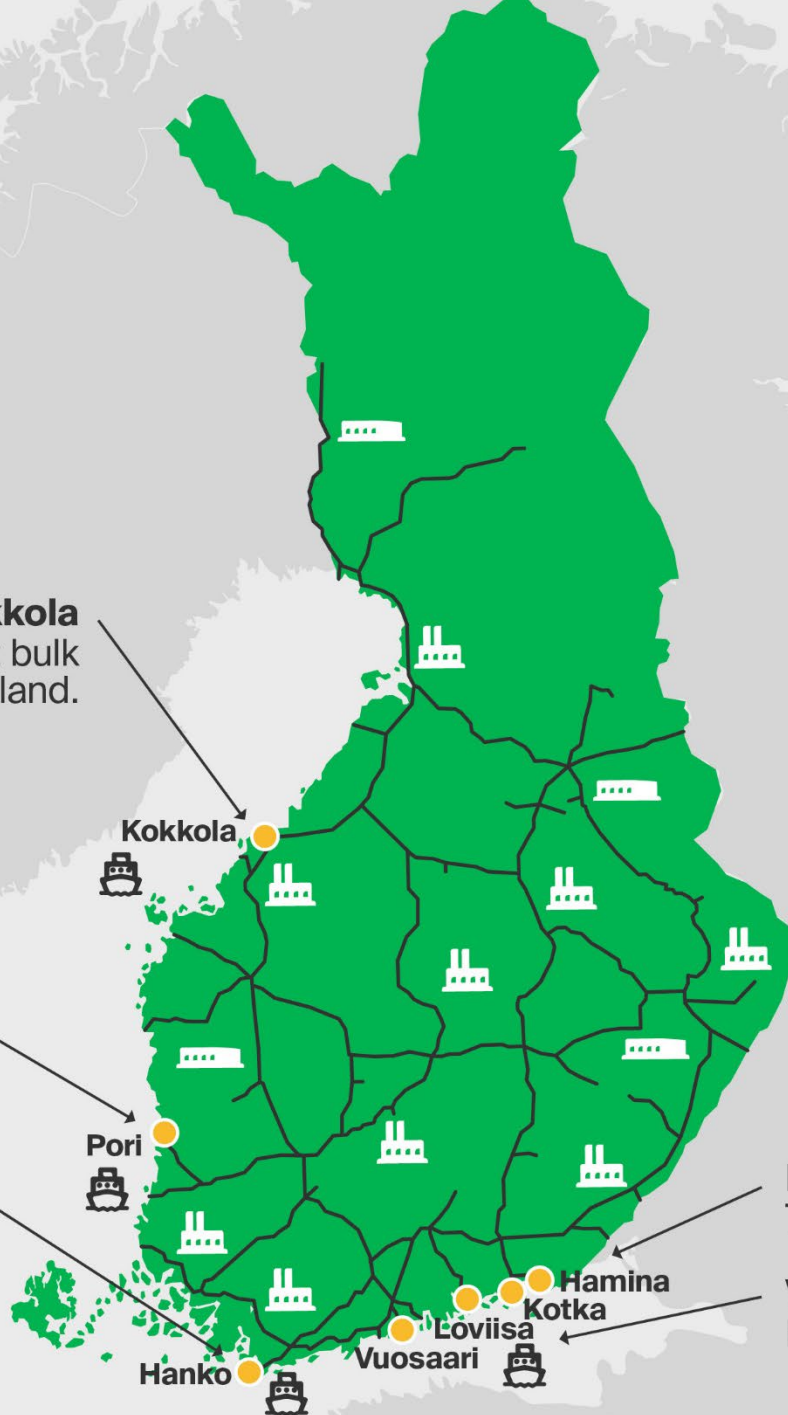
**Kokkola**  
The largest bulk  
cargo port in Finland.

**Pori Tahkoluoto**  
Good bulk  
cargo facilities.

**Koverhar Hanko**  
Opened for  
cargo transports.

**HaminaKotka**  
The largest freight traffic port in Finland.

**Vuosaari and Loviisa**  
Part of Port of Helsinki.





# Comprehensive product knowledge in rail transports

## Transported product groups



Paper, cardboard,  
pulp and timber



Raw wood



Steel coils and  
other steel products



Oils and  
chemicals



Bulk products  
e.g. ore concentrates



Containers



Special and  
Project transports

# Environmental responsibility in Finland

Train travel is

100%

carbon neutral

Our carbon handprint

500,000

tCO<sub>2</sub>e

We support carbon neutrality

2035

VR aims for zero-carbon emissions

0

in traffic by 2035

95% of our passenger trains run emission-free with electricity. We offset the emissions of passenger rail traffic on non-electrified railway sections.

Thanks to VR, the greenhouse gas emissions of traffic are about 0.5 million tCO<sub>2</sub>e lower. This figure is equivalent to the emissions of two cities the size of Vaasa.

VR's sustainability is guided by the UN's Sustainable Development Goals and the objectives of ownership steering by the state. We support Finland's goal to be carbon-neutral by 2035 and carbon-negative soon after.

We will eliminate all the eliminable emissions of our traffic by 2035. The rest will be offset by carbon sequestration. Shared emission strategies with our industrial customers play a key role.



# In addition, we invest in more energy-efficient rolling stock



## Electric locomotives: Sr3

- Manufacturer and model: Siemens Vectron
- 80 locomotives ordered, option for 97 more
- First locomotives taken into use in 2017, the entire batch in 2026
- Radio control for shunting work
- Auxiliary diesel engines for shunting work or short journeys on non-electrified track



## Diesel locomotives: Dr19

- Manufacturer: Stadler Rail Valencia
- 60 locomotives ordered in 2019, option for 100 more
- The first locomotives entered test use in 2022 and commercial traffic in early 2023

Higher tonnage  
of trains

More  
energy-efficient

Reliable  
operation



# Operating models make railway traffic more efficient



Long-term commitment to volumes and capacity



Increasing the wagon group size and capacity utilisation rate and making shunting work more efficient

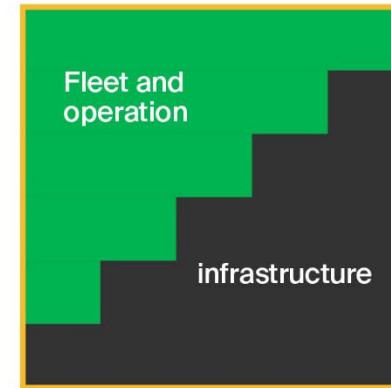


Service descriptions: define common operating models and commit to them

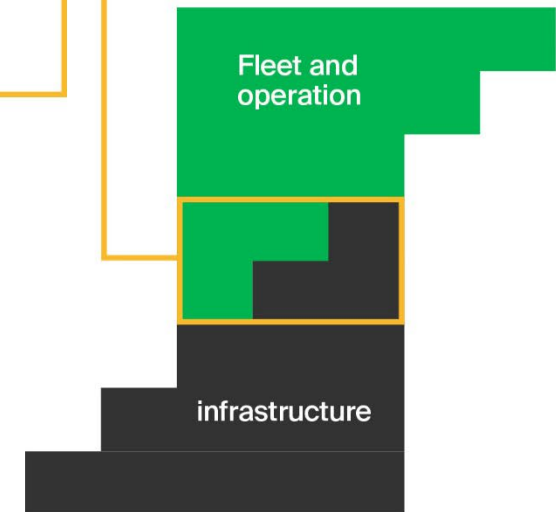


For example, by halving the rotation time, it is possible to get double the amount of goods transported with the same wagonage.

## The efficiency of the operating models

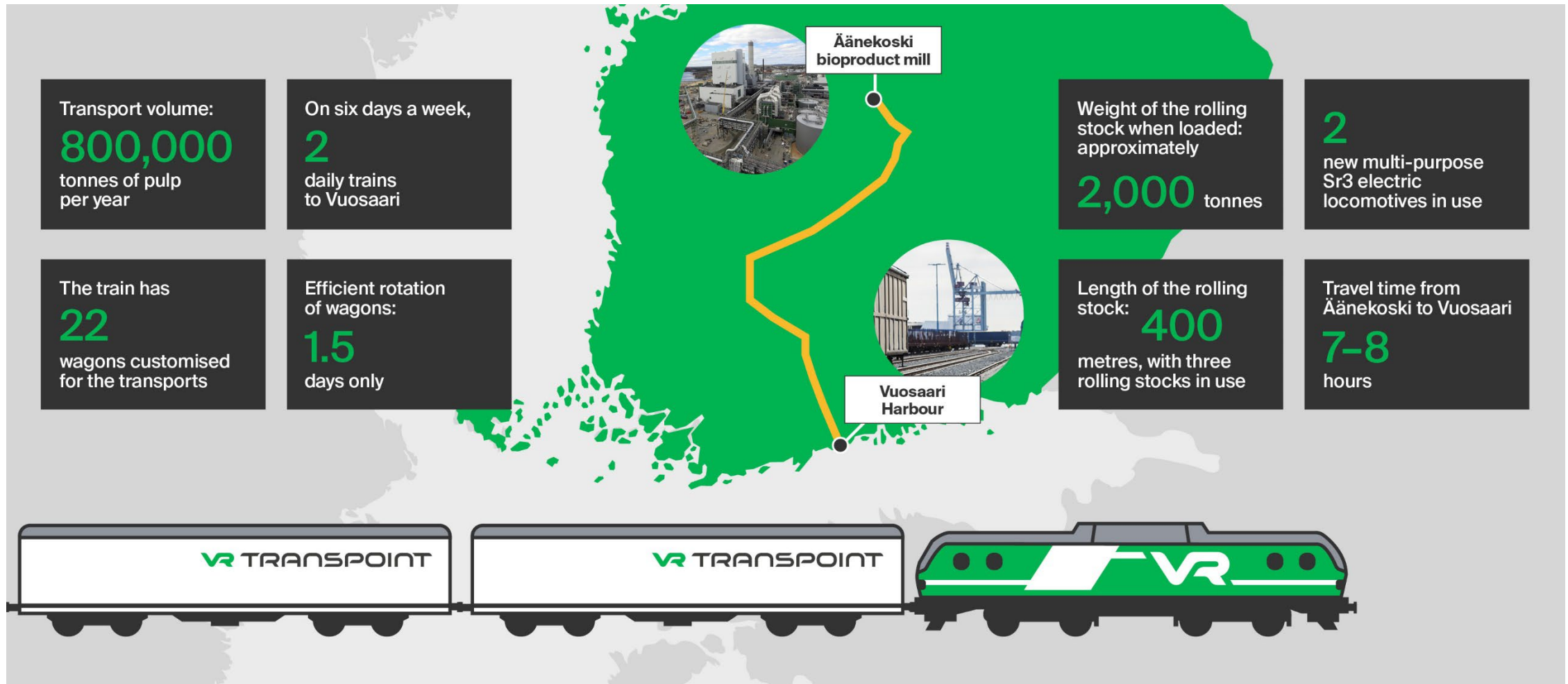


Efficient



Inefficient

# Case Äänekoski – example of efficient concept





# Involve us early on

- Loading/unloading infrastructure to be planned together with factory
- Wagon investments take time

Together towards **a better world**