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Swedish Transport Administrations views on the development of the transport and logistics system in Northern Sweden

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The industrial boom in Northern Sweden

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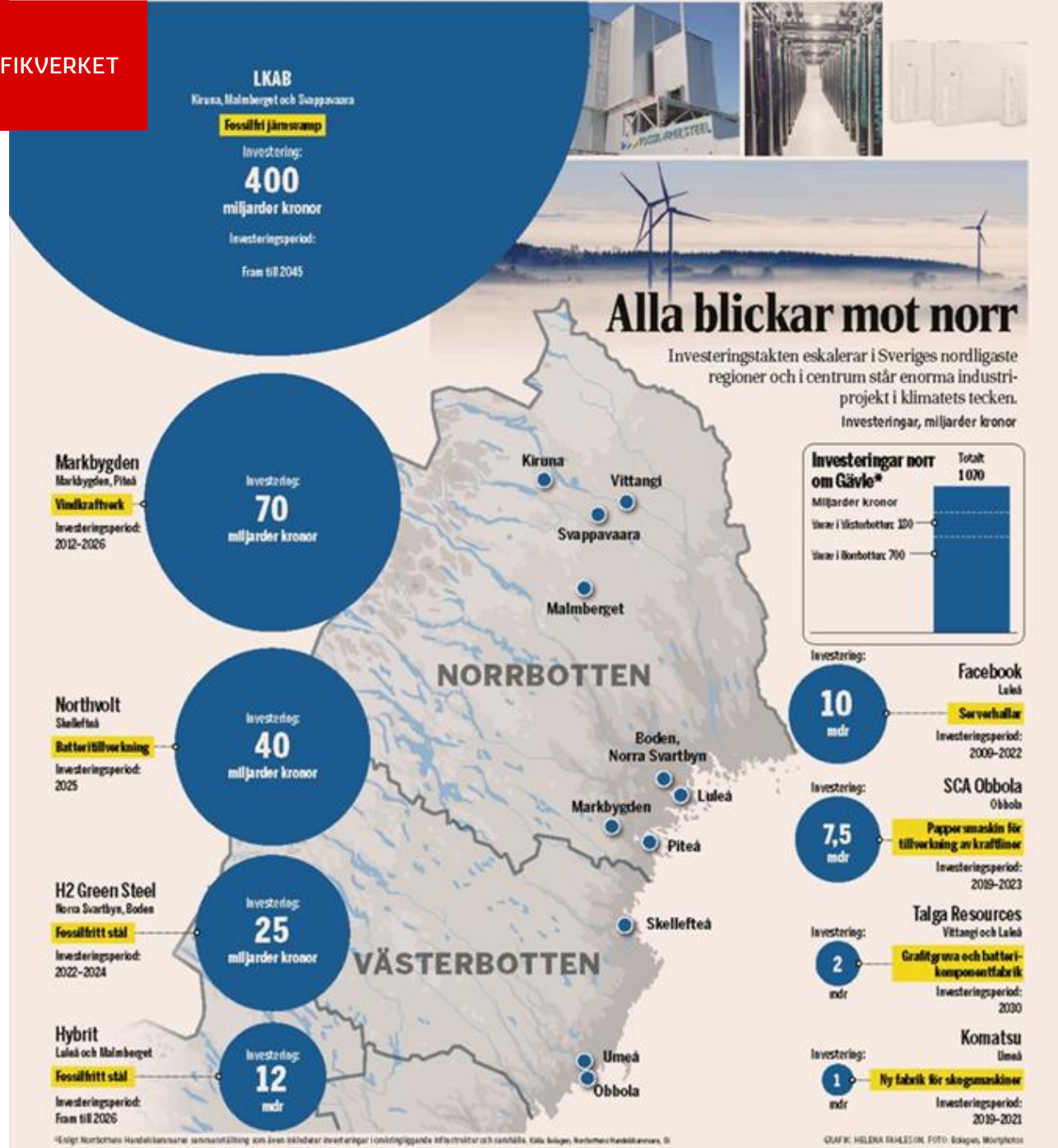
A boom of investments, renewable-powered industries, more than 100 billion Euros

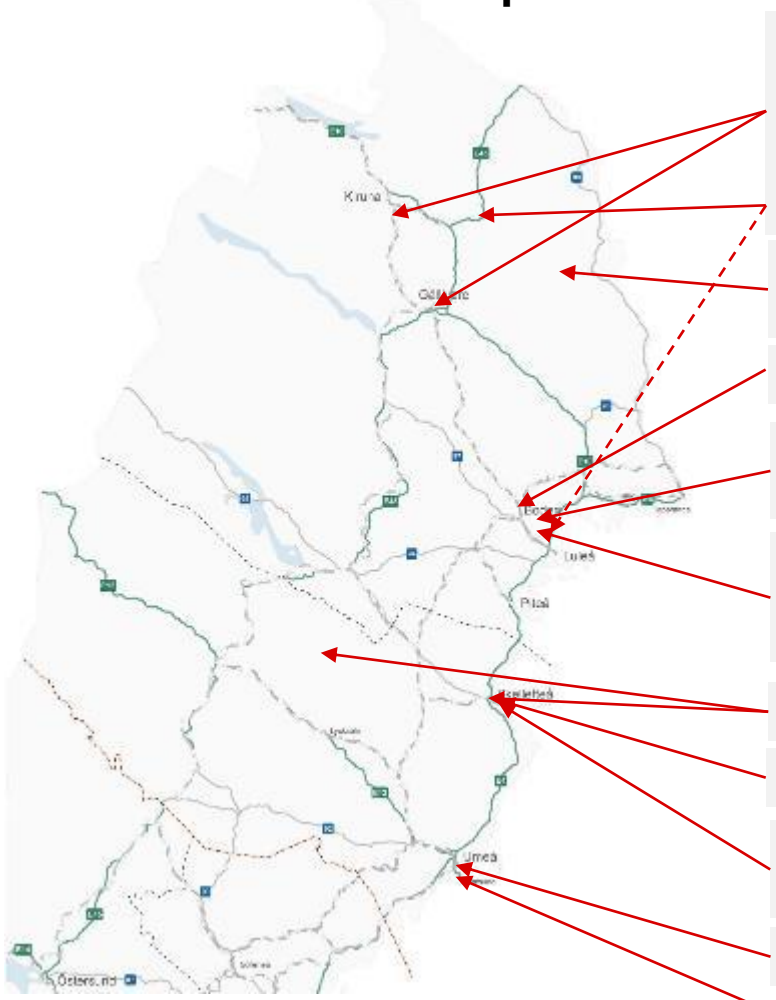
- North will become a **hub for fossil-free industrial investments** in
  -steel production
  -green electricity distribution
  -battery manufacturing
- We analyse the **impact** that ongoing and planned big industrial investments in Norrbottens and Västerbottens counties will have on the transport infrastructure
- We analyse the **need of measures** to improve the transport infrastructure, foremost in Norrbottens and Västerbottens counties, that is expected due to transformation in the cities



Källa: artikel baserad på uppgifter från Handelskammaren i Norrbotten, Handelskammaren i Västerbotten, hearing 9 juni.

Industry investments in Northern Region – 1000 billion sek

A boom of renewable-powered industries, some examples



***LKAB**: Investerar 400 miljarder i fossilfri järnsvamp och gruvbrytning*
Järnsvamp: Demoanläggning Malmberget i produktion 2026 och ytterligare tre anläggningar till tidigt 2030-tal. Apatit: Kiruna Apatitverk. Pyrit Malmberget och framställning av svavelsyra, råvara till konstgödsel samt sällsynta jordartsmetaller i Luleå. Produktionsstart 2027.

***Talga Resources**: Investerar 2 miljarder i grafitgruva i Vittangi och förädlingsanläggning i Luleå*

***Kaunis Iron**: Investerar för fossilfri gruvdrift och nya gruvor.*
Fossilfri gruvdrift 2025.Miljötillstånd klart, produktion från 2 till 4 miljoner ton järnmalmskoncentrat/år.

***H2 Green Steel**: Investerar 50 miljarder i tillverkning av vätgas och fossilfritt stål. Produktionsstart 2025.*

***Grupo Fertiberia**: Investerar >10 miljarder i tillverkning av grön ammoniak och konstgödsel. Aviserat Norrbotten, Luleå-Boden regionen. Produktionsstart 2026.*

***SSAB**: Investerar 12 miljarder tillsammans med LKAB och Vattenfall i Hybrit – fossilfri järnsvamp.*
Investerar 45 miljarder i minimills i Luleå och i Brahestad och fossilfri stålproduktion till ca 2030.
Minimills=kompletta sammanhållna produktionsprocesser med elektrostålverk, valsverk och kallvalsverk

***Boliden**: Investerar 1,1 miljarder i Rönnskärsverken och 1,2 miljarder i Kristineberg*

***Northvolt**: Investerar 40 miljarder i batterifabrik samt batteriåtervinningsfabrik. Produktionsstart 2021.*

***Cinis Fertilizer**: Investerar i tillverkning av konstgödsel i Skellefteå av biprodukter från Northvolt. Produktionsstart 2025.*

***SCA Obbola**: Investerar 7,5 miljarder*

***Liquid wind**: Investerar eventuellt 2 miljarder i ny fabrik för produktion av elektrometanol av förnybar vätgas och biogen koldioxid. Investeringsbeslut beräknat till 2024 och med en produktionsstart 2026.*

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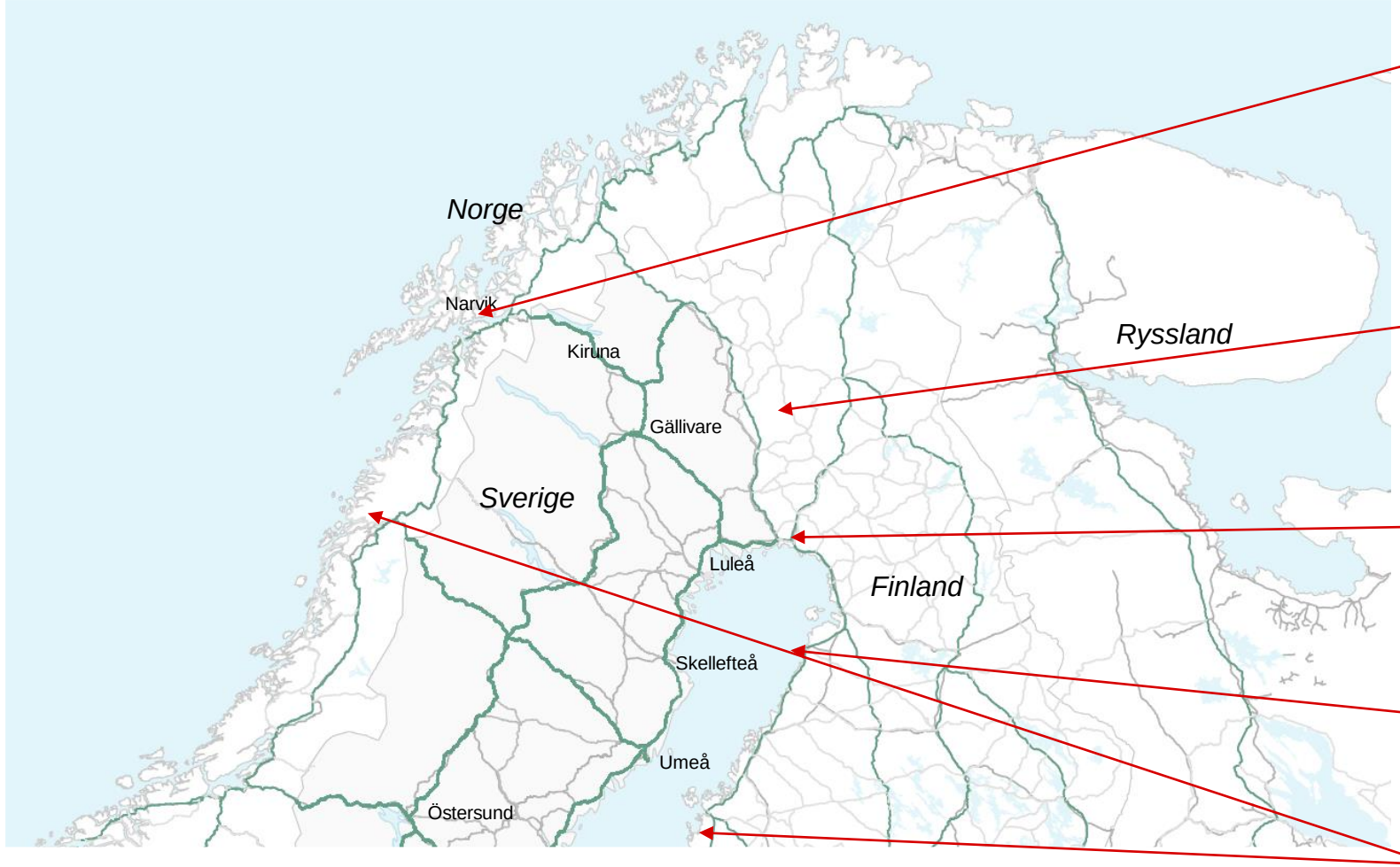
Industry investments in Northern Region – Investments in neighbouring countries



Narvik Godsterminal och Narvik station *investerar för ökad kombitrafik på järnväg*
AKER *satsar på gröna industrier (grön vätgas, batterier, grönt stål mm.). Första steg grön Ammoniak*
Miljardinvesteringar.

Gruvor i Finland
Hannukainen mine, Sokli mine, Sakatti mine, Suhanko mine

Omställning av massa-och pappersindustrin i Finland
Vataset investerar 10 miljarder
Metsä investerar 16 miljarder
Store Enso investerar 3,5 miljarder

SSAB Brahestad
Omställning till fossilfri stålframställning och minimills

Batterifabriker i Norge och i Finland
Mo i Rana
Vasa

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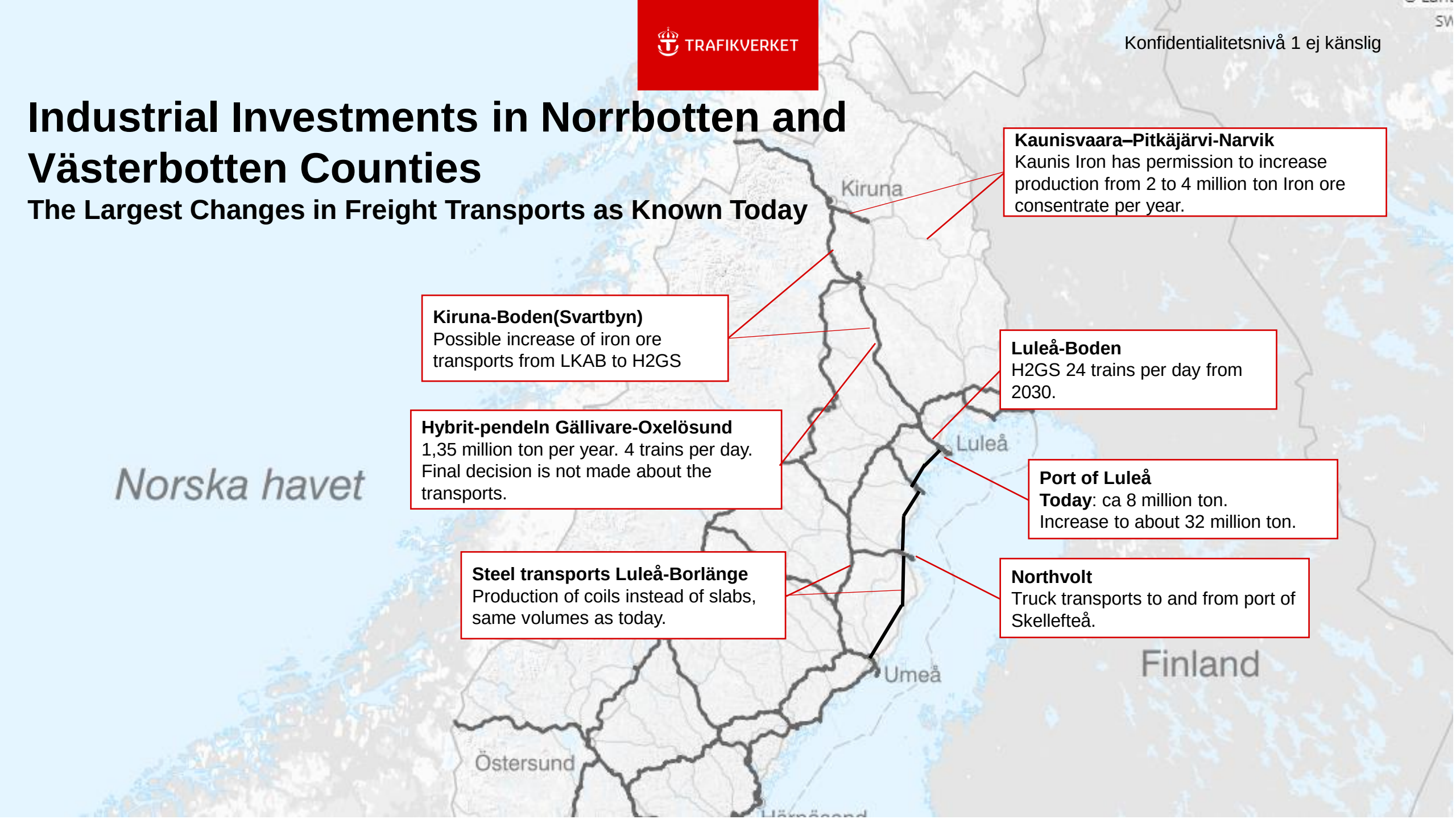
Konfidentialitetsnivå 1 ej känslig

Industrial Investments in Norrbotten and Västerbotten Counties

The Largest Changes in Freight Transports as Known Today



Kaunisvaara–Pitkäjärvi-Narvik
Kaunis Iron has permission to increase production from 2 to 4 million ton Iron ore consentrate per year.

Kiruna-Boden(Svartbyn)
Possible increase of iron ore transports from LKAB to H2GS

Luleå-Boden
H2GS 24 trains per day from 2030.

Hybrit-pendeln Gällivare-Oxelösund
1,35 million ton per year. 4 trains per day. Final decision is not made about the transports.

Port of Luleå
Today: ca 8 million ton.
Increase to about 32 million ton.

Steel transports Luleå-Borlänge
Production of coils instead of slabs, same volumes as today.

Northvolt
Truck transports to and from port of Skellefteå.

Development of the transport system

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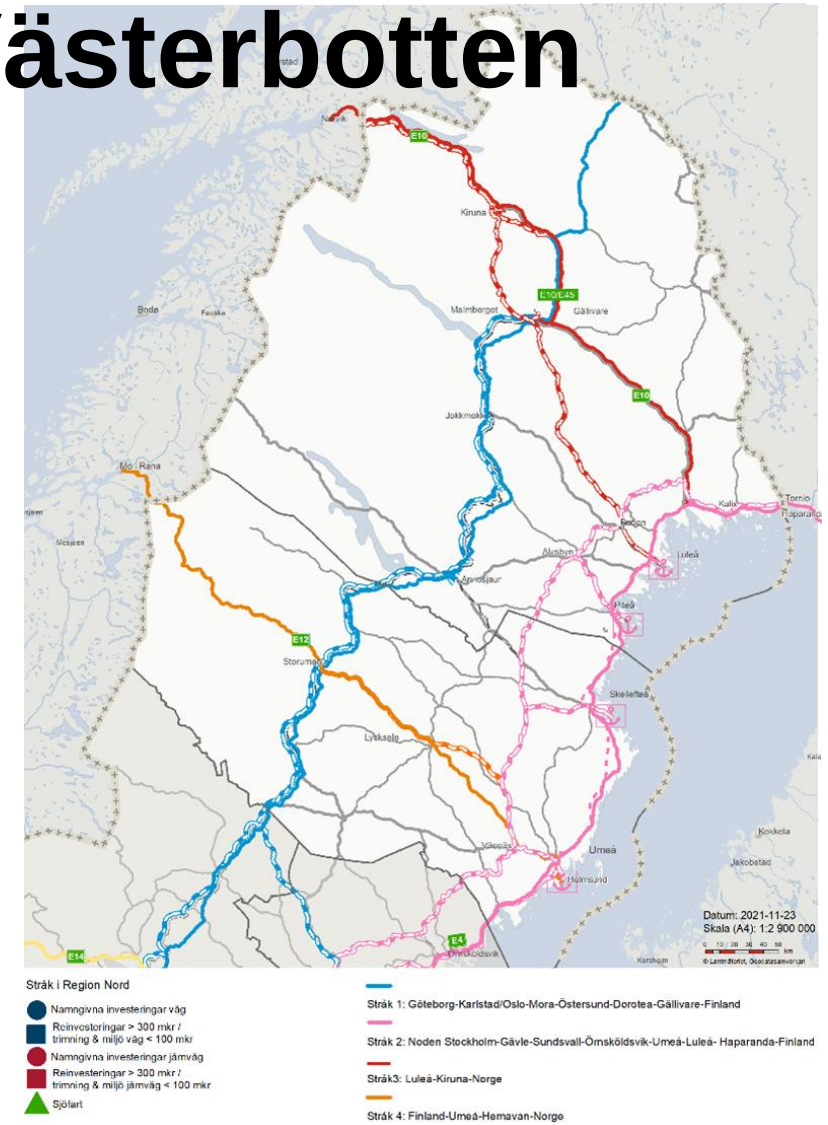
Konfidentialitetsnivå 1 ej känslig

Main Effects of the Plan in Norrbotten and Västerbotten

- Large increase of capacity on the Iron Ore Line
- Continued building of railway on the Bothnian Coast, but not completed until ~2040
- Improvement of connection Haparanda-Tornio



- Building of median barriers along the most important roads E4 and E10
- Enhancement of BK-4 (74 ton) road network
- Decreased quality of the road network

- Improved conditions for the maritime transports with new ice-breakers and improved fairway in Luleå harbour

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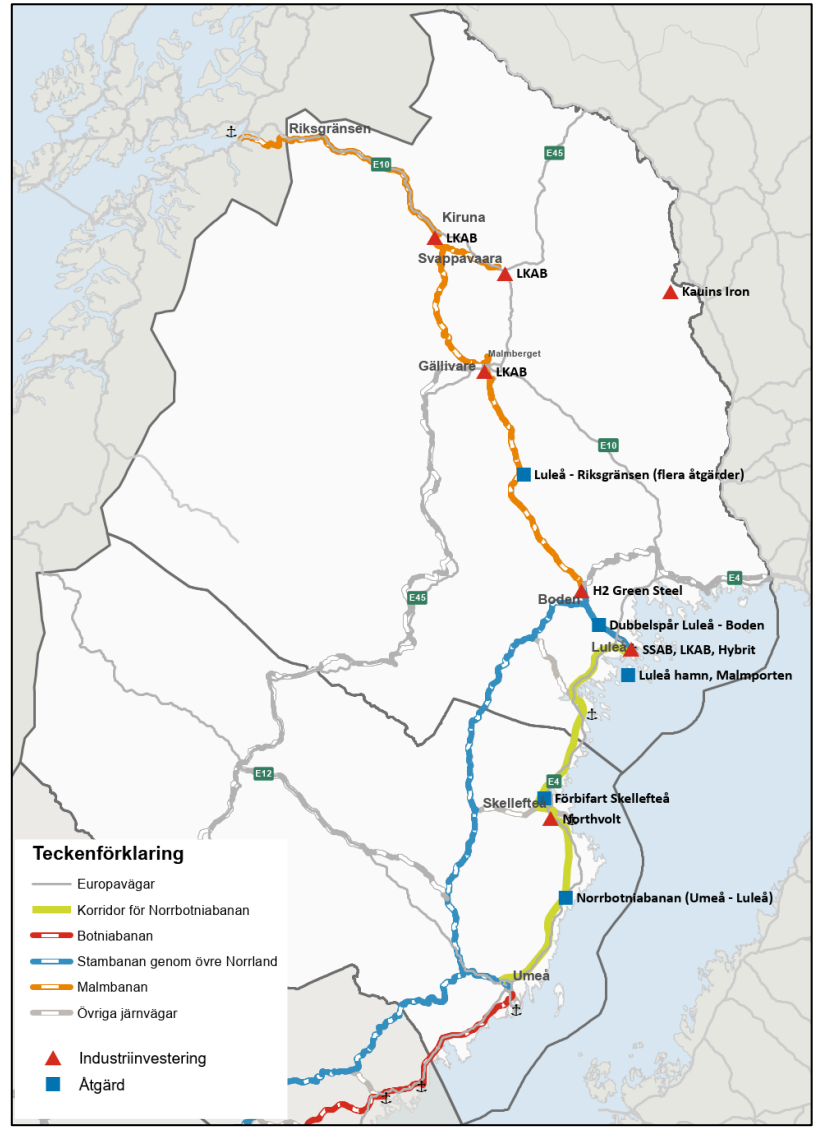
Konfidentialitetsnivå 1 ej känslig

Special Assignment from the Government

- Analyse projects in the transport infrastructure in Norrbotten and Västerbotten Counties
- Assignment was to describe
  - actual status of the projects
  - possibilities to speed up the realisation of the projects
  - possibilities of external financing



Map over industrial investments and planned projects included in the assignment.

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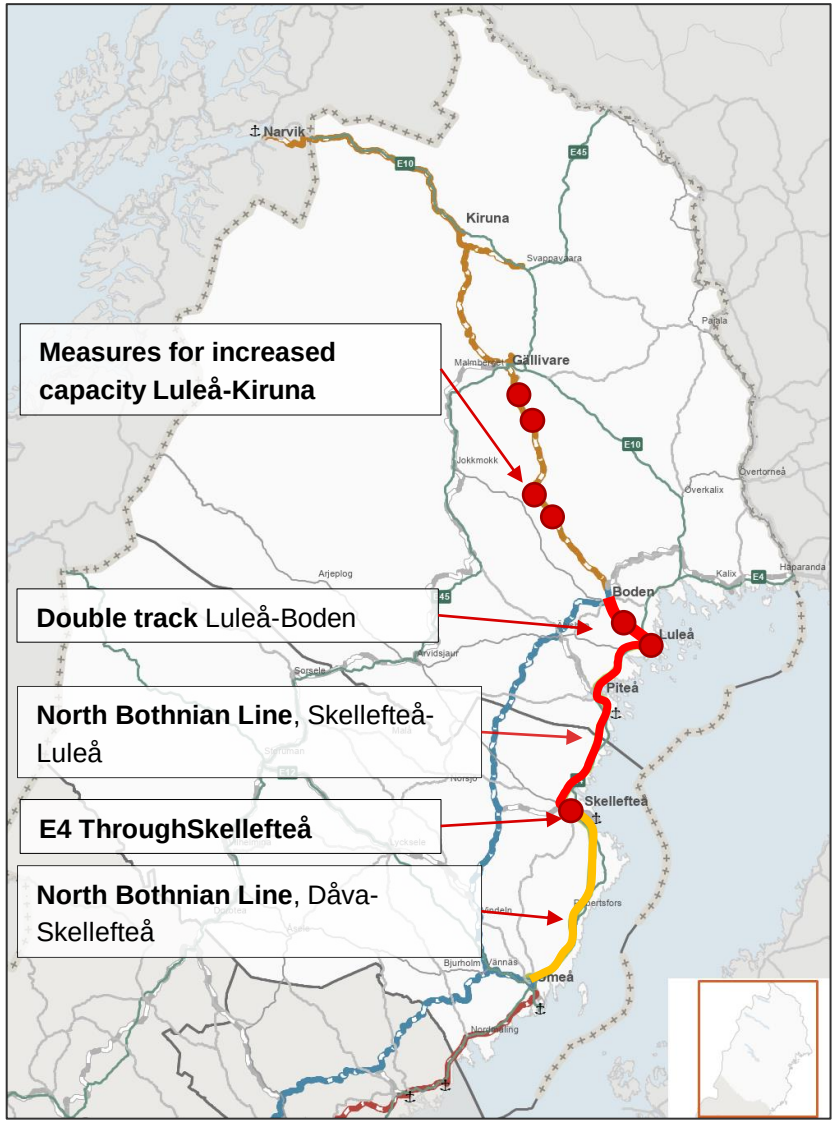
Konfidentialitetsnivå 1 ej känslig

Proposal from the Swedish Transport Administration

- The timing is critical. It is crucial to start with the measures before 2030 to meet the demand from the industrial investments
- It is possible to speed up many of the projects
- We propose an earlier production of
  - Measures for increased capacity on the railway Luleå-Kiruna
  - Double track Luleå-Boden
  - Completion of the North Bothnian Line Umeå-Luleå
  - New road E4 through Skellefteå
- Financing with loans could result in earlier completion of projects
- The assignment has been delivered to the Government for their decision



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Roads for 74 ton (BK4)

National infrastructure plan 2022-2033

- make up to 70–80 % of the roads that are most important for the business community available to BK4 by 2029

- continue to invest in BK4 with the goal of being able to make up to 80–90 %of the strategic road network for heavier transport available during the plan period

BK4 road network Norrbotten and Västerbotten 2023-11-03

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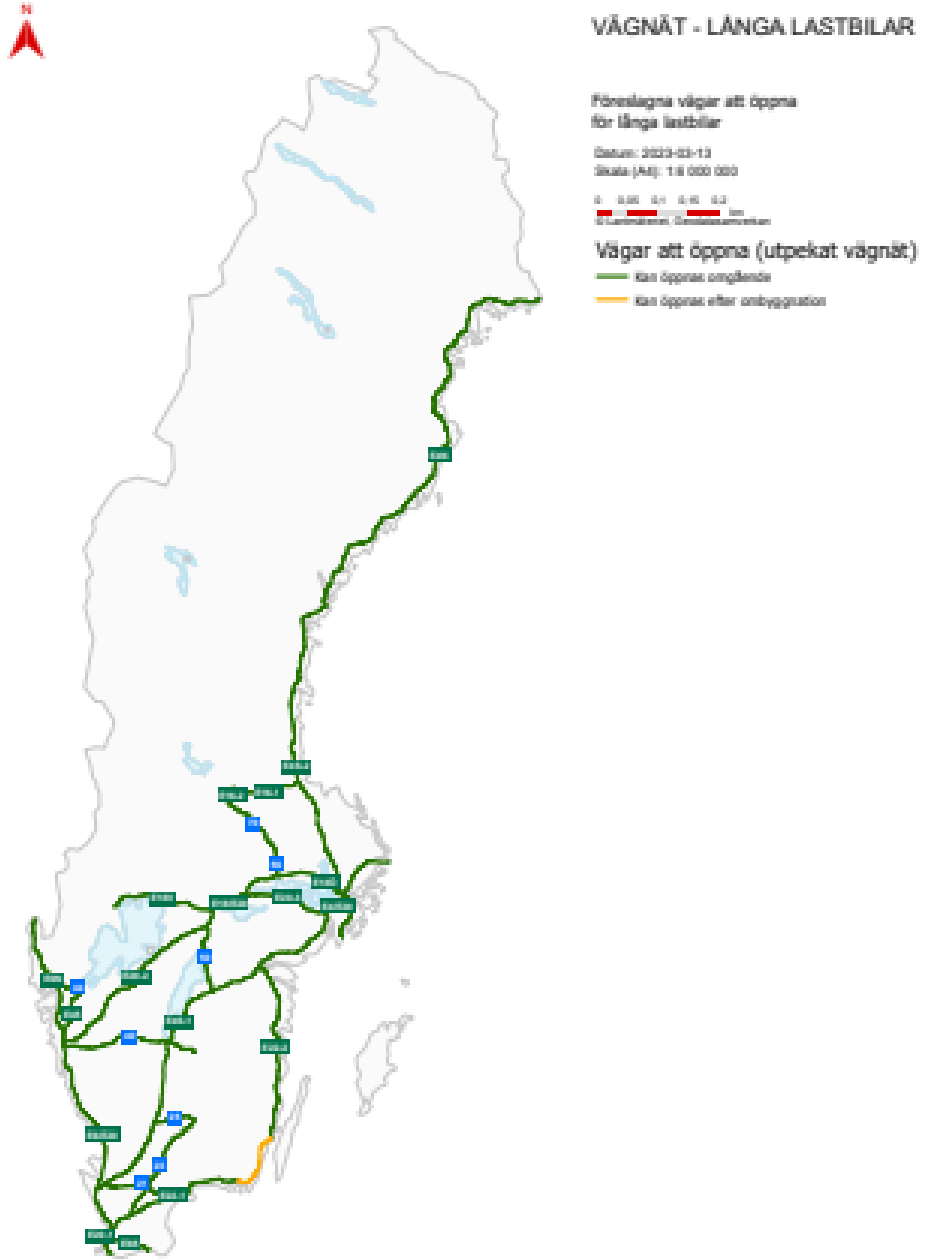
Longer trucks

- 34,5 m long trucks
- A designated road network
- Opens 1st of December 2023
- Around 5 900 km state roads
  - Main road network approx. 4500 km (map)
  - Additional 1400 km connections
- Additional municipal roads
- Effects
  - Reduced emissions
  - Traffic safety
  - Industry competitiveness
  - Socioeconomy



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Regulation (EU) 2023/1804: Infrastructure for alternative fuel

- EU-regulation
- Mandatory deployment of recharging and hydrogen refuelling infrastructure
- Phase-in 2025-2030

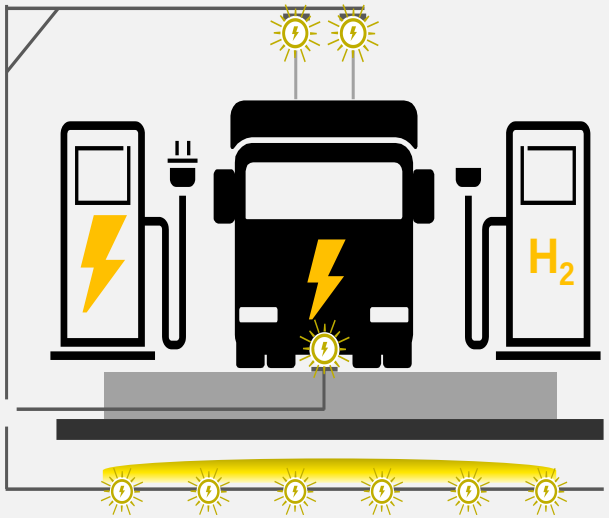
National framework for charging infrastructure and tanking infrastructure for hydrogen

- Governmental assignment
- Appropriate and efficient deployment, in all parts of the country
- Presented 1 November 2023

Joint authority follow-up of society's electrification

- Governmental assignment
- Society's electricity needs distributed among different sectors
- Annual reporting and final report 13 December 2024

Electrification activities Light and heavy duty



Remove obstacles to the electrification of the transport sector

- Governmental investigation
- Final report 31 December 2024

Support for charging and tank infrastructure

- Aimed at commercial actors
- Investment
- Public and non-public infrastructure
- Light and heavy duty vehicles

Electric road system

- Tasks in the national transport infrastructure plan
- Construction of an electric road pilot
- Proposal for a plan for electric road deployment

Stationary charging

- REEL: System demonstrator electrified truck transport in regional logistics
- E-Charge: System demonstrator electrified truck transport in long-distance traffic

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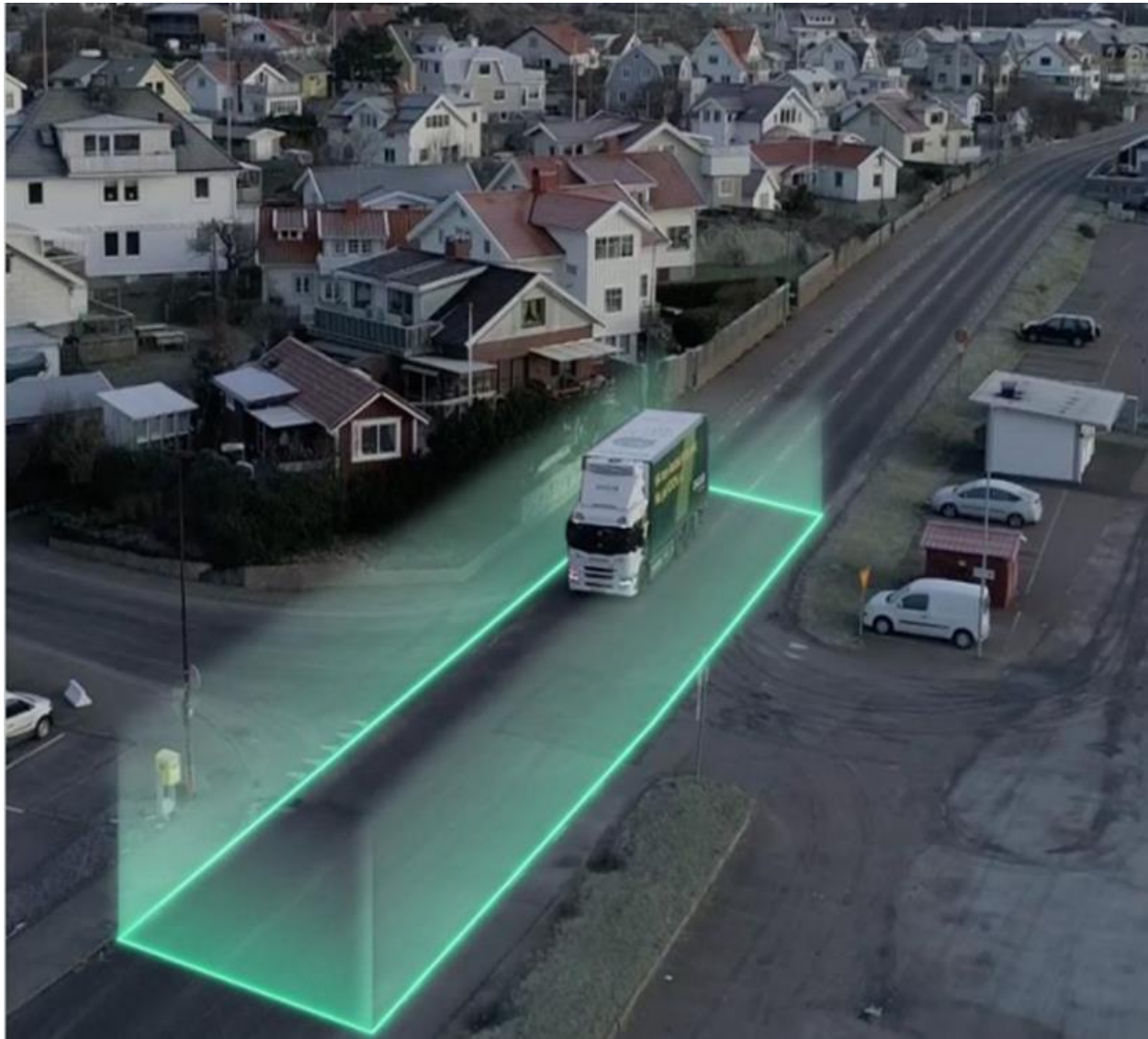
Digitalisation/Geofencing

Geofencing: A collective term for a digitally defined geographical area where objects (e.g. vehicles) can be informed or controlled in their operation, based on digital traffic rules or agreed conditions.

Possible applications

- Force switch to electric power
- Digital Speed control
- Inform upcoming situations
- Lower speed in exchange for access to a low bearing capacity road network



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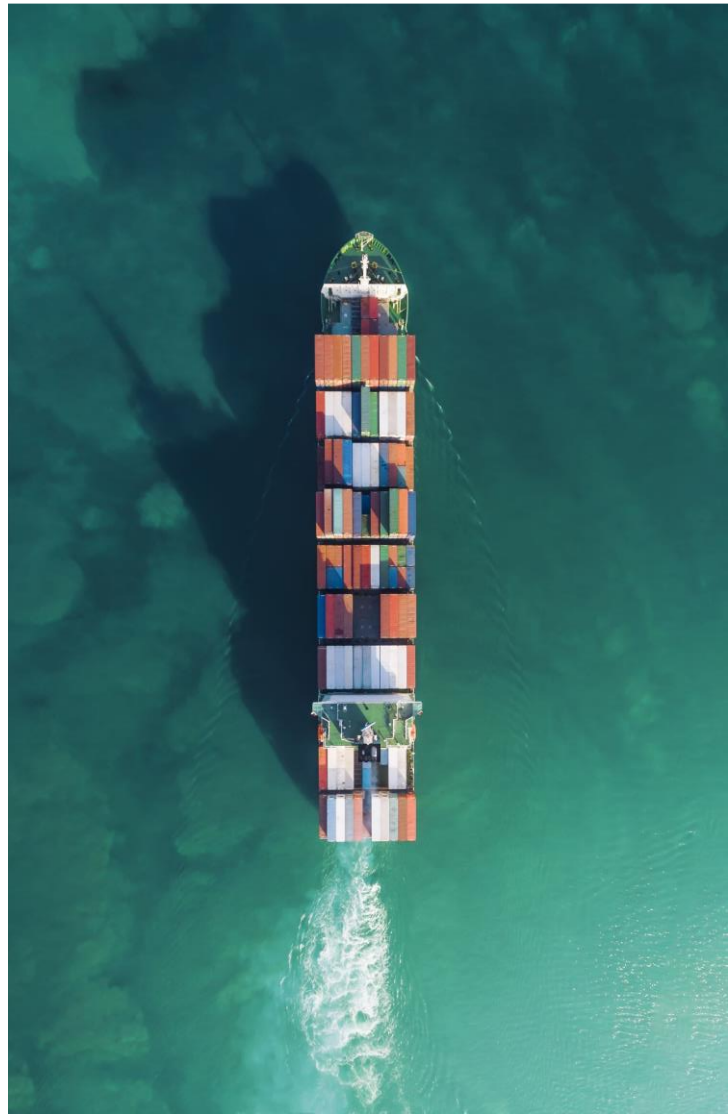
Digitalisation/ Smart port calls

The Swedish Maritime Administration participates, together with the actors in the shipping industry in a joint program to create more efficient port calls through digitalisation

Ex. Automised administration, navigational support from land, platforms for information sharing, nautical charts

Possibilities or financing in the National plan for the infrastructure is investigated



Modal shift to sea

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A national coordinator

- Appointed by the Swedish Government 2018
- Main purpose is to:
  - promote domestic- and short sea shipping
  - foster a modal shift from road to sea
- Since January 2022 the establishment of green shipping corridors is also included

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…what has happened during those years….?

- Increased focus on short sea shipping
- Modal shift has become a business strategy
- New short sea services have been started
- A movement has begun, but the volumes are still limited
- Different time perspectives a main factor
  - long term trends v/s short term pay back

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Ecobonus 2.0 – an incentive promoting intermodal transports

Based on the same principles as eco-bonus but…

- Higher annual budget (80 MSEK)
- Several actors in the intermodal chain can apply
- The support for investments is raised from 10 % to 50 % of the costs
- The application is split up into two phases:
  - The project phase - planning/preparing the service
  - The operational phase – starting up/runing the service
- Ongoing process in EU

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Future trends might create new opportunities

- Lack of truck drivers
- Changing trading patterns
- Rising fuel prices
- Increasing transport volumes

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Green Shipping Corridors – the Swedish approach

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The Clydebank declaration

- Announced on COP-26
- Includes 24 signatory countries
- Shall promote the establishment of at least 6 green shipping corridors by the middle of this decade and many more by 2030
- Focusing on the development of scalable green solutions
- The fuel must be green from a life cycle perspective
- Following-up on annual COP-meetings
- **A concept for the transition to sustainable shipping**

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Potential green shipping corridors

- Priority list of 12 potential green shipping corridors
- Mix of different fuels, vessels, time-perspectives
- Several other promising initiatives identified
- Existing/planned partnerships
  - Göteborg-Gent/Rotterdam
  - Trelleborg- Travemünde
  - Stockholm-Turku/ Åbo
  - Sandefjord - Strömstad
  - Umeå - Vasa
- A green transport-chain from A to B the overall goal

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How to continue?

Facilitate partnerships

- Further dialogue
- Initiate partnership meetings
- MOU/partnership agreements

Create the right conditions

- Incentives to close the cost gap
- Dialogue with other countries
- Link between stakeholders and authorities
- Bridge to the government

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LULEÅ HAMN
PORT OF LULEÅ · SWEDEN

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SJÖFARTSVERKET

Samfinansierat av EU
Transeuropeiska transportnätet (TEN-T)

LULEÅ KOMMUN

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Malmporten

- Swedens largest dreadging project in modern times
- Includes minor dreadging needed in The Kvarken area
- When the project is completed, the Port of Luleå will be able to transport three times as much goods as today, which will be needed to meet the region's development and industrial growth.
- At the same time, the project contributes to a reduction of up to 40 percent in the fuel consumption, up to 40 % environmental emissions and up to 40% freight costs of maritime transport.
- Total cost 4 500 million SEK

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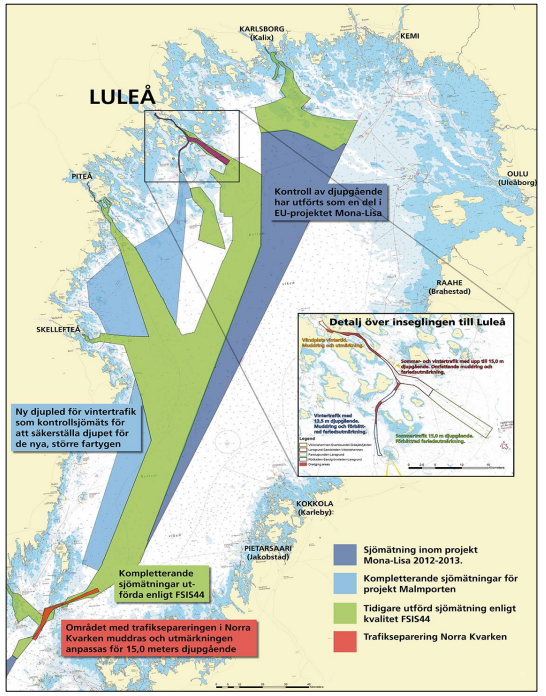
A maritime project where..

- The Swedish transport administration plans and finances (National plan)
- The Swedish Maritime Administration realises



Åtgärdsvalsstudie → Farledsutredning inkl tillstånd → Förberedelser inför byggstart → Byggstart och genomförande

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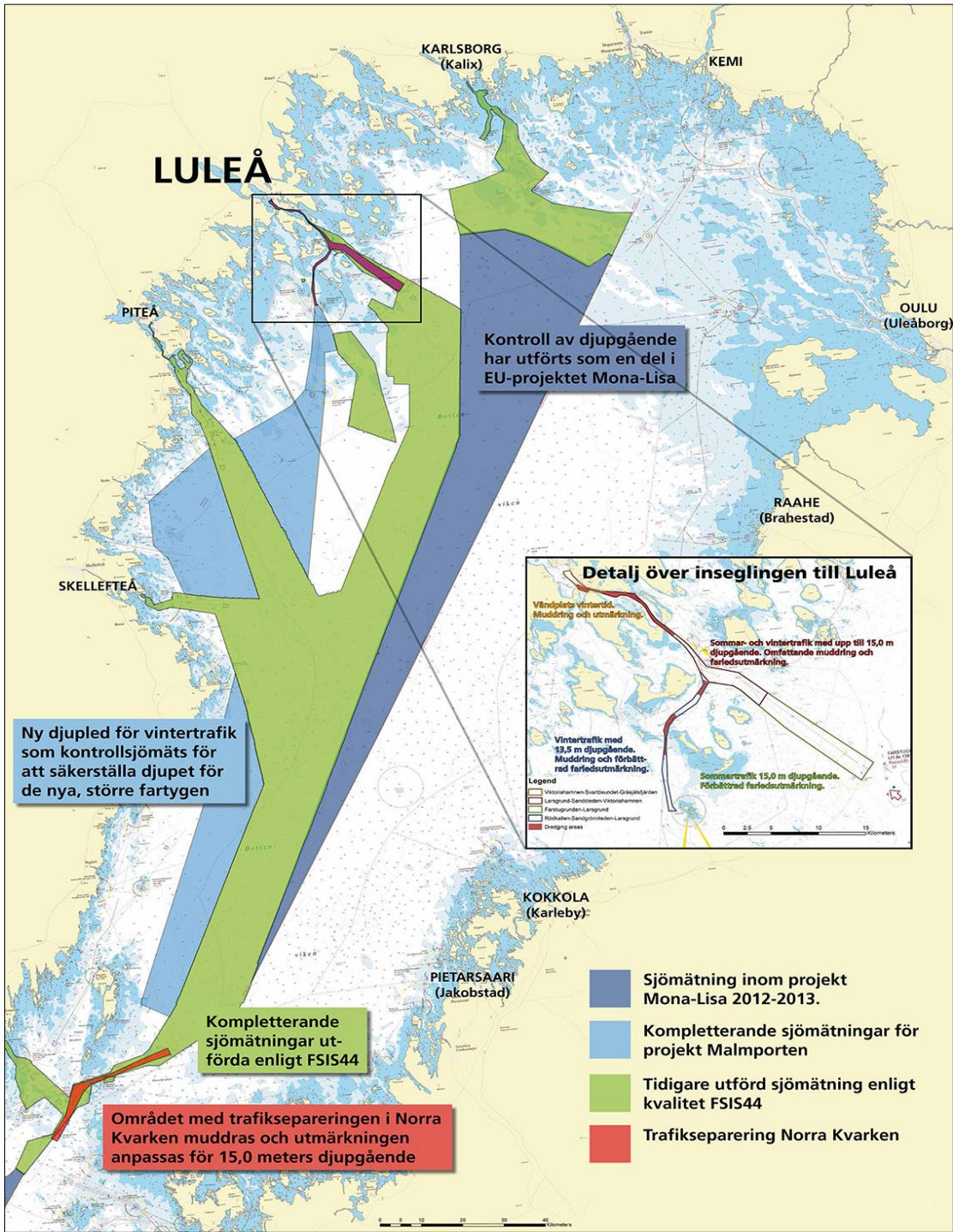
Project goals

- Increased loading capacity
  - 160 000 tonnes compared to ca 50 000 tonnes today – summer season
  - 75 000 tonnes compared to ca 13 000 tonnes - winter season

Larger vessels reduce freight costs and environmental impact

- Improved accessibility
  - Safer and straighter fairway with modern fairway markings.
  - No restrictions due to darkness
- New modern deep-water port
  - Capacity increase, enabling vessels of type Baltic Sea max.
  - More efficient port operations and cargo handling



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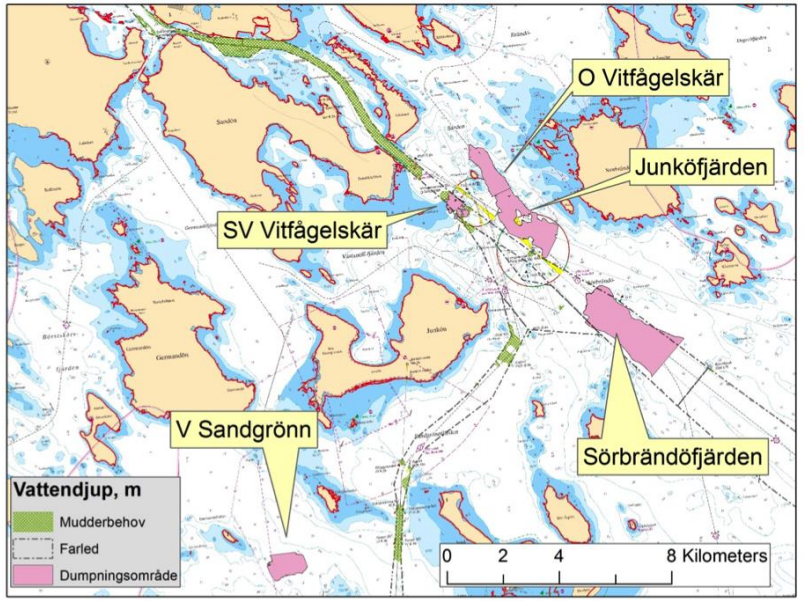
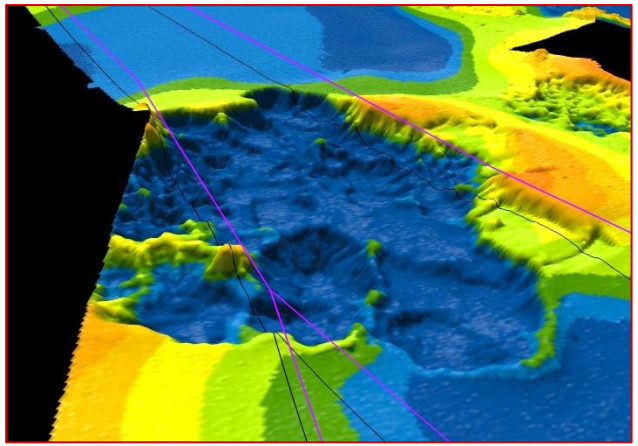
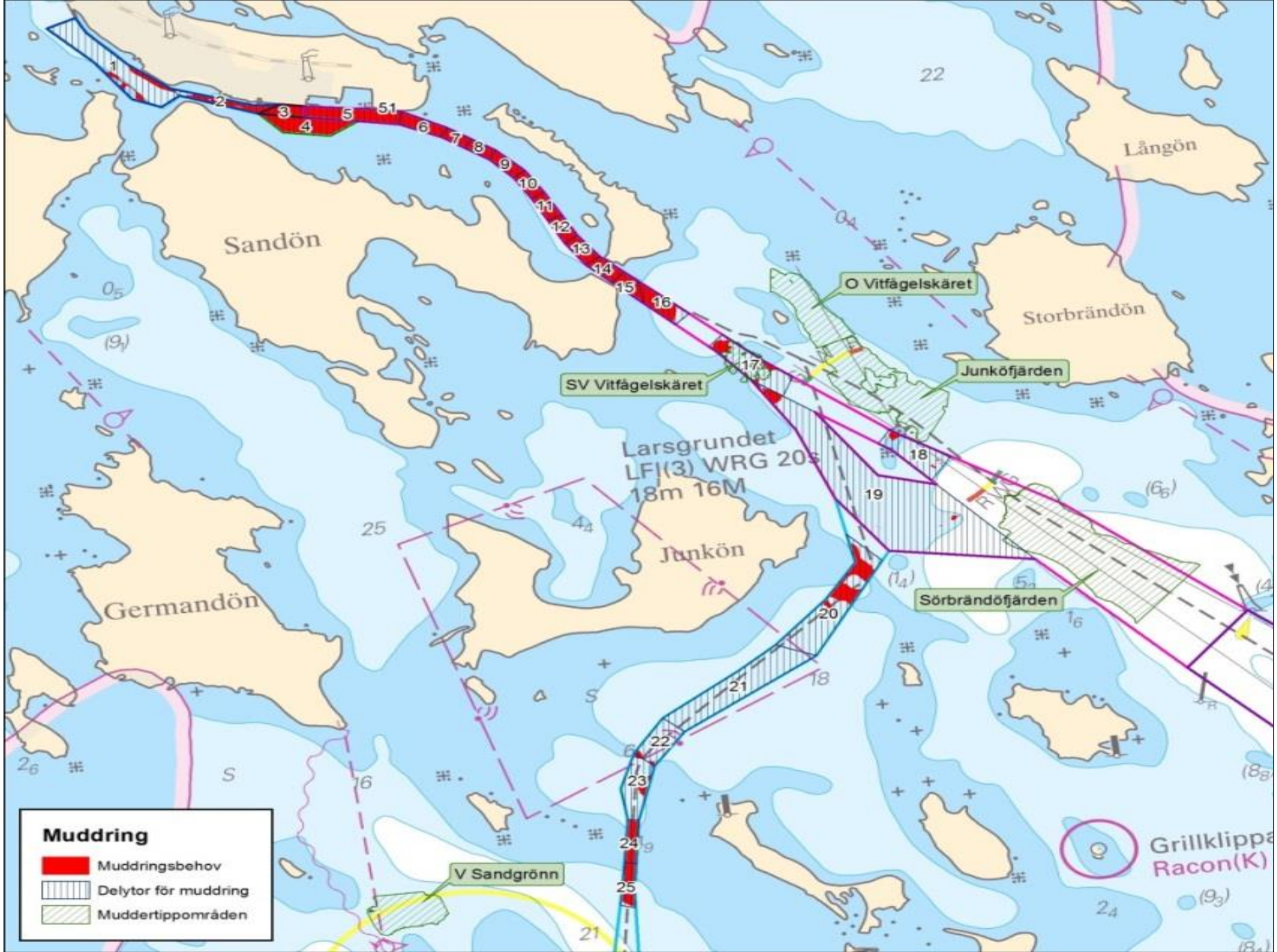
Measures in fairway

- Procurement 1 year before start
- Dreadging for four seasons
  - Season may-november
- New fairway markings
- Minimize disturbances for traffic and industry
- Close cooperation between the Swedish maritime administration and Port of Luleå
- Methods that minimize environmental impact
- 21,5 miljoner m^3 to be handled/dredged



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Storbrändön
Junkön
Germandön
Larsgrundet
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O Vitfågelskäret
SV Vitfågelskäret
Junköfjärden
Sörbrändöfjärden
V Sandgrönn
Grillklippa
Racon(K)
Muddring
Muddringsbehov
Delytor för muddring
Muddertippområden

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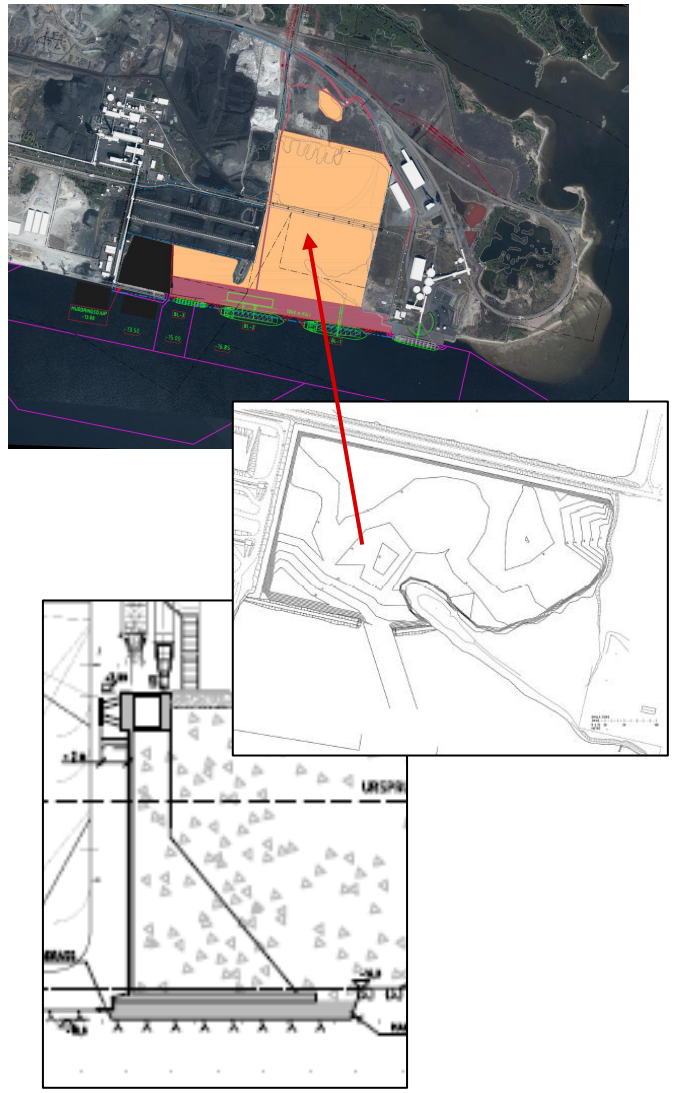
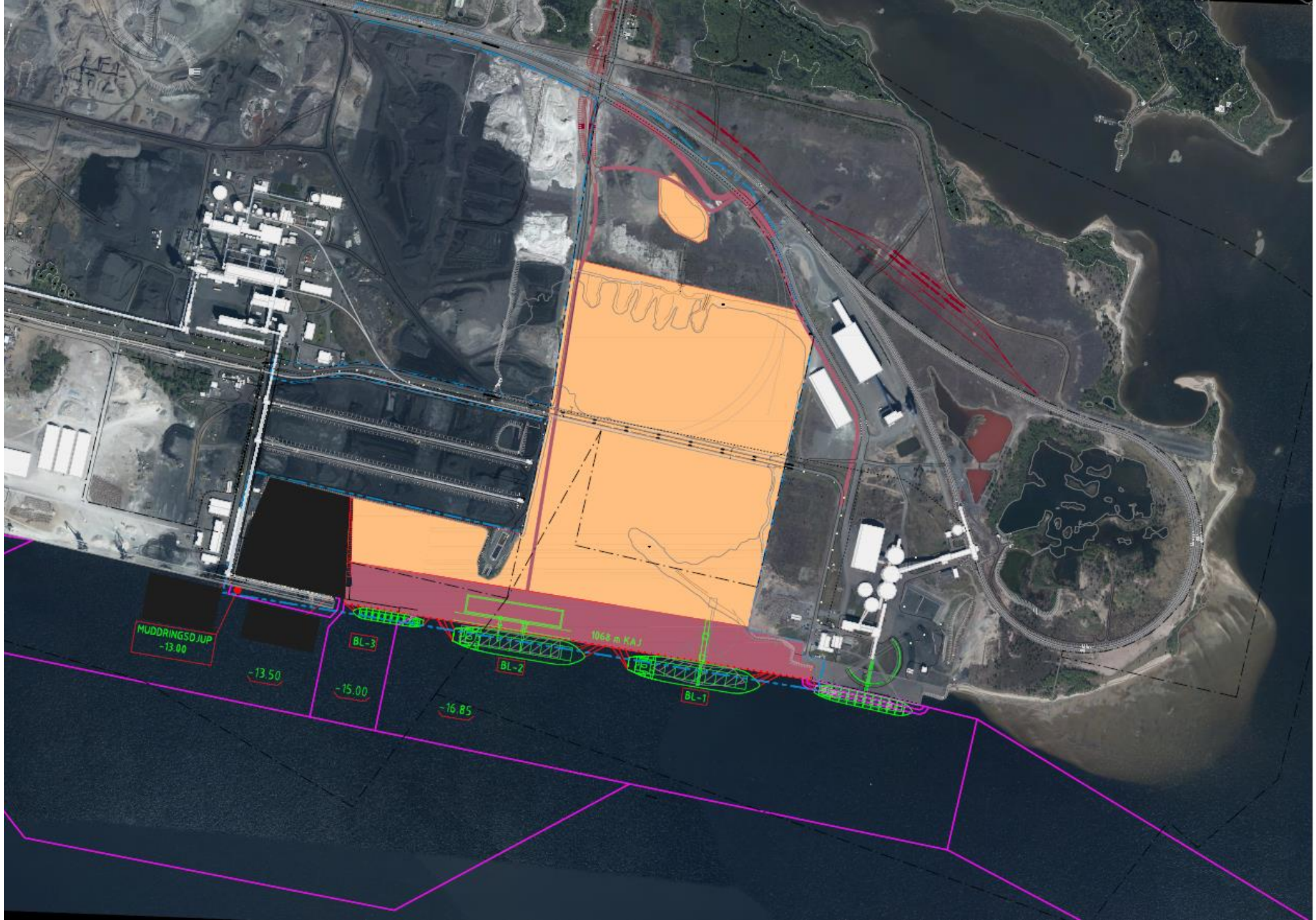
Measures in port

- Implementation 6-7 seasons including work during winter
  - Dredging of new deep-water port
  - Construction of a new deep-water quay
  - Construct port plans including pipelines and ship service
  - Construction of a new railway
  - Ensure SSAB's cooling water intake during implementation
- 1,0 miljoner m^3 to be managed/dredged inside the quayside line
- Approximately 3 million m3 will be reused (rock, sand)

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Several ports along the coastline developing and expecting new volumes

- Port of Umeå and fairway
- Port of Piteå
- Port of Skellefteå

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New ice breakers

- Procurement of two new icebreakers is ongoing
- Handled by the Swedish maritime administration
- Aim to have the first new ice breaker in operation 2027
- The ice breakers should be able to use methanol besides usual diesel and drive fossile free by 2030.

The new design. Source: The Swedish maritime administration

Cooperation

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Areas of dialogue and collaboration Northern Sweden and Northern Finland

Continuously dialog

- BEATA/Barents regional working group transport and logistics
- EGTC Kvarken
- Bothnian Arc
- Torne Valley Council
- Tourism industry

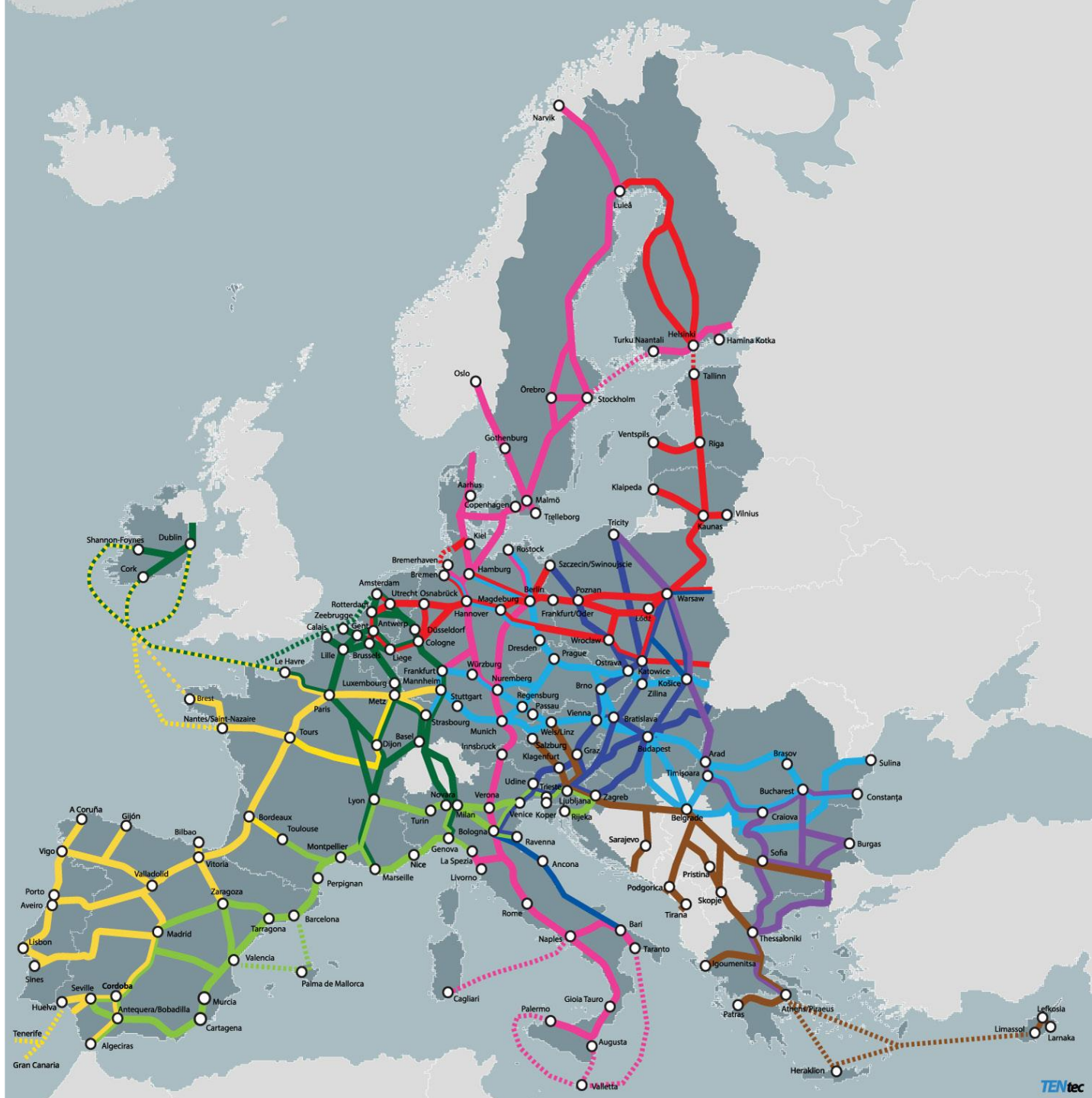
Projects

- Joint Barents Transport Plan
- Arctic railway
- Roadmap for Improved Arctic infrastructure and Logistics system
- Nordic countries part of Barents region New North Interreg Aurora

Platform North

- Increased demand
- New establishment of enterprises
- Military activity
- Political ambitions to become climate neutral by 2050

Cooperation is required at regional, national and international level and between stakeholders



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Platform North

A forum for stakeholders to exchange information, enhance a system perspective, coordinate and collaborate efforts for development

Wide range of stakeholders: EU (CNC, RFC), ministries, infrastructure managers, national authorities, regional authorities, ports, transport operators, companies, accociations, existing collaborative initiatives, academia

Public, semi-public, private, academic
National, regional, local levels

Geography
Northern Norway, Sweden and Finland

How
Aim is to start in a small- scale (core initiative) and grow depending on need (work groups, seminars etc)

When
Pre- work has started, with aim to start up spring 2024.

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Thank you for your attention!