

# Nordic Electricity Market Forum 2022



Nordic Council  
of Ministers

Nordic Electricity Market Forum  
Helsinki, 2022

# Introduction & welcome

Tatu Pahkala

Senior Adviser, Ministry of Economic  
Affairs and Employment &  
EMG Chair and host of forum





*In 2030, the Nordics have the world's most competitive, innovative and consumer-oriented electricity market, that contribute to reaching the ambitious Nordic climate goals.*



# 2030 Vision for the Nordic Electricity Market

## Core Purpose

To provide secure, affordable and sustainable electricity to the Nordic society, through competitive markets

## Core Values

Productive and trust-based cooperation across the Nordic countries and between stakeholder groups

Reliable and cost-efficient electricity supply

Transparent and market-based solutions

Constant improvements to low-carbon solutions, a driving force behind innovation and leading the way.

Emphasis on consumer-oriented solutions

## 2030 Goal

In 2030, the Nordics have the world's most competitive, innovative, and consumer-oriented electricity market, that contributes to reaching the ambitious Nordic climate goals.

## The Nordic Electricity Market in 2030

A society characterised by digitalisation, automatization and electrification is backed by a highly reliable electricity supply

The electricity market brings increasing benefits to the society as it enables consumers and new market players to contribute to the energy transition with innovative solutions.

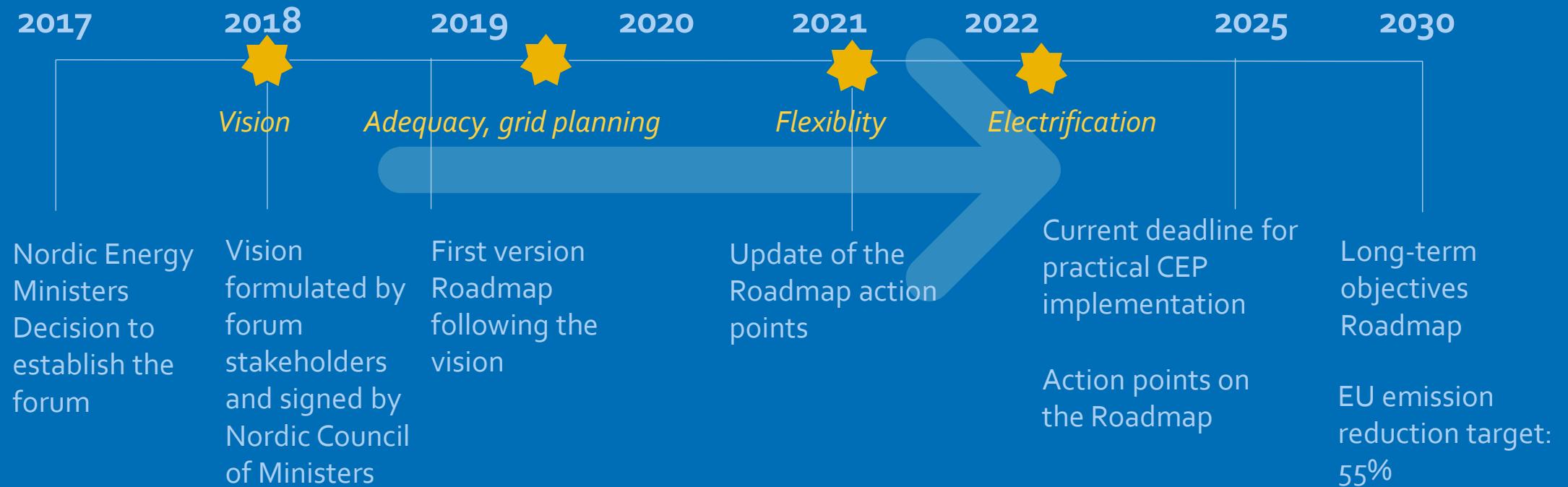
The grid infrastructure is smartly operated, cost-efficient, robust and without undue constraints, being optimised from a regional perspective

The Nordic electricity market is a positive driving force in the European electricity market integration, market development and in the effort towards reaching ambitious climate goals



Nordic Council  
of Ministers

# Roadmap for reaching the 2030 Nordic Electricity Market Vision

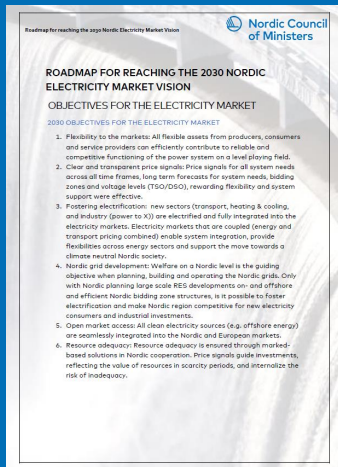


Nordic Electricity Market Forums –  
History can be found on [www.nordicelforum.org](http://www.nordicelforum.org)



# Purpose of the Nordic Electricity Market Forum 2022:

## Explore and mobilize around the topic of Electrification



Fostering electrification is one of the objectives in the Roadmap for Reaching the 2030 Nordic Electricity Market Vision.

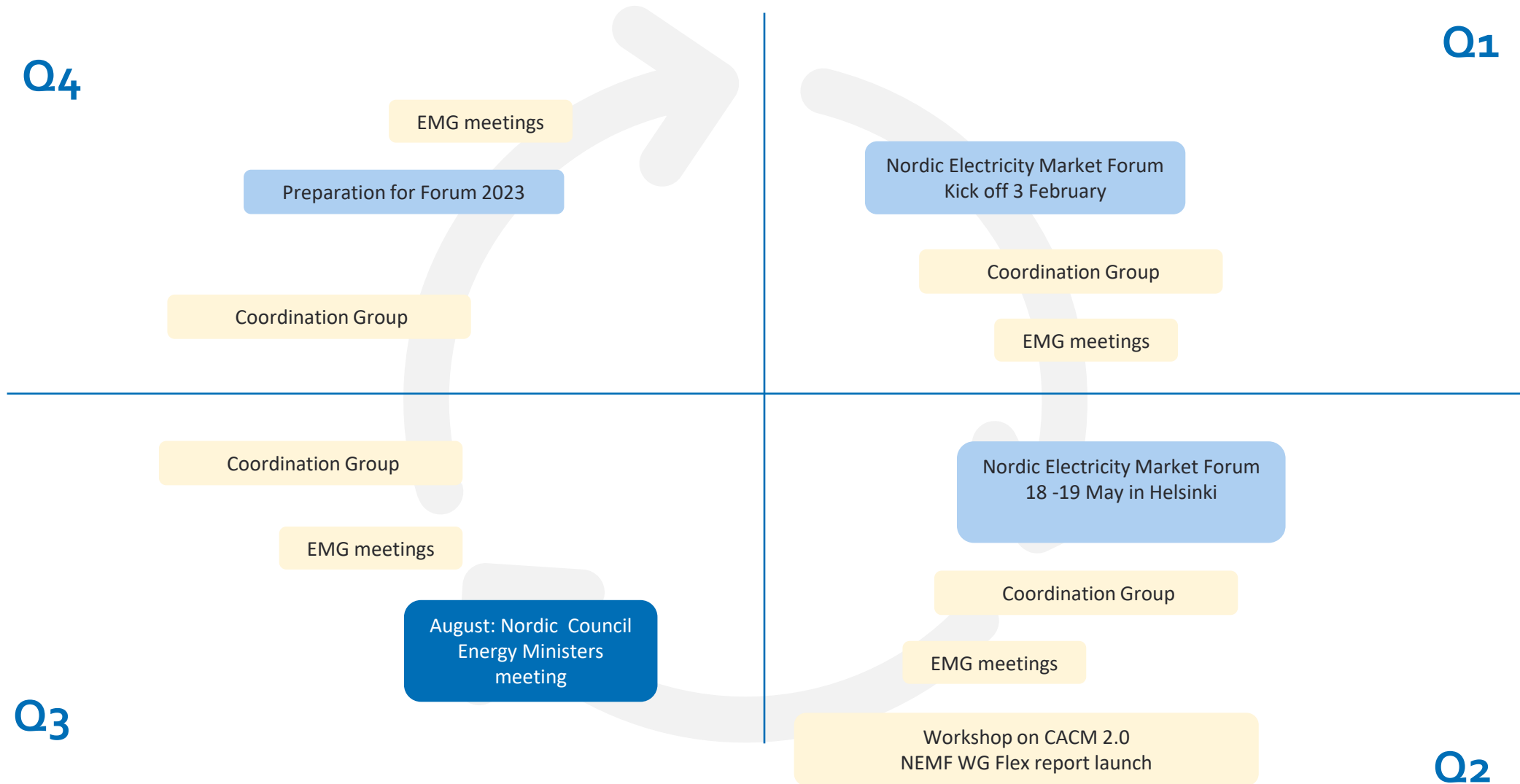
Intended outcome of the Forum:

Input and recommendations to the ministries on how to enable and facilitate electrification in the Nordics from your expert perspective.

History can be found on [www.nordicelforum.org](http://www.nordicelforum.org)



# Annual cycle of activities



Welcome by  
Mika Lintilä,  
Finnish minister of  
Economic Affairs







# Agenda May 18-19, 2022


## May 18, 2022

- 11.00**     **Arrival Lunch**
- 12.00**     **Welcoming words and opening of forum**  
EMG Chair Tatu Pahkala  
and online opening address from  
Mika Lintilä, Finnish minister of Economic Affairs
- 12.45**     **Industry perspective on electrification**  
Viktoria Karsberg, Head of Corporate Identity and Group  
Communications SSAB
- 13.20**     **Building the platform for electrification**  
Jukka Ruusunen, CEO Fingrid
- 14.00**     **Break**
- 14.30**     **Interactive session: Creating our expert advice and  
recommendations Pt. 1**
- 16.30**     **Wrap-up & check-out**
- 16.45 -  
18.00**     **Cocktail & Appetizers**

## May 19, 2022

- 09.00**     **Welcome back and introduction**
- 09.15**     **Interactive session: Creating our expert advice and  
recommendations Pt. 2**
- 10.30**     **Break**
- 10.45**     **Plenary session: Reflections and conclusions**
- 11.15**     **Closing speech**  
Catharina Sikow-Magny, Director EU Commission
- 11.45**     **Concluding notes and closing of forum**  
EMG Chair Tatu Pahkala
- 12.00**     **Departing Lunch**





**How would you like to  
help us create a  
productive and trust-  
based forum?**



Share your individual  
thoughts

Go to [slido.com](https://slido.com) and enter  
code:  
3675280

# An industry perspective on electrification

Viktoria Karsberg, Head  
of Corporate Identity and  
Group Communications  
SSAB





An aerial photograph of a two-lane asphalt road that curves through a dense forest. The trees are mostly green, with some showing yellow and orange autumn foliage. A dark-colored car is visible on the road, moving away from the viewer. A large white graphic element, resembling a stylized arrow or a speech bubble tail, points from the left edge of the frame towards the center, partially obscuring the forest background.

# SSAB

Industry perspective on electrification

Viktor Karsberg, VP Head of Corporate  
Identity and Group Communications

**SSAB**



SSAB is a global steel company  
with a leading position in  
high-strength steels and  
related services.

# SSAB in brief

**96** BILLION  
SEK  
Revenue in 2021



Annual steel  
production capacity:  
**8.8** MILLION  
TONNES

Steel making since  
**1878**

**14,000**  
professionals  
in over 50 countries

## OUR BUSINESSES:

SSAB Special Steels,  
SSAB Europe,  
SSAB Americas, Tibnor,  
Ruukki Construction

**SSAB**



# SSAB in the global steel market

SSAB is market leader in defined areas of the global steel market

Global carbon steel market  
100%:  
~1800 million tonnes



SSAB 3%

## SSAB focus markets

Special steels  
Globally<sup>1</sup>

Automotive premium steel  
Globally<sup>2</sup>

Flat carbon steels and tubes in  
The Nordics

Heavy plate in  
North America

## Market size, million tonnes

~ 5

~20

4-5

~ 10

## SSAB market share, %

~ 25%

~ 3%

~40%

30-35%

1) Defined as Quenched & Tempered (Q&T) flat products and Hot-rolled Advanced High-Strength Steel (AHSS)  $\geq 700\text{MPa}$   
2) Defined as hot-rolled, cold-rolled and coated Advanced High-Strength Steel (AHSS) strip products for automotive  $\geq 420\text{MPa}$



# Our offering



# Our steel solutions work everywhere







Our steel  
makes work lightweight

SSAB



Upgrading to high-strength steels saves customers 20–40% of weight for upgraded parts, for a weight reduction of about 10% for a timber truck.

This means the truck can carry 2 extra tonnes of timber per transport, equal to 5% less distance traveled.

Over 10 years, the truck emits 120,000 kg less CO<sub>2</sub> and saves 90,000 km worth of diesel fuel.



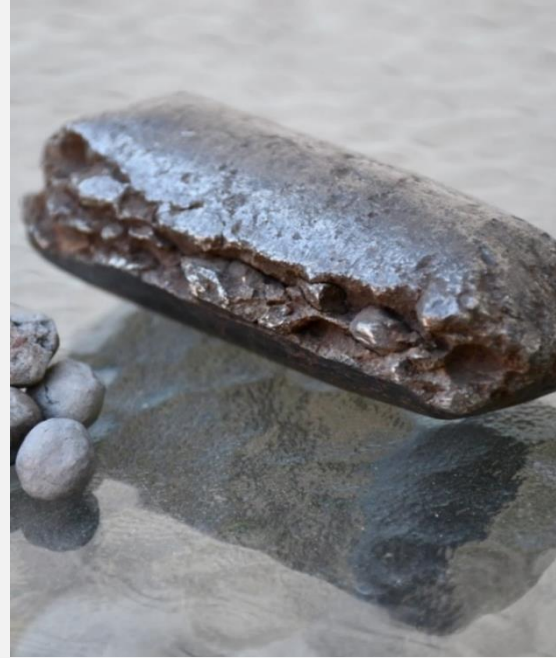


First in fossil-free steel

# Leading the green transition of the steel industry



HYBRIT Joint Venture  
between SSAB, LKAB and  
Vattenfall formed in 2017 –  
World-unique pilot plant in  
operation since 2020



Plan to reach commercial  
volume of 1.3 million tonnes  
fossil-free Hot Briquetted Iron  
(HBI) in 2026



World's first fossil-free steel  
rolled and delivered to Volvo  
Group in 2021

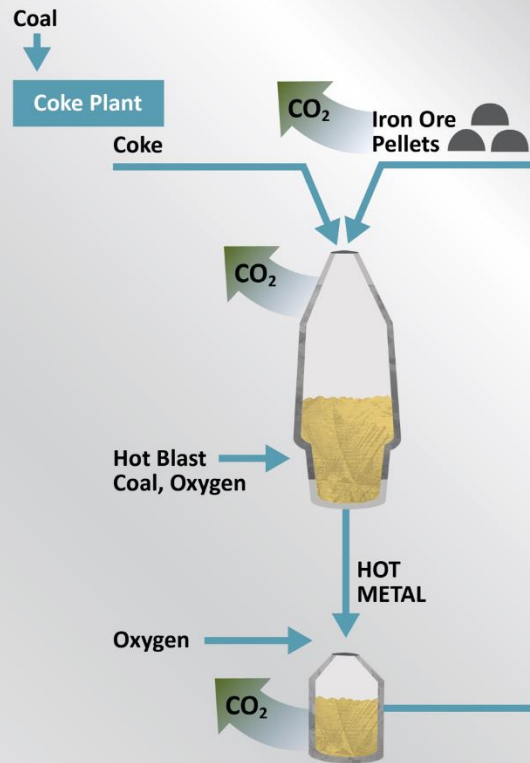


Partnerships for a fossil-free  
value chain



# Fossil-free steelmaking

## BLAST FURNACE

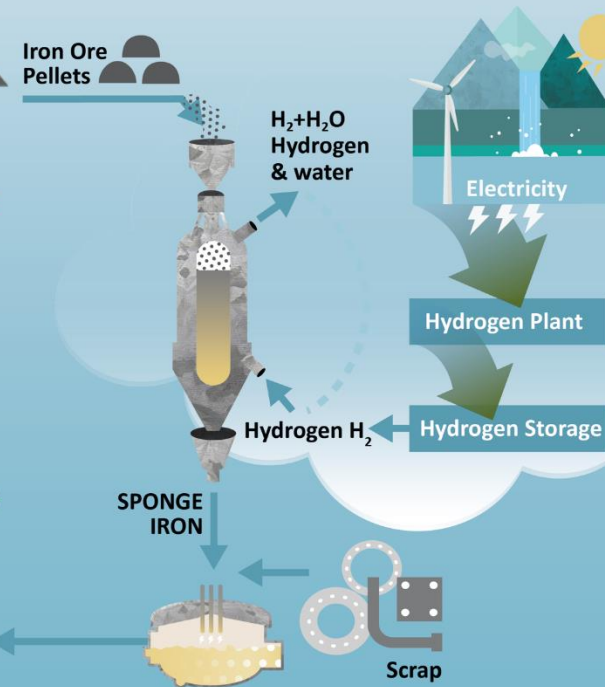


## IRONMAKING

## STEELMAKING

CRUDE STEEL

## DIRECT REDUCTION



2016-2017  
Pre-feasibility Study

2018-2024  
Feasibility Study & Pilot plant trials  
PUBLIC

2026 –  
Demonstration Plant

# Accelerated customer demand for fossil-free products

## Examples of partnerships



## Demand will exceed supply

- ▶ Demand from existing customers already exceeds currently planned supply of 1.3 million tonnes in 2026
- ▶ Demand for broader portfolio of premium products – e.g. towards the mobility segment
- ▶ New customers approaching SSAB

# Planning for an accelerated transformation of the Nordic strip production system

A broader offering  
of fossil-free  
products

A step change in  
efficiency and  
flexibility

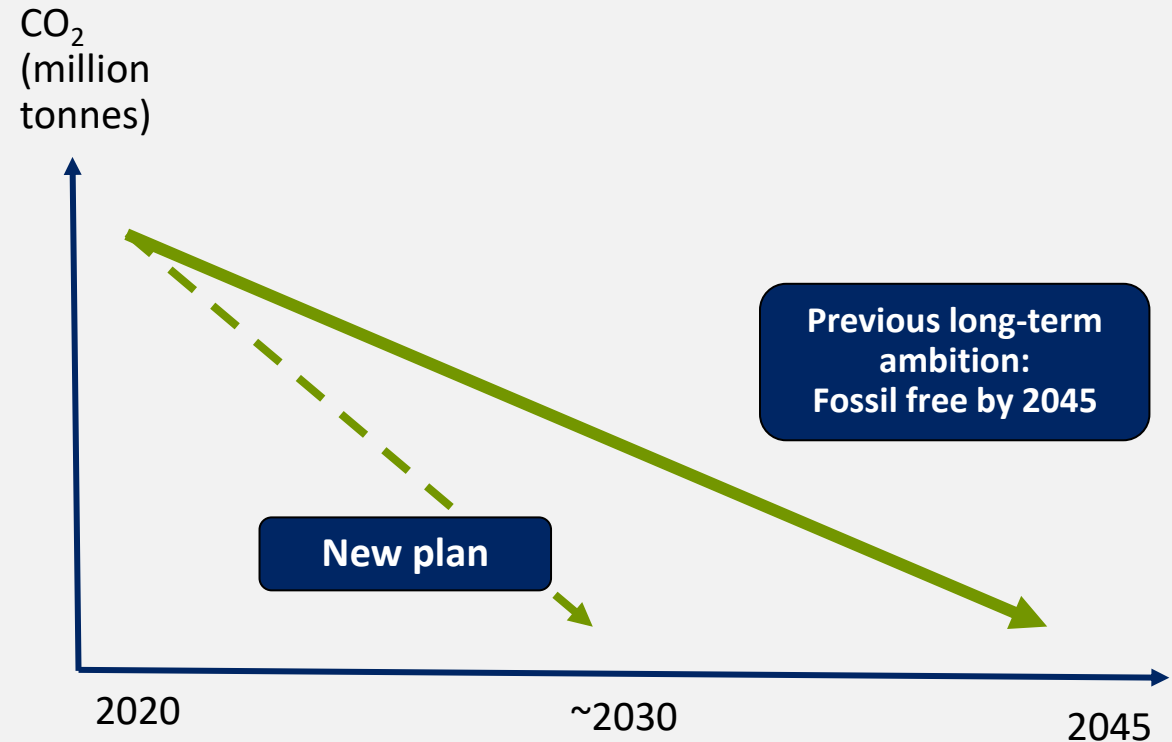
- ▶ Build **one mini-mill in Luleå and one in Raahe**, close existing blast furnaces
- ▶ **Scale of 2.5+ MT each**, in line with current capacity
- ▶ Complete **transformation during the next ~10 years**, before next scheduled blast furnace relinings
- ▶ **Expand product range** in terms of grades, dimensions and quality, within current specialty and premium strategy
- ▶ Capability to run a **flexible load of HBI and recycled scrap**
- ▶ **Leverage existing downstream assets** for the new mills (including Borlänge, Hämeenlinna, Tube mills, Tibnor and Ruukki Construction)
- ▶ Both mills to be built **fossil-free from start**, including power supply

# Eliminate CO<sub>2</sub> emissions 15 years earlier than planned

## ► Mitigating climate change

- Major contribution to climate targets in Sweden and Finland – around 8 million tonnes reduced CO<sub>2</sub> emissions per year

## ► Strengthens SSAB's ESG position



\*Graph for illustrative purposes

# Strategic investment program of SEK 45bn

## ► Strategic investment program of SEK ~45bn for the Nordic transformation

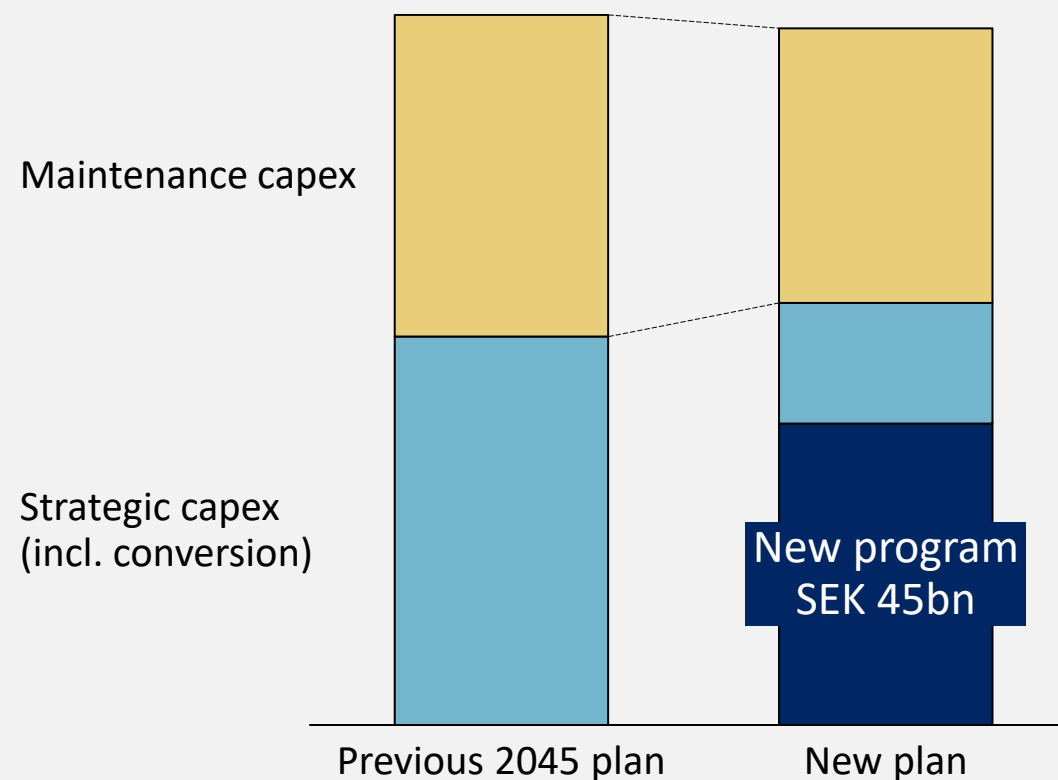
- Capex during 2022-2030 (timing depending on permits and approvals)
- The sum of SEK 45bn includes Luleå, Raahе, Borlänge and Hämeenlinna
- Oxelösund conversion (~SEK 5bn) not included
- Potential co-investment in HYBRIT-facilities not included

## ► Similar total investment level for the period 2022-2045 compared to previous plan

- Reduced maintenance capex and modernization needs
- More strategic and future oriented investments

## ► Ability to fund transition with own cash flow

### SSAB investments until 2045





# What is required

**Electricity transmission on time**

**Efficient permit processes**

**Priority for initiatives that  
contributes to climate targets**

**Cooperation between the Nordic  
energy markets**



# Way forward

*Feasibility studies have been initiated for Luleå and Raahе projects*

*Permit processes will start this year*

# SSAB



*A stronger,  
lighter and more  
sustainable world*

*Together with our customers,  
we will go further than anyone  
else in realizing the full potential  
of lighter, stronger and more  
durable steel products.*



# Q&A

Go to [slido.com](https://slido.com)  
Use code:3675280

# Building the platform for electrification

Jukka Ruusunen  
President and CEO,  
Fingrid Oyj







May 18th, 2022

Jukka Ruusunen  
President and CEO, Fingrid Oyj



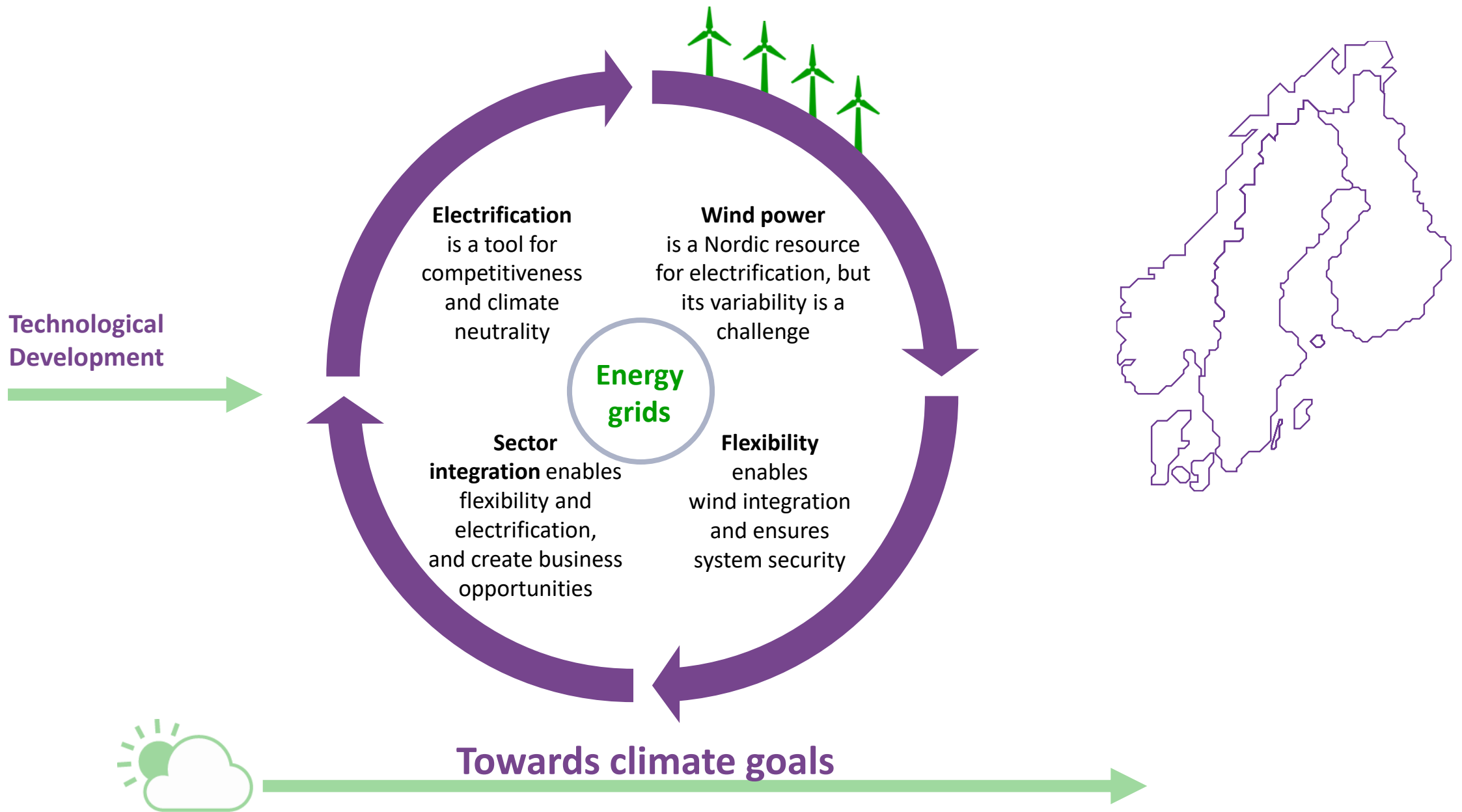
@RuusunenJukka

# Building THE PLATFORM for electrification

Nordic Electricity Market Forum 2022

Helsinki, May 18th-19th

# FINGRID

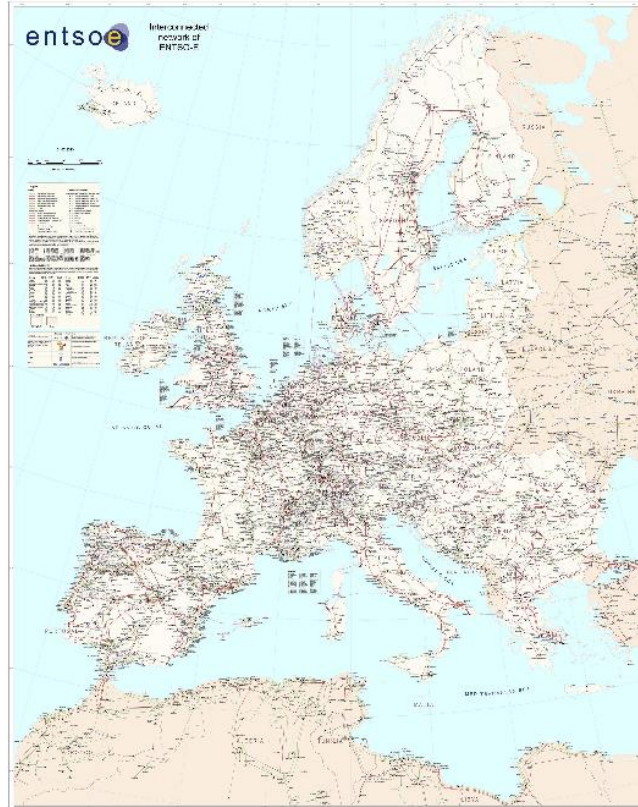




# Platform

## Strong grid

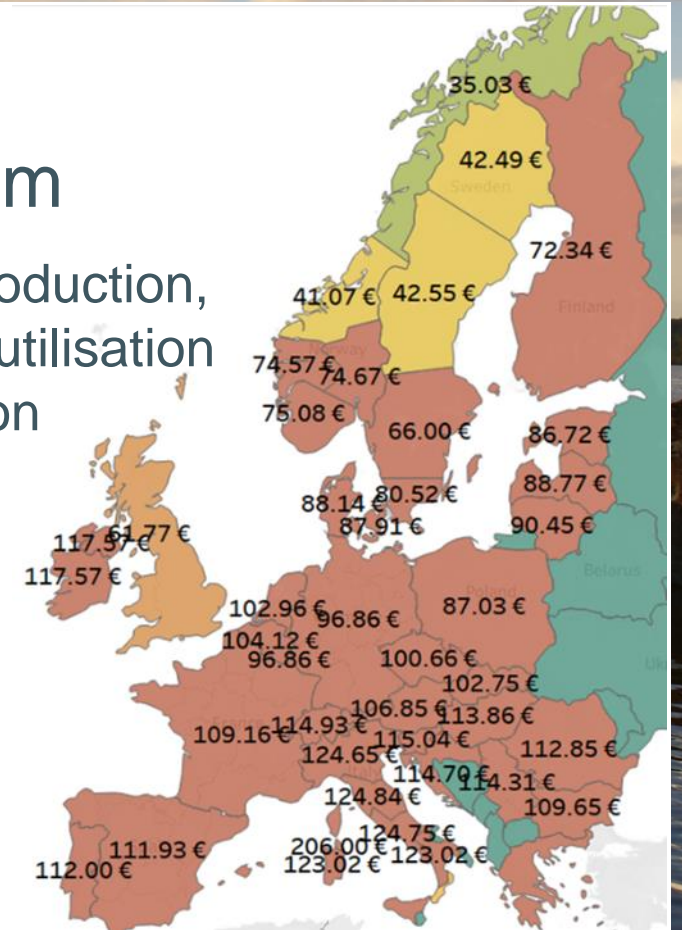
guarantees  
free  
movement of  
electricity



+

## Market mechanism

that steers production,  
demand and utilisation  
of transmission  
capacity





High prices  
Huge price differences

# Today



**In summary, ACER puts forward the following 13 measures for the consideration of policymakers**

## 13 measures for the consideration of policymakers, future-proofing the EU wholesale electricity market design



**1.** Speed up electricity market integration, implementing what is already agreed



**2.** Improve access to renewable Power Purchase Agreements (PPAs)



**3.** Improve the efficiency of renewable investment support schemes



**4.** Stimulate 'market making' to increase liquidity in long-term markets



**5.** Better integrate forward markets



**6.** Review (and potentially reduce, if warranted) collateral requirements



**7.** Preserve the wholesale price signal and remove barriers to demand resources providing flexibility



**8.** Shield those consumers that need protection the most from price volatility



**9.** Tackle avoidable supplier bankruptcies, getting the balance right



**10.** Tackle non-market barriers, ensuring generation and infrastructure is built at pace



**11.** Consider prudently the need for market interventions in situations of extreme duress; if pursued, consider tackling 'the root causes'



**12.** Consider public intervention to establish hedging instruments against future price shocks



**13.** Consider a 'temporary relief valve' for the future when wholesale prices rise unusually rapidly to high levels



### Want to learn more?

Check out the full report on ACER's Final Assessment of the EU Wholesale Electricity Market Design.

[www.acer.europa.eu](http://www.acer.europa.eu) [in linkedin.com/company/eu-acer/](https://www.linkedin.com/company/eu-acer/) [twitter.com/eu\\_acer](https://twitter.com/eu_acer)

Let electricity  
move freely!  
Improve  
market trust!

FINGRID

# Nordic vision 2030

Clean and competitive  
electricity that enables a climate-neutral,  
secure and integrated energy system

## Adequate infrastructure

enabling an integrated market for  
renewable energy resources, as well as  
direct and indirect electrification

## Secure power system and integrated market

with market design supporting flexibility  
and secure system  
operation, and with a level playing  
field for all technologies

## Optimised energy system

in which infrastructure is based on  
climate-neutral electricity and on the  
needs of stakeholders

Good cooperation among stakeholders – Excellent conditions for wind – Easy access to advanced markets –  
Trustworthy basis for green investments.



# Our strategic themes

## Adequate infrastructure

- Build adequate infrastructure including the Baltic Sea and North Sea regions
- Speed up connection to grid
- Optimal utilisation and performance of existing system
- Use the full transmission technology mix for further grid expansion

## Secure power system and integrated market

- Ensure market access and financial incentives for all energy resources to provide adequacy, flexibility and system services
- Develop the requirements for new energy resources to ensure their flexibility and the system security
- Create tools to monitor flexibility and also forecast it at a Nordic level
- Introduce offshore bidding zones and integrate offshore solutions into the electricity market

## Optimised energy system

- Develop tools and create cooperation models for holistic energy system planning
- Use ambitious wind power and electrification scenarios in system planning

# Our key messages

- Broad cooperation across all energy sectors and stakeholders is vital
  - Nordic TSOs must develop and maintain adequate infrastructure for effective markets and renewable energy sources
  - All sources of flexibility – in consumption, energy storage and generation – are needed for balancing and congestion management
  - Easy and equal market access and proper incentives for all energy resources are required to provide adequacy, flexibility and system services
- Power system planning, including the Baltic and North Sea regions, must consider all energy sectors and types of infrastructure to enable optimisation of the entire energy system
  - There needs to be streamlined processes to make the grid capacity and grid connections available in time.



# Thank you!

**Fingrid Oyj**

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**FINGRID**

# Q&A

Go to [slido.com](https://slido.com)  
Use code: 3675280



# Break until 14.30



# Interactive session: Creating our expert advice & recommendations Pt. 1



**Step 1:** Introduction and background *(20-30 min)*

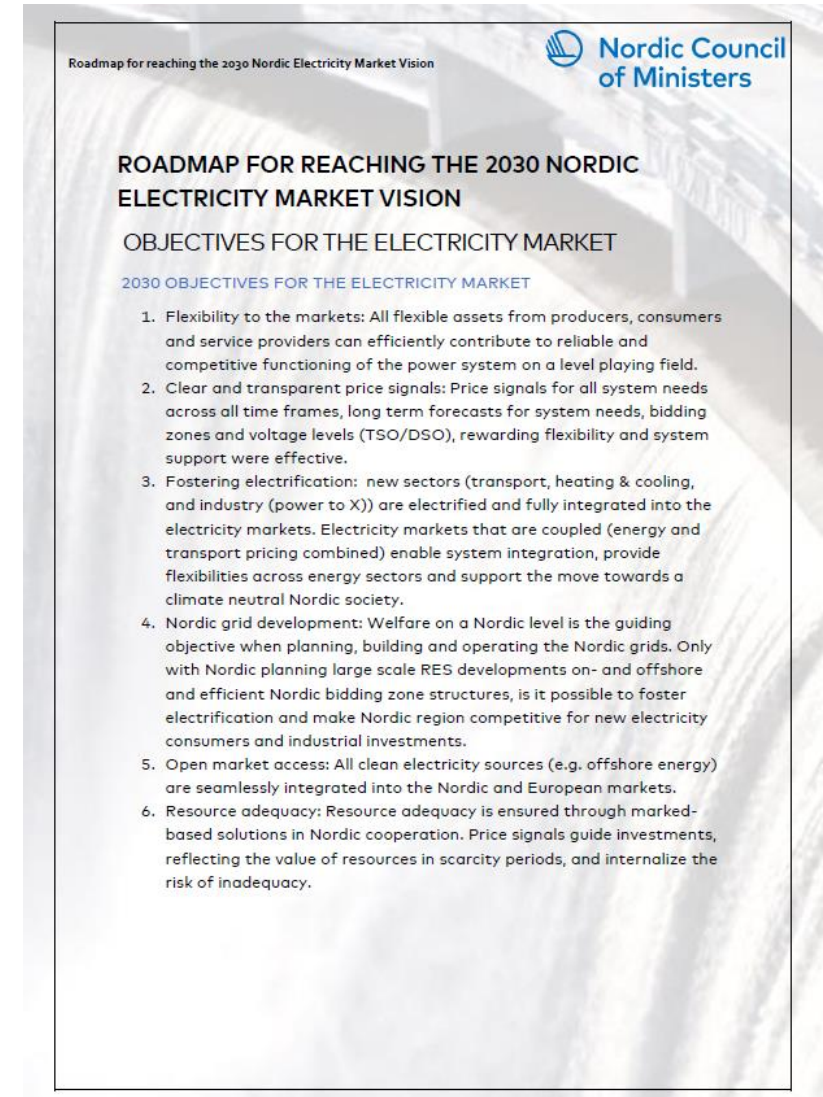
**Step 2:** Dialogue and selection in break-out groups *(60 min)*

**Step 3:** Plenary sharing of first outcomes *(30 min)*



# Introduction and background

- Roadmap was updated in 2021 Forum
- 2030 Objectives:
  1. Flexibility to the markets
  2. Clear and transparent price signals
  - 3. Fostering electrification**
  4. Nordic grid development
  5. Open Market Access
  6. Resource Adequacy
- **Action points** in the Roadmap addressed to EMG, NordREG and Nordic TSOs





# Intended outcome of the forum:

To provide input and  
recommendations to the ministries  
on how to enable and facilitate  
electrification in the Nordics from  
our expert perspective



# Our approach

Online kick-off  
February 3

Introduction to  
purpose and sharing  
of questions for stake  
holders

Alignment &  
dialogue within  
stakeholder  
organizations

Input from stakeholder  
organizations

6 answers from individual  
associations/companies:

Elfi, Lahinenenergia, Gen2Energy, Hydrogen  
Cluster Finland, Nasdaq, Norwea and Wind  
Denmark

2 Nordic answers  
Nordenergi and the Nordic TSOs

Stakeholder Perspective	Country	Organisation	What are the no-regret actions/recommendations for electrification from your perspective?	What needs to be done on the Nordic level, and what needs to be done on the national level impacting the Nordic level?	What needs to be done on the Nordic level, taking into account developments in the EU?	If you want, try to think what the no-regret actions would be from other perspectives i.e. if you represent consumers, what would a producer or a TSO representative propose.
Consumers	FI	Elfi	safe investment environment and "one desk regulation" to the manufacturing, grids and power production	new grid investments to the permanent bottlenecks Implement EU regulation facilitating energy communities, requirements for grid connectivity and net metering of small scale production to facilitate take of distributed RES, at national level in the Nordics digitalization of energy market IT systems that enable the markets, i.e. Databases for realiability etc. Nordic countries are at	Implement EU regulation facilitating energy communities, requirements for grid connectivity and net metering of small scale production to facilitate take of distributed RES	
Producers, suppliers, distributors	FI	Finnish Clean Energy Association	market based energy retail and wholesale markets. Increase the amount of distributed (small scale) RES production. Improve the cooperation between the gas/hydrogen TSO and the electricity TSOs. Apply EU regulation.	Joint Nordic energy transition planning. Joint planning to ensure alignment between countries to coordinate power supply, grid and flexibility development to meet the rise in power demand from an electrification driven energy transition with clean energy. Identifying unique Nordic opportunities. Low-carbon firm capacity from hydropower and nuclear, coupled with cost competitive offshore wind and rising scope for offshore wind can facilitate the creation of power to hubs and continued expansion of energy intensive industry. Facilitating the carbon neutral customer. Customers should be rewarded for choosing electric over fossil fueled solutions, and for adapting consumption to support the power system. Creating a cost efficient transition to carbon neutral electricity with a holistic view of the energy system and the uptake of smart management that simplify the use of flexibility should be a key focus of policy.	At Nordic level, joint Nordic strategy to promote electrification of transport in combination with hydrogen use in heavy, long haul road transport, aviation and maritime transport. Joint Nordic strategy for a hydrogen infrastructure with focus on an emerging hydrogen market. Common rules for flexibility markets. 2 Nordic TSOs have harmonized terms for the participation of aggregated resources. Real time data is readily available regarding balancing, most important the balancing price and more of the balancing process is automated. A shared Nordic holistic planning approach to electrification strategies. Common	On Nordic level we need to be fore-runners and push for European legislation promoting electrification. The EU ETS ensures that decarbonization is done in the most cost efficient way for society and Nordenergi therefore support expanding the system to other sectors, but it is also important to maintain the system's robustness. For sectors not included in the EU ETS, a carbon price signal is necessary to facilitate a cost efficient transition to a carbon neutral economy.
Hydrogen	NO	Gen2Energy				
Producers, suppliers, distributors	NORCIC	Nordenergi	Broad cooperation across all energy sectors and stakeholders Adequate infrastructure for effective markets and renewable energy sources Flexibility in consumption, energy storage and generation for balancing and congestion management			



# Our approach

## Online kick-off

February 3

Introduction to purpose and sharing of questions for stake holders

## Alignment & dialogue within stakeholder organizations

Input from stakeholder organizations

## Processing of input

First clustering by coordination group  
→ long-list of recommendations.

Review of framing and introduction to recommendations by EMG

Long-list is shared as pre-read

### How did we go from the stakeholder input to the longlist?

- Identified common ground between all the answers in the clusters
- Picked up the most common recommendations
- Occasionally «re-adressed» them to the ministries (as opposed to the TSOs, NordREG or the exchanges)



# Our approach

## Online kick-off February 3

Introduction to purpose and sharing of questions for stakeholders

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## Lunch-to-lunch event 18. – 19. May, Helsinki

### Day 1

- Insights from various perspectives on Electrification
- Presentation of long-list
- In break-out groups: Selection of most important recommendations from the long-list.
- Plenary sharing of first round of selected recommendations.

### Day 2

- Plenary presentation of combined outcome.
- In break-out groups: Reflection around outcomes





# Presentation of the Draft Recommendations



# Eight suggestions for recommendations

Joint Nordic  
energy transition  
planning

Facilitating the  
carbon neutral retail  
customer

Improve price signals  
for investment  
purposes

Develop a common  
Nordic strategy for  
power to X

Promote unique  
Nordic strengths in  
Europe

Promote joint  
Nordic long term  
grid planning at  
ministry level

Think local and  
facilitate investment  
in small  
scale/distributed RES  
production

Invest in Offshore  
Wind Production  
and Grids



# A closer look at one suggested recommendation...

## Joint Nordic energy transition planning

The reality of a synchronous Nordic electricity grid and an integrated Nordic electricity market makes common planning of the energy transition a necessity.

Example of actions:

- A shared Nordic holistic planning approach to electrification strategies for example through Nordic coordination of the EU mandated NECP processes
- Coordinated Nordic target(s) for security of supply and harmonized methodology in the possible event of shortage situations



## Let's get to work!

In smaller groups, we ask you to **select a few** recommendations that you see as especially vital for promoting and enabling electrification in the Nordics (aim for five).



## Practical instructions

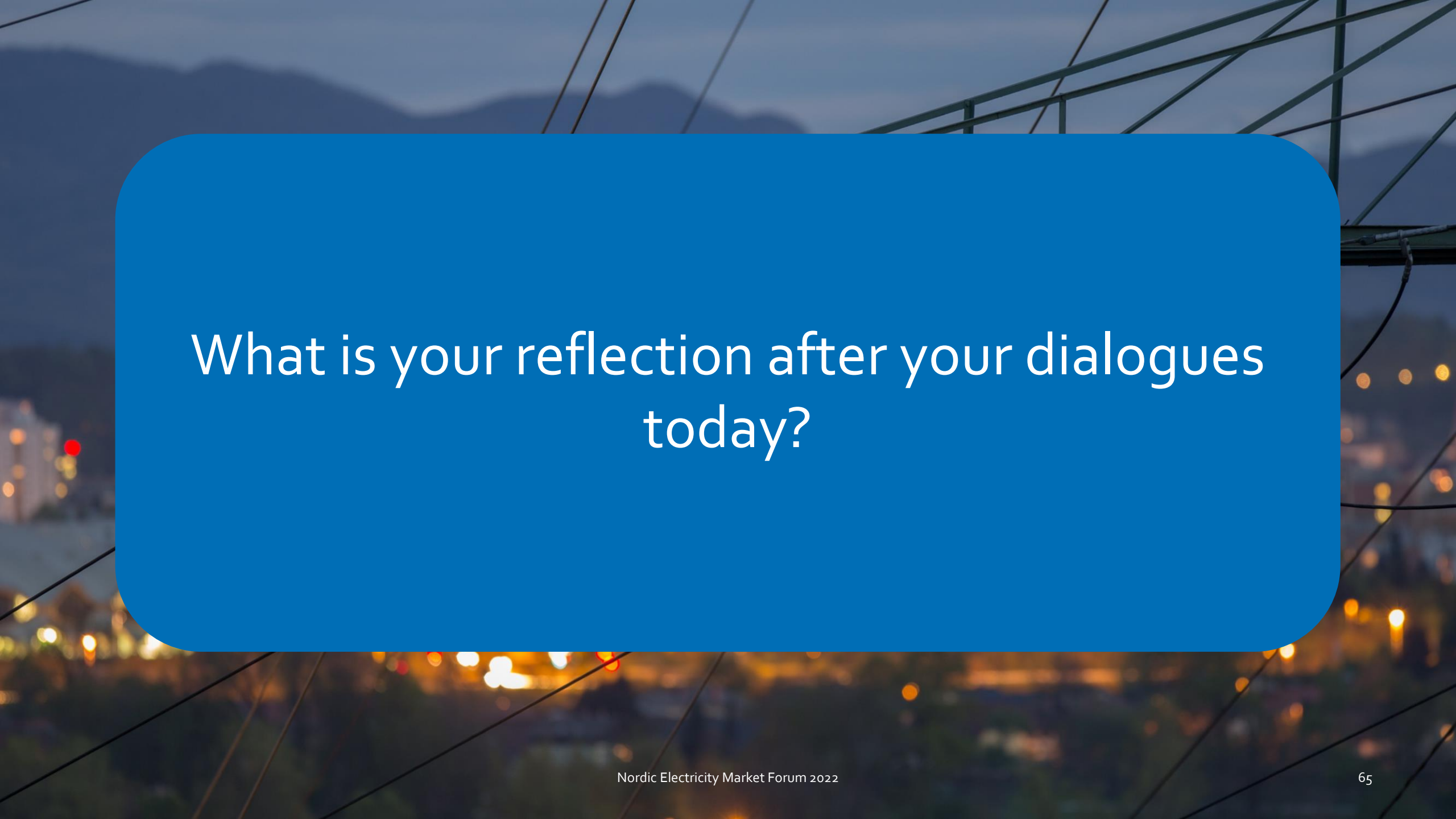
Dialogues in smaller groups for 60 minutes

We encourage you to focus on selecting the between the high-level recommendations, but you are free to add your comments

Your group number is marked on the back of your name tag.



# Plenary session: Sharing of outcome from group dialogues



What is your reflection after your dialogues  
today?

# Our approach

## Online kick-off February 3

Introduction to purpose and sharing of questions for stake holders

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Nordic Council  
of Ministers

Nordic Electricity Market Forum  
Helsinki, 2022

# Welcome to day 2 of the Nordic Electricity Market Forum



# Agenda May 18-19, 2022

## May 18, 2022

- 11.00**     **Arrival Lunch**
- 12.00**     **Welcoming words and opening of forum**  
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# Interactive session: Creating our expert advice & recommendations Pt. 2





**Step 1:** Plenary review of aggregated outcomes

**Step 2:** Reflection in break-out groups

**Step 3:** Plenary sharing and conclusions



# Summary, suggested approach, slide package



# Presentation of outcomes - conclusions



*If there is alignment*

In same groups as yesterday,  
share your  
Individual reflections from  
seeing the combined outcome  
of the entire forum.

*If there isn't clear alignment on  
recommendations*

In same groups as yesterday, share  
your individual reflections from  
seeing the results of the entire  
forum.

Please discuss and document a few  
key aspects to observe in order to  
progress in the high-lighted areas.





# Plenary session: Sharing of outcome from group dialogues

# The EU perspective on electrification

## EU commission - Catahrina Sikow Magny



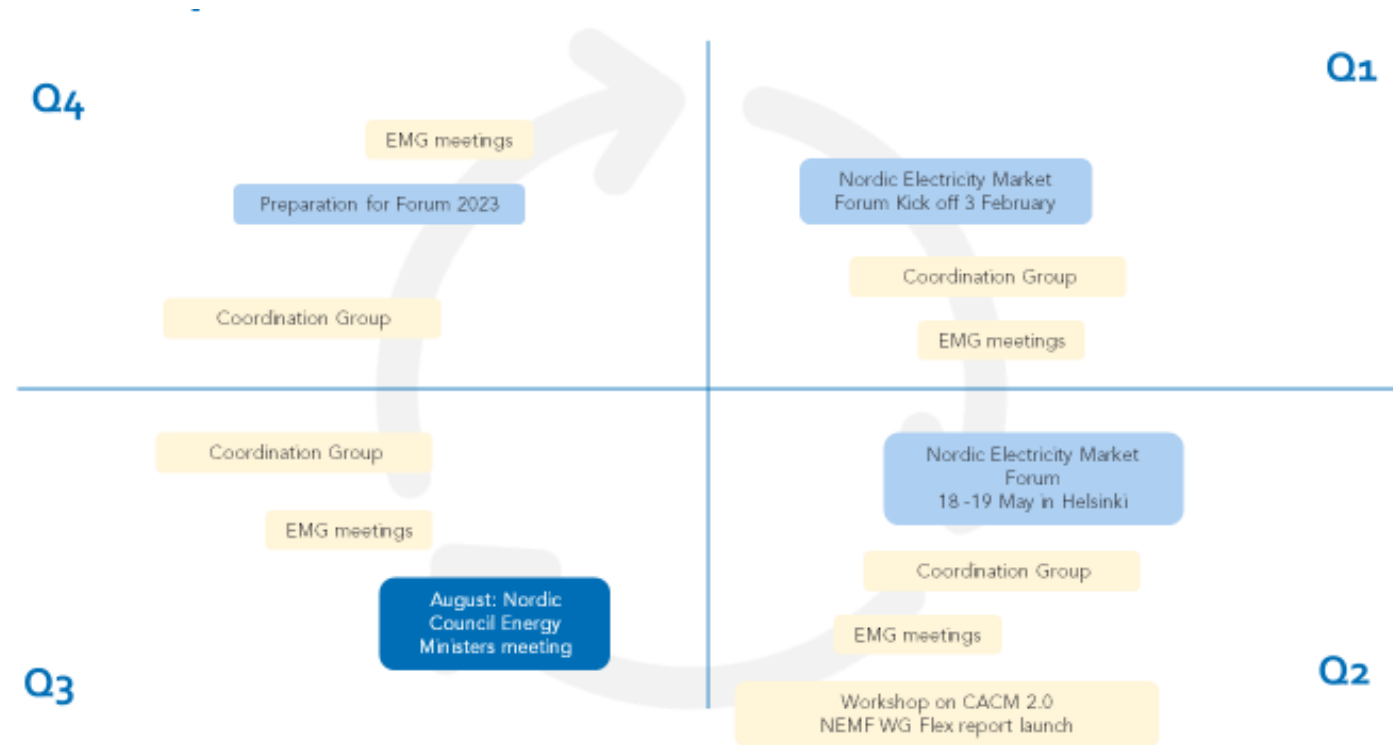
# Wrap-up and closing of forum

Tatu Pahkala  
EMG Chair



# Next steps – what happens now?

- Flexibility group landing
- CACM workshop
- Forum – what is happening after with the recommendation, when can they expect to hear from
- Preparation for next years forum – share your thoughts and input on topics and content with us!







**What is your main take  
away from the Nordic  
Electricity Market  
Forum 2022?**



# Thank you for you participation!



Nordic Council  
of Ministers

Nordic Electricity Market Forum  
Helsinki, 2022