

Sustainable jet fuel for aviation

Welcome remarks:

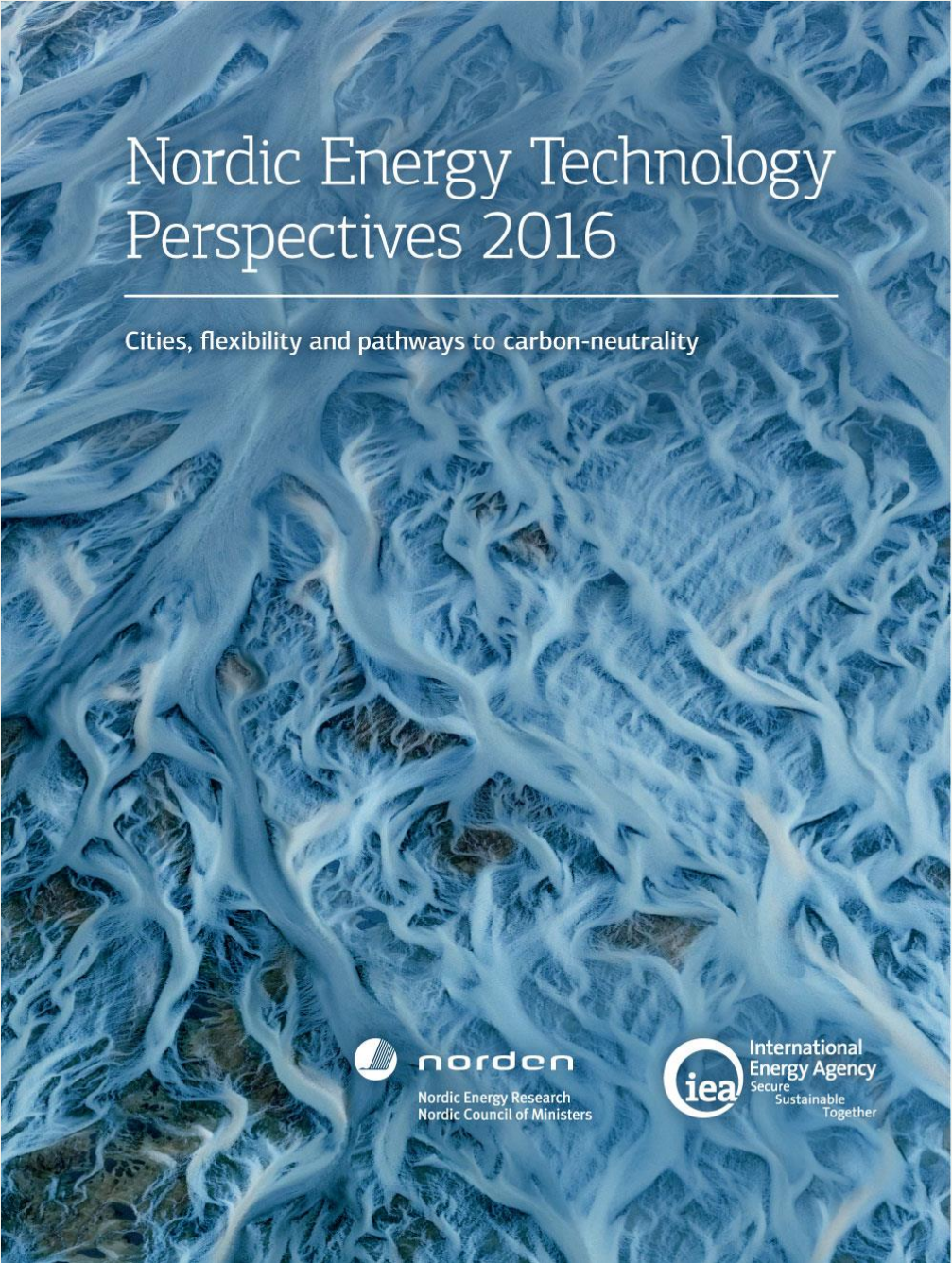
Hans Jørgen Koch, Director NER

Norwegian Research Council, Oslo 1st September 2016

Nordic Energy Research – established 1975

1. Platform for cooperative energy research
2. Fund R&D to promote sustainable and low-carbon energy solutions
3. Contribute to Nordic policymaking
4. Conduct energy analysis

Nordic added value



Nordic Energy Technology Perspectives 2016

Cities, flexibility and pathways to carbon-neutrality



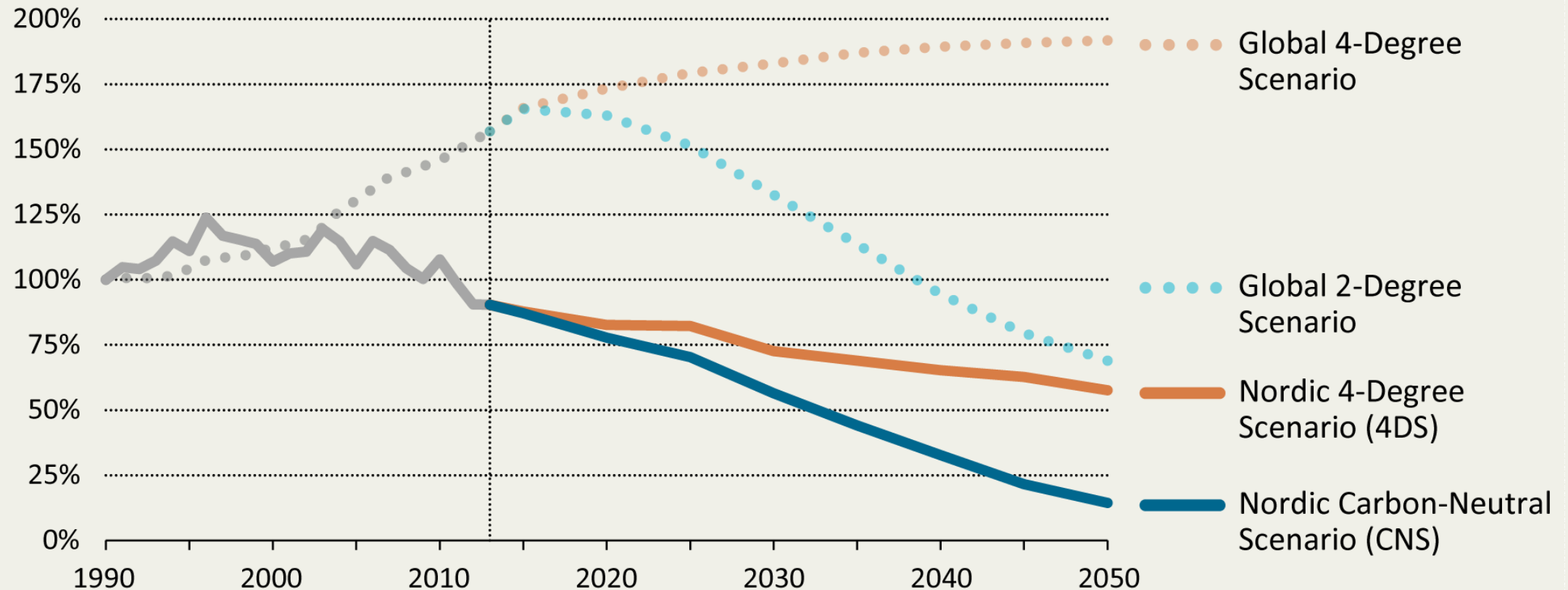
What is NETP?

Scenario for an energy-efficient and low-carbon Nordic society in 2050.

NETP 2016 - Three strategic actions

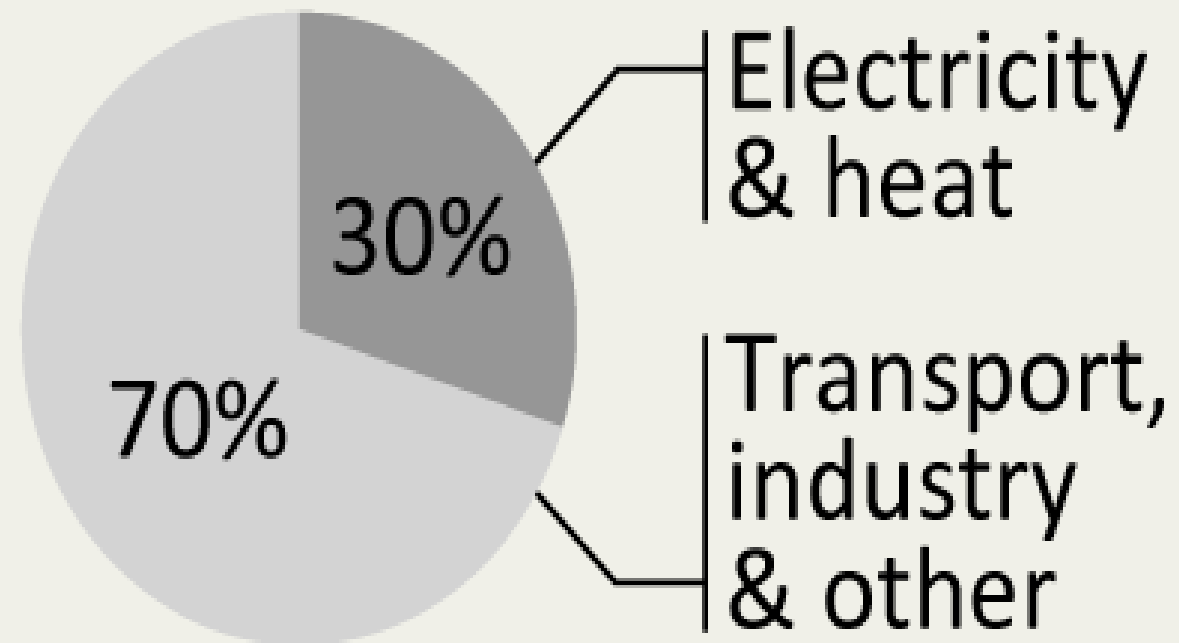
1. Incentivise and plan for a more distributed, interconnected and flexible energy system
2. Tap into the positive momentum of cities in transport and buildings
3. Ramp up decarbonisation of **long-distance transport** and the industrial sector

Global and Nordic scenarios in CO₂ emissions

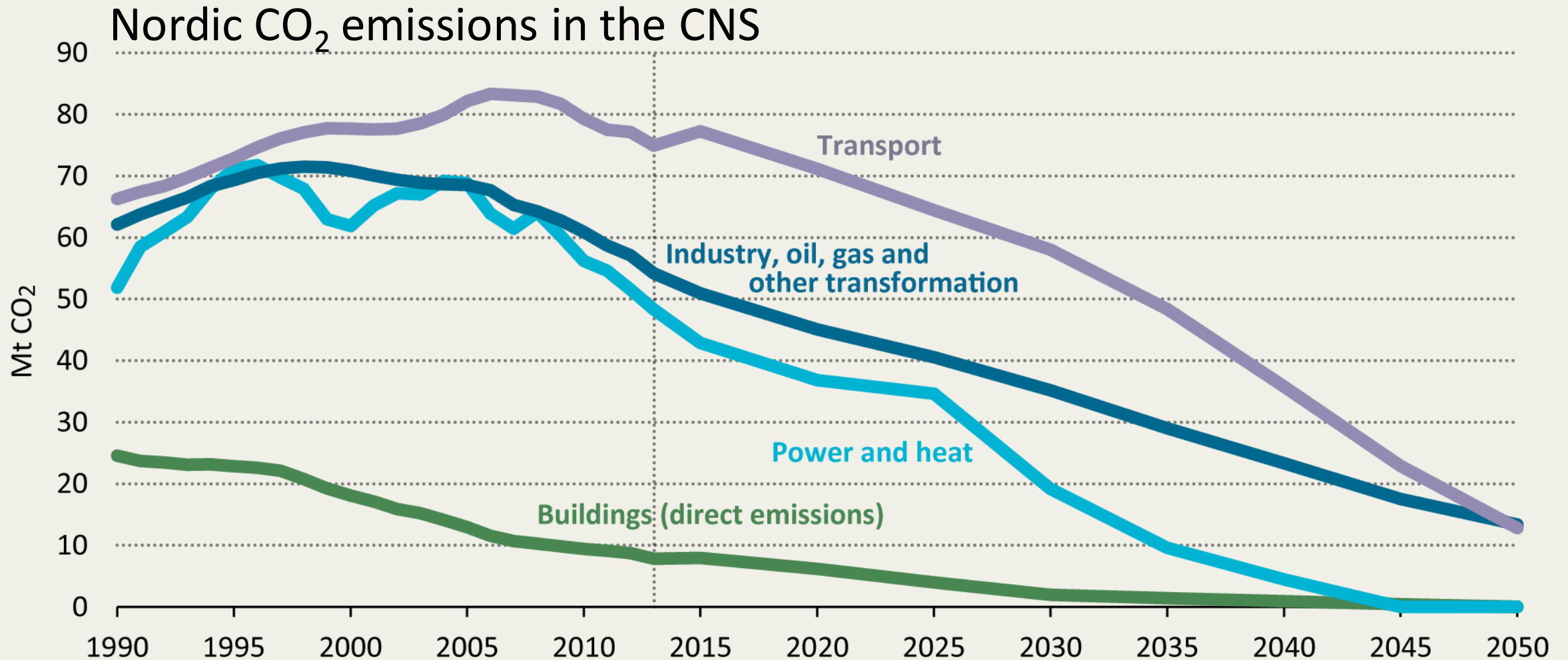


In the Carbon-Neutral Scenario (CNS), Nordic CO₂ emissions drop by 85% in 2050 compared with 1990 levels

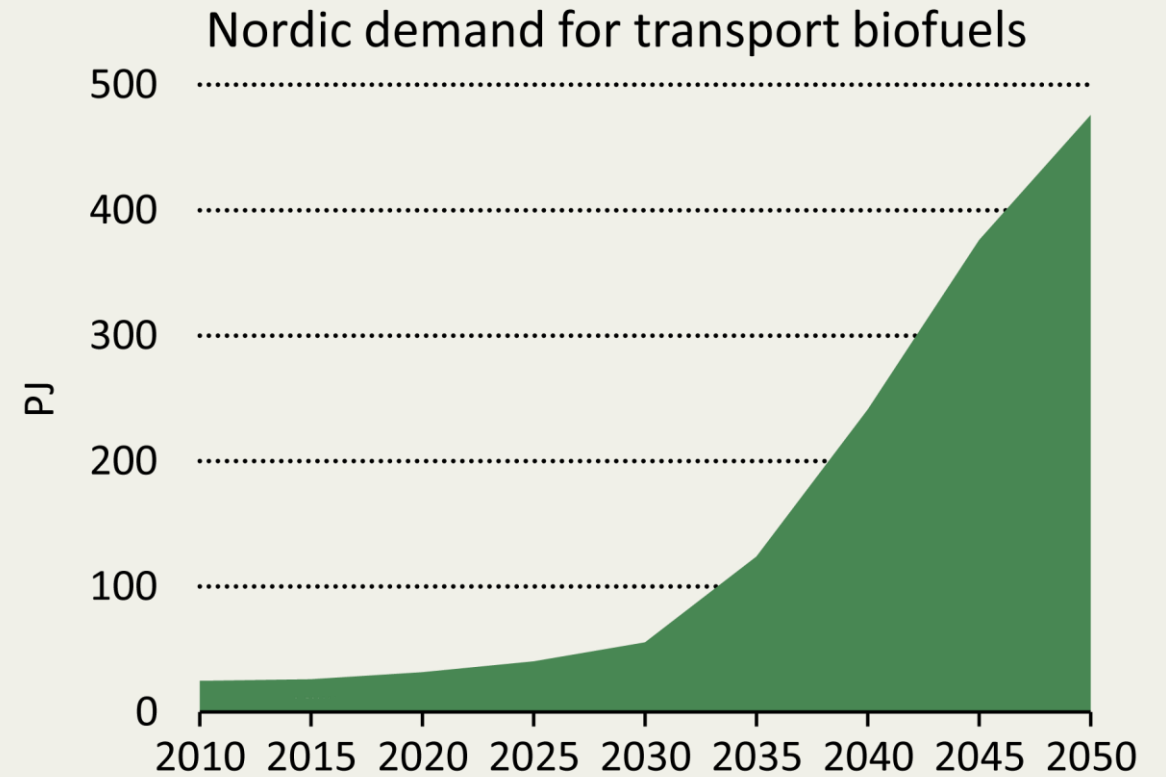
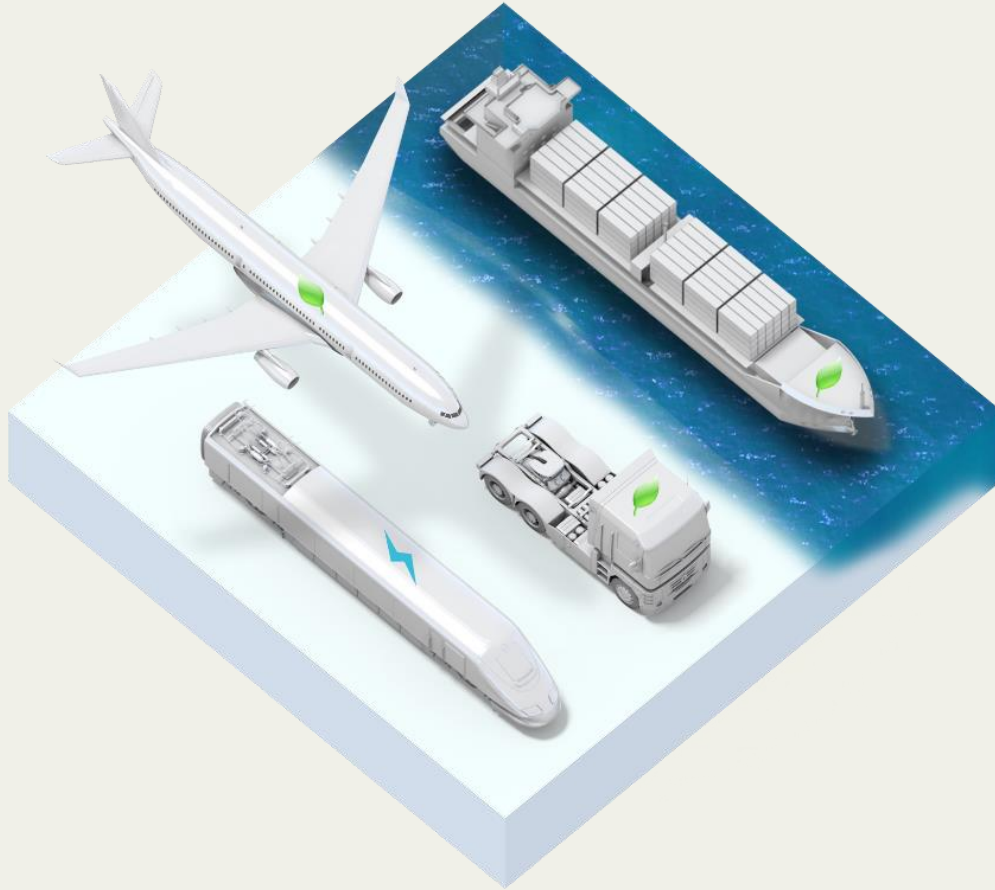
Nordic CO₂ from energy



Demand sectors most challenging

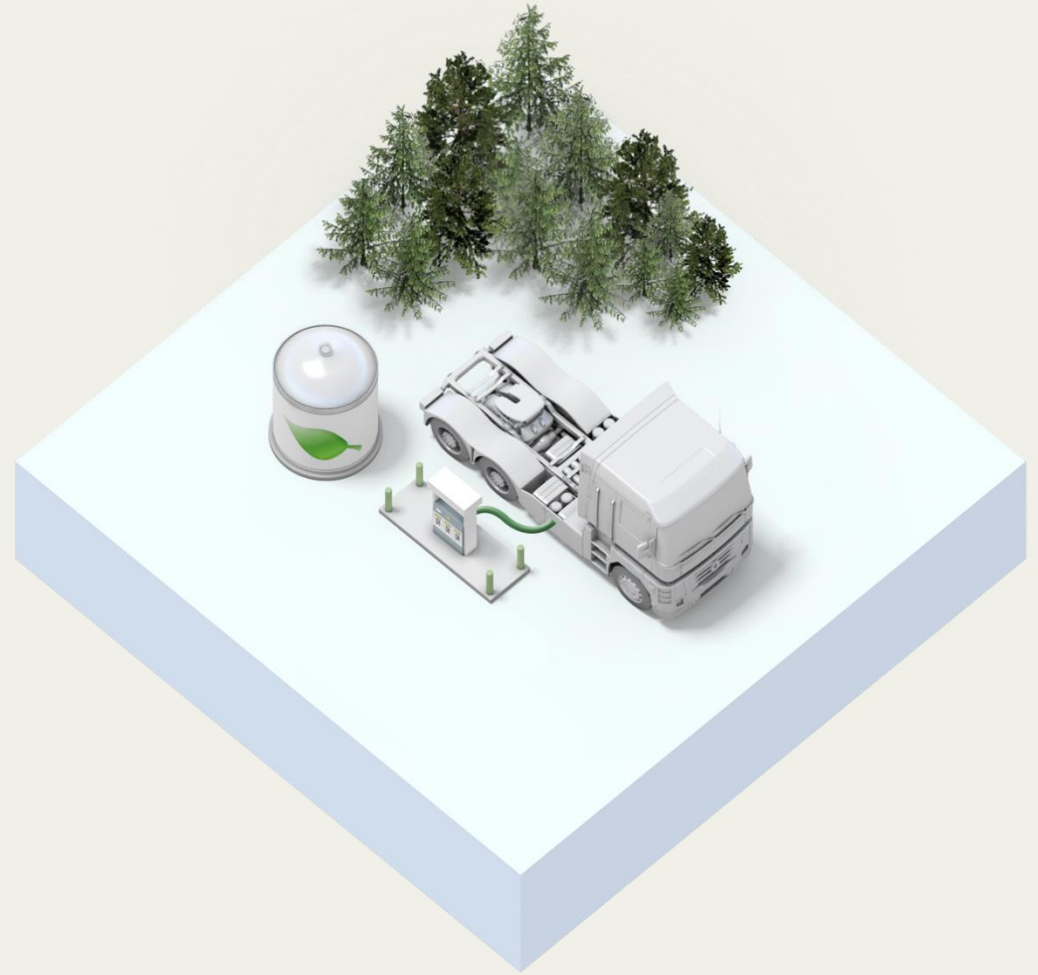


Long-distance transport



15%

import dependency
for biomass in 2050,
up from 8% in 2013





A doubling of biomass output from
Nordic forests is possible

Enerwoods project (SES 2050)

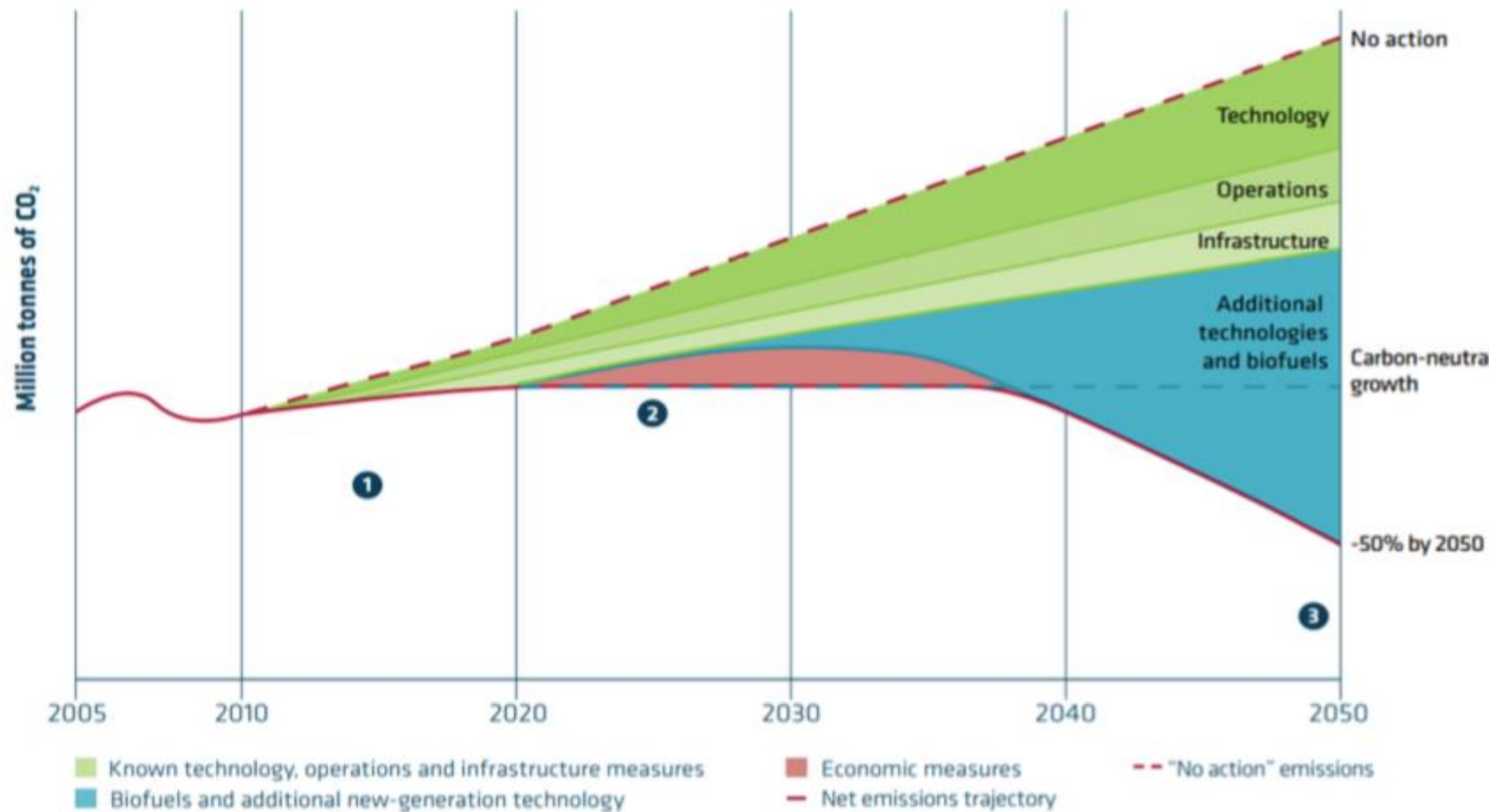
Actions

1. For national (and Nordic) policy makers

1. Public-private collaboration

2. International collaboration

Figure 1. Mapping out the industry commitments



Source: ATAG, 2013

Welcome



Recommendations to national policy makers

- Targeted strategies are needed to kick start and develop a market for sustainable fuel alternatives in the Nordic countries.
- Tie economic benefits to the use of sustainable jet fuel in order to reduce the cost differential.
- **Prioritization of national biomass resources into sectors.**
- Specific targets for the share of RES in aviation on global, European and Nordic level in order to **create streamlined incentive structures.**
- Co-processing with existing facilities, especially oil refineries.

Enhancing public-private collaboration

1. Realize specific production pathways with a strong lead partner.
2. Promote collaboration between the forestry industry and R&D institutions to utilize by-products and raw materials.
3. Assist start-up companies in the sustainable jet fuel value chain.
4. **Increase transparency and lower the risk** in investing in sustainable business models.
5. Explore new, sustainable business models for sustainable jet fuel supply chains to lower risk.
6. **Loan guarantee mechanism** for producers of sustainable jet fuels, in order to secure transition investment capital.

Recommendations for international collaboration

1. Promote incentive structure for the use of sustainable jet fuel.
2. Promote globally applicable standards for sustainability.
3. Explore how to develop globally accepted mandatory blending levels.
4. Streamline ASTM acceptance processes of new pathways

Panelists

- Ove Myrvold, SAS
- Sari Tasa, Finnish Ministry of Economy and Employment
- Olav Mosvold Larsen, Avinor
- Virpi Krøger, Neste Oil
- Anne Grete Holmsgaard, Biorefining Alliance

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