



Norsk Industri
Federation of Norwegian Industries

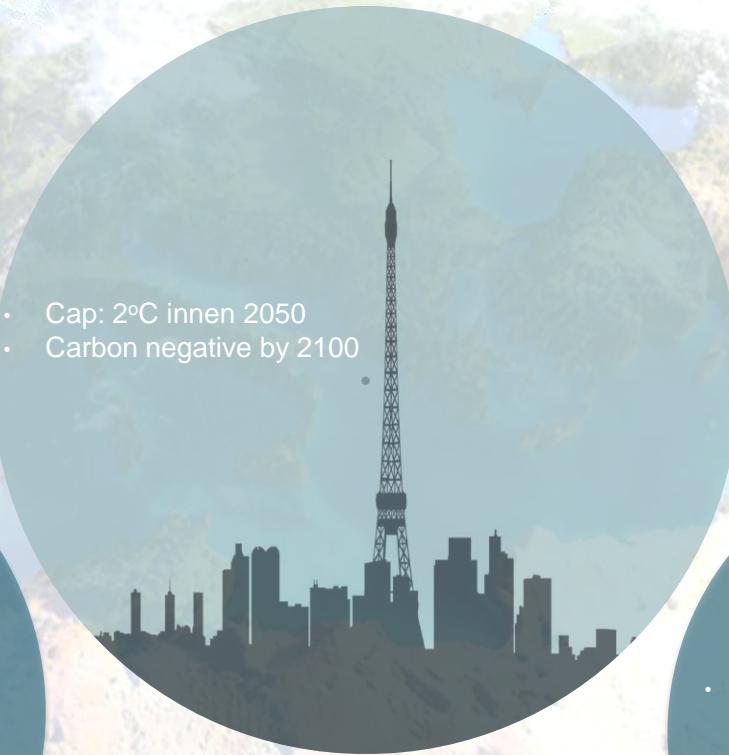
Roadmap for Norwegian Process Industries

- combining growth and zero emissions by 2050

2050

Global

- Population: 9 billion
- Higher consumption
- Higher demand for energy
 - Scarce resources
- Technological breakthroughs



National

- Access to renewable energy
- Stable economic and political framework conditions
 - Norway an attractive host nation
- Authorities support industries' efforts to develop new technology and new products

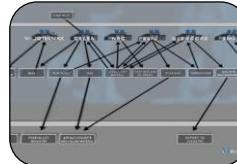
Process- and product development



BALI – biochemical
and bioethanol



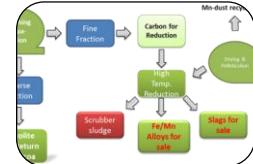
Aluminium in
transport



Systemized circular
economy



Energy efficiency
Karmøy



Waste-to-Value



Quartz for climate-
friendly
technologies



CCS Norcem



CCS Yara



Bioethanol
production



Hydrogen as
reductor



Microfibrillar
cellulose



New aluminium
products



Lignin in concrete



Biocarbon in ferro-
alloys



Cement with flyash



New copper-based
electrolysis
technology



Silicone, heat,
power and salmon
in Finnfjord

Two alternative pathways:

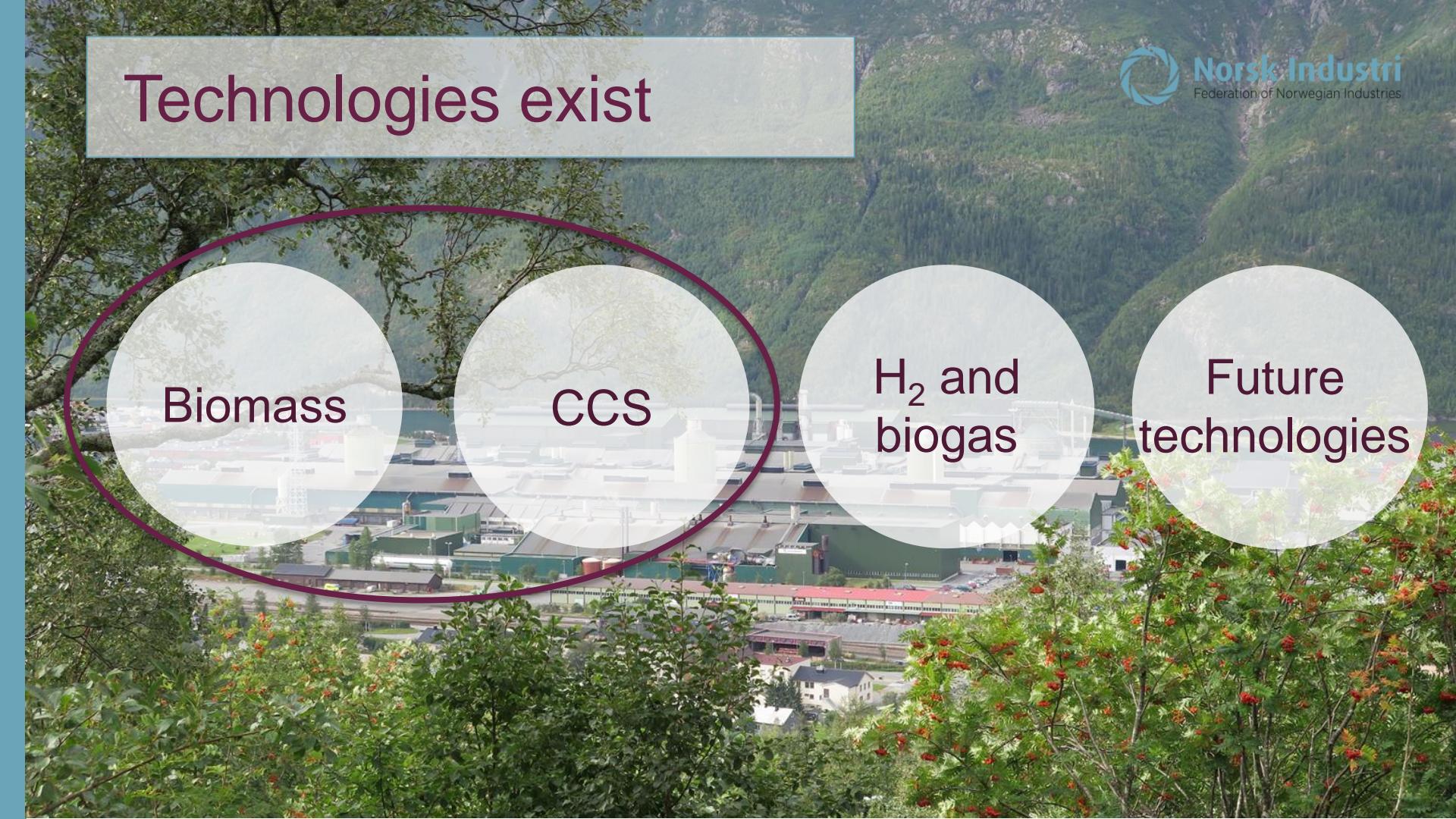
ALT.1

Stricter climate regulations push some Norwegian industries out of market.
Norwegian phase-outs replaced by new industry in areas with lax climate regulation.

ALT.2

Norway fortifies its position through investments in new climate technology, new processes and new products.
Higher value-added and zero emissions.

Technologies exist



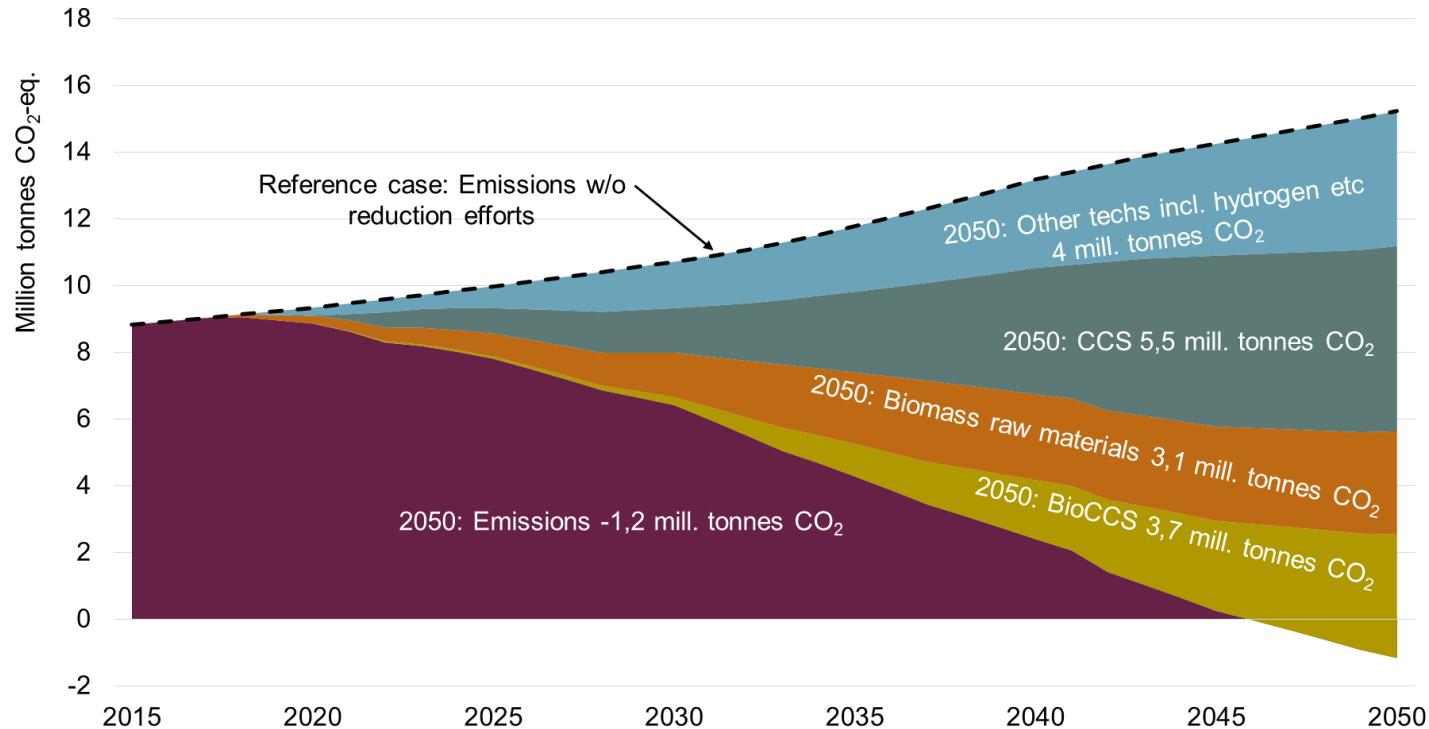
Biomass

CCS

H₂ and
biogas

Future
technologies

Emissions and emission reductions by technology



The Roadmap

The image is a collage of several industry-related infographics and logos. It includes:

- The logo for Norsk Industri.
- A map titled "VEIKART FOR PROSESSINDUSTRIEN" showing industrial clusters along the Norwegian coast.
- A bar chart titled "PROSESSTYKKE I MILLIONER" comparing energy consumption across different industries.
- A diagram titled "METALLPRODUKSJON METAL PRODUCTION" showing the carbon footprint of metal production.
- A graph titled "CO2-UTSLIPPEN I INDUSTRIEN" showing CO2 emissions from industry.
- A circular diagram showing the relationship between energy efficiency, climate protection, and industrial competitiveness.
- Logos for SINTEF, SINTEF Energiteknologi, and SINTEF Energi.
- Logos for Norsk Hydro, Equinor, and Statoil.
- Logos for the University of Oslo, NTNU, and SINTEF.
- Logos for the Ministry of Petroleum and Energy, the Ministry of Climate and Environment, and the Ministry of Trade, Industry and Fisheries.