H2 Cluster annual meeting

ULF ERIKSEN, VP HYDROGEN NORDICS,
30 JANUARY 2024

Our Vision

Renew the way the world is powered

We act responsibly

We grow together

We make an impact

Safety moment | US incident

AB Specialty Silicone Facility Illinois

- A hydrogen release, explosion and fire in summer 2019
- Estimates as low as **18 kg** of hydrogen ignited
- The explosion destroyed the facility's production building
- Five other buildings in the area of the plant where damaged
- 4 people where killed in the incident
- For the Mo plant - it would take around **4 min** to produce this volume of H2

What happened

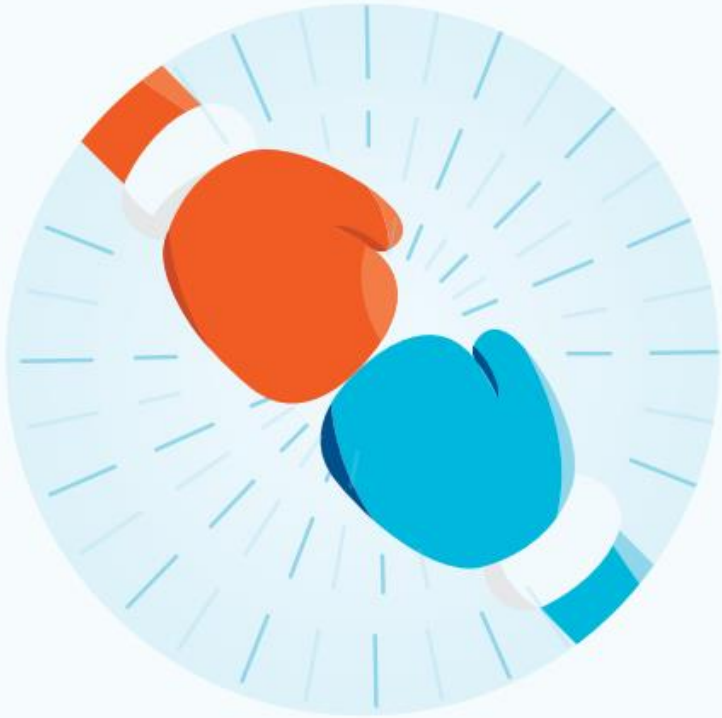
- The root cause was incorrect chemical mixing
- The ignition source was never understood
- Investigation identified a weak process safety culture
- It also pointed to a lack of implemented engineering controls
- The company where fined nearly **$2 million** in 2022
- The company was placed on the Severe Violator Enforcement Program

Agenda

- **Market background - Low Emission Scenario**
- Statkraft's strategy and projects

Three scenarios in the 2023 Low Emission report:

1. Low Emissions Scenario

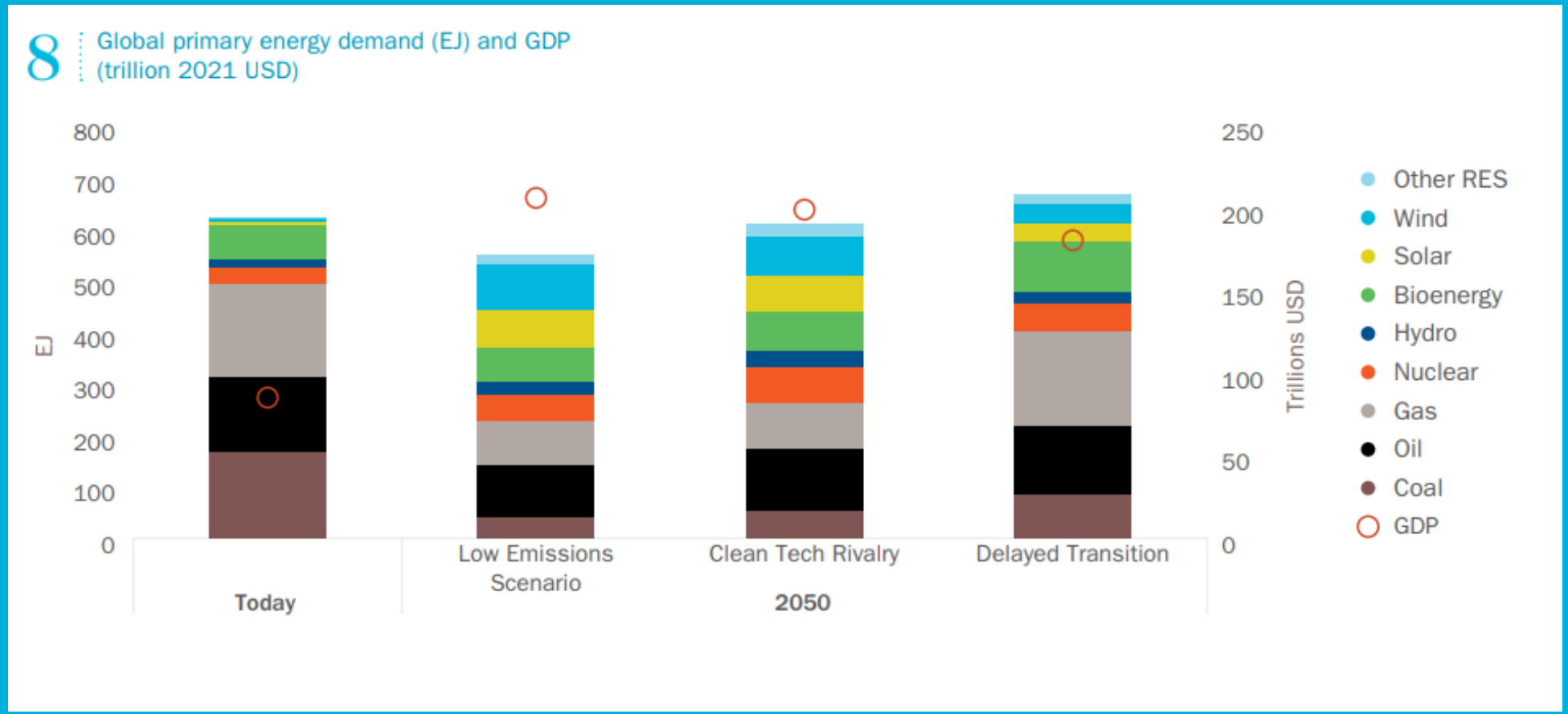


2. Clean Tech Rivalry Towards Net Zero

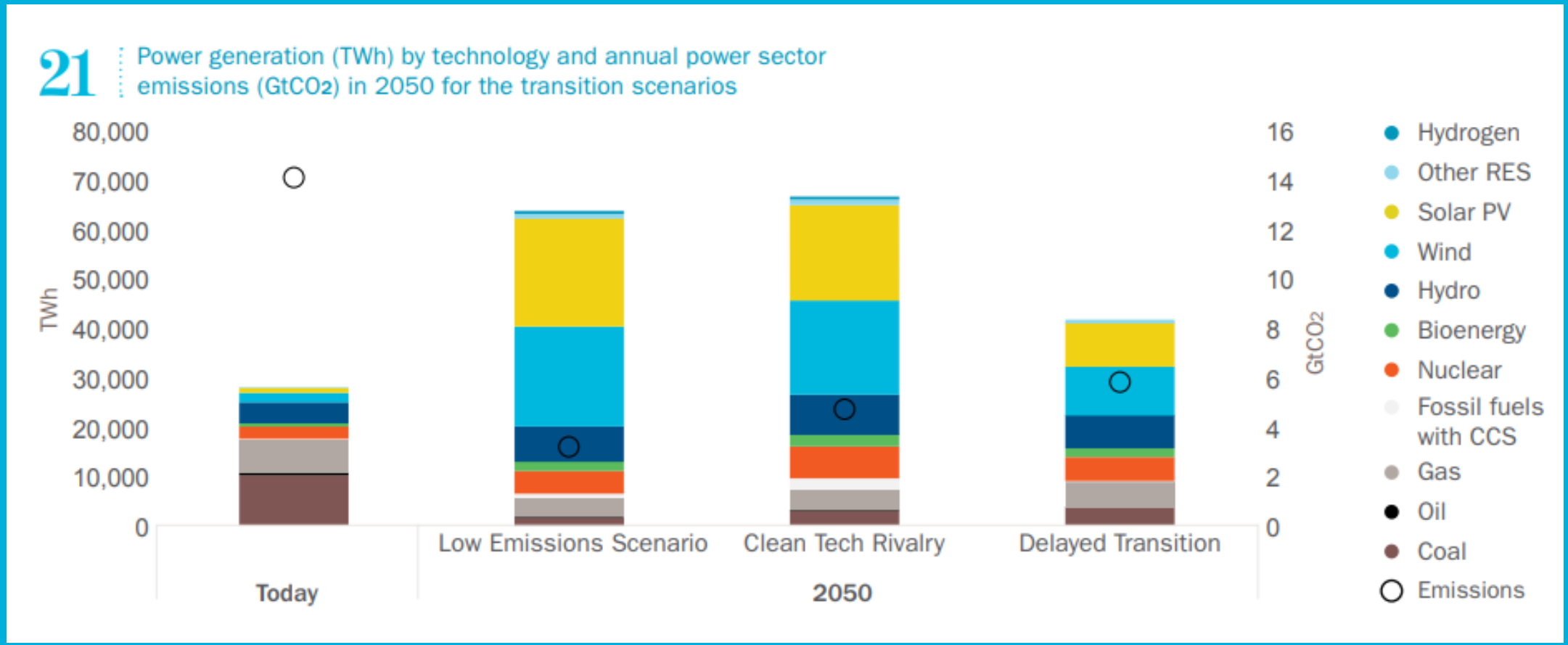
3. Delayed Transition

Statkraft

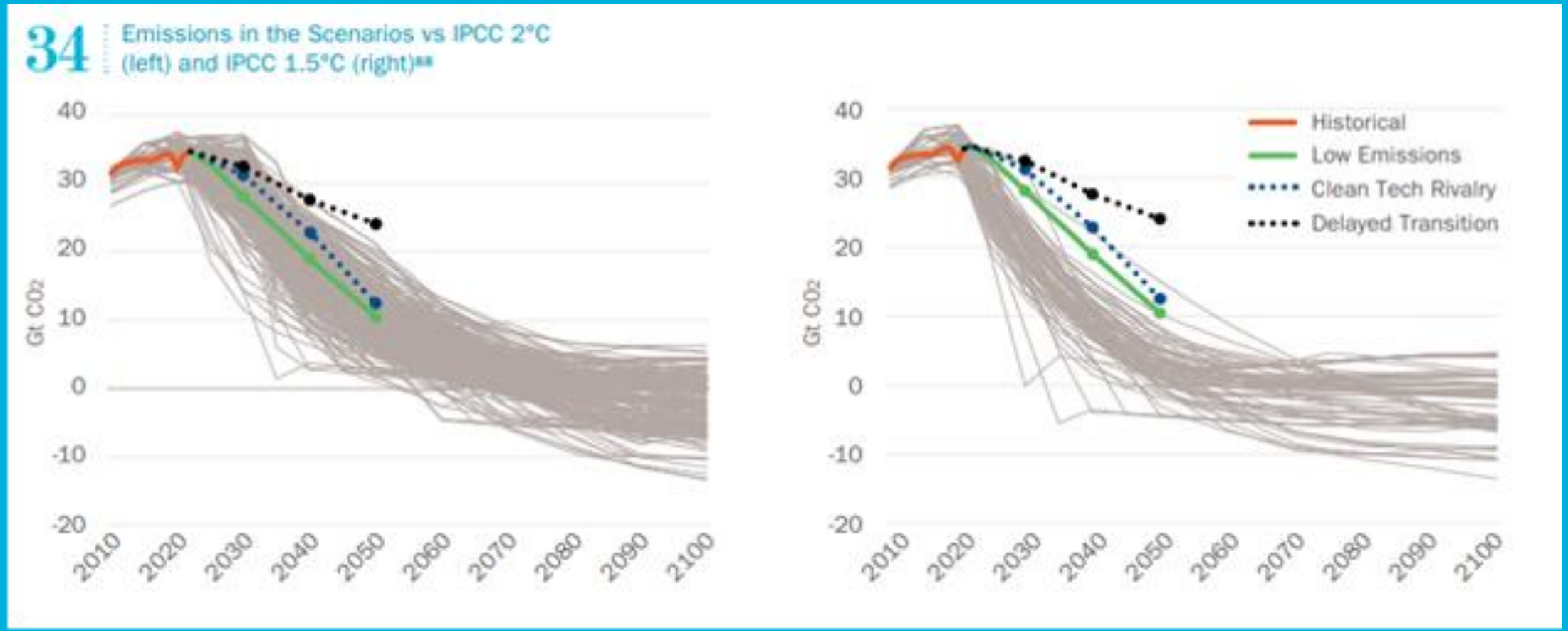
Primary energy use declines to 2050 in LES



Power generation more than doubles in LES, but lower growth in Delayed Transition – needs support



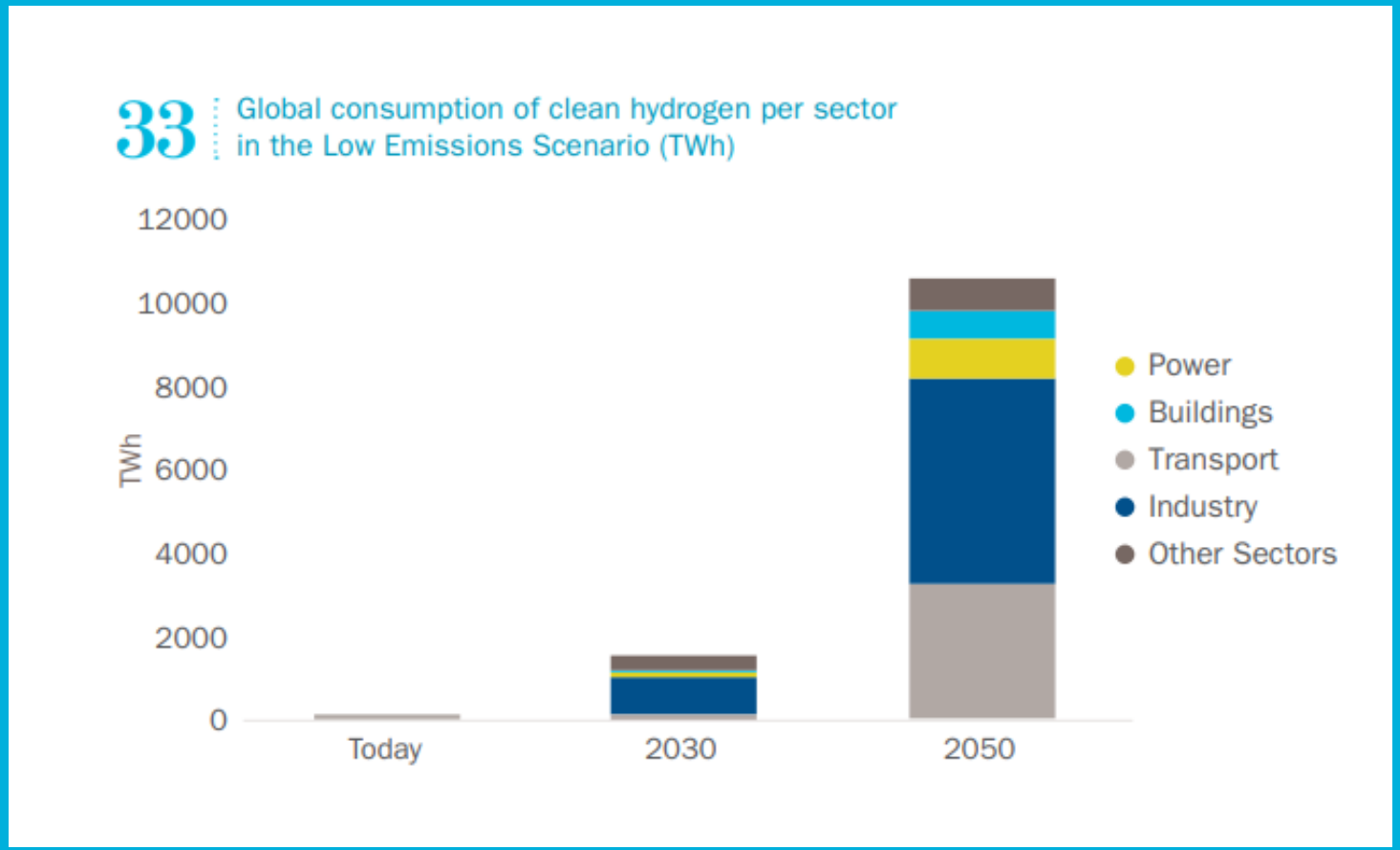
Emissions in the 3 scenarios compared with 1.5 and 2 degrees



Future use of clean hydrogen

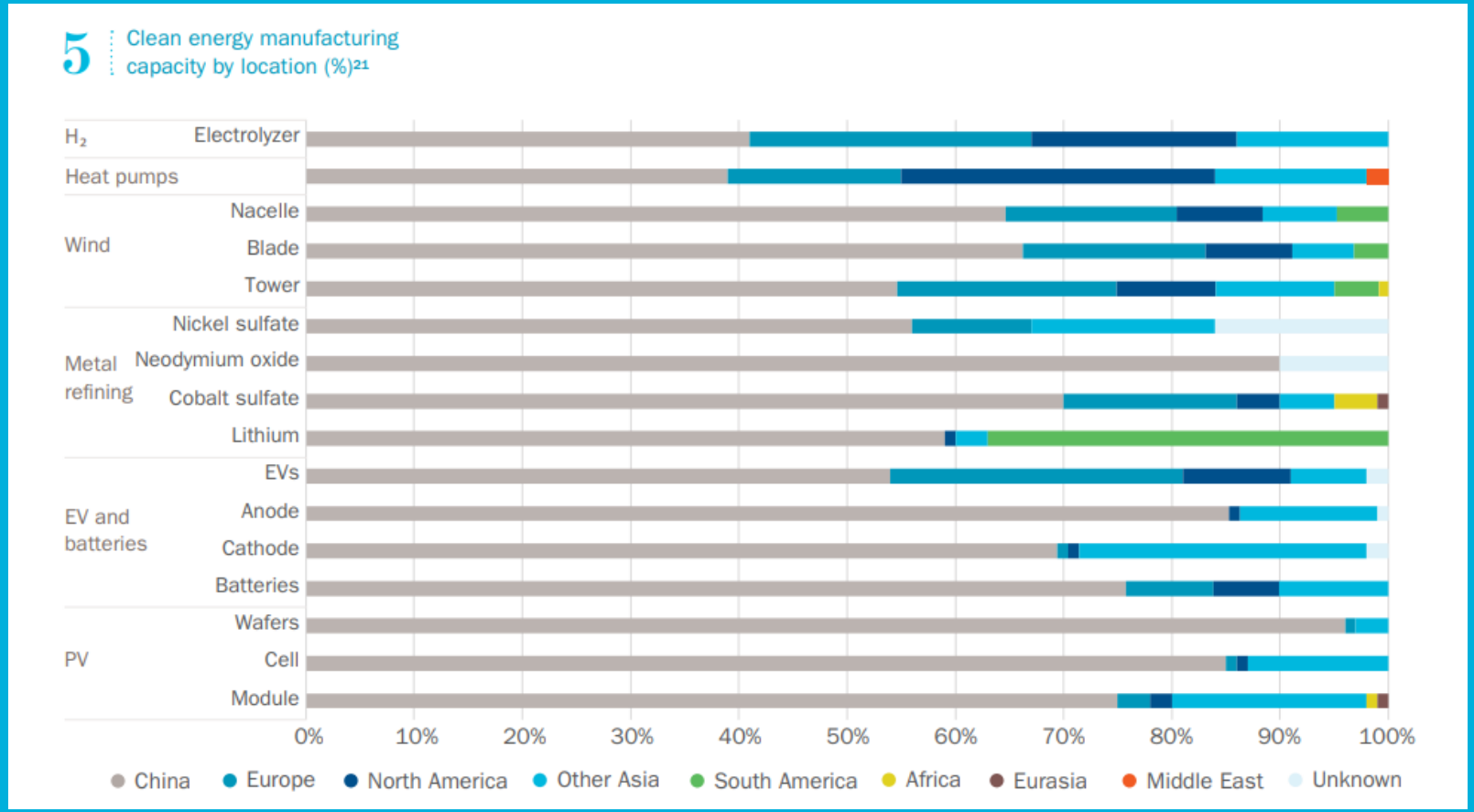
Statkraft

Substantial hydrogen volumes in 2050, increase from last year, but slow start and mainly industry first

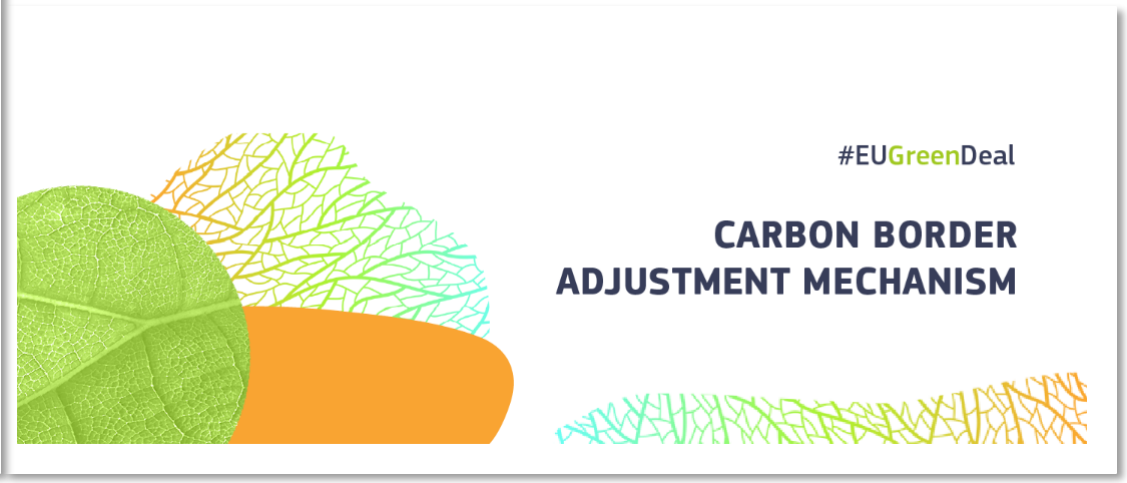


Challenges in developing hydrogen

- RES-development
- Grid
- Supply chain
- Funding



UK, USA and EU with strong drive to deploy hydrogen



Statkraft

Agenda

- Market background - Low Emission Scenario
- **Statkraft's strategy and projects**

Statkraft's activities

Capacity

19 105 MW

60 TWh → **97%** renewable

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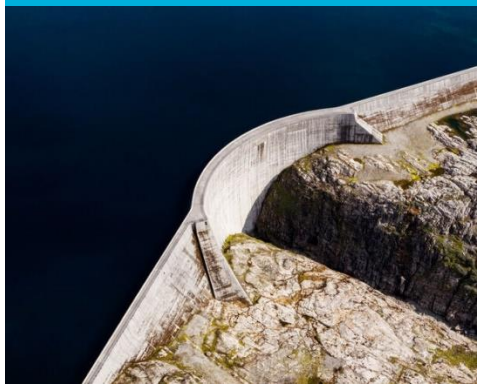
Employees

5 700

Statkraft

Creating value by enabling a net-zero future

Provide clean flexibility – leveraging hydropower



Accelerate solar, wind and battery storage

Deliver green market solutions to customers

Scale new green energy technologies

Statkraft

Statkraft aims to become a leading green hydrogen player in Norway and Sweden, and to establish an industrial position in selected Statkraft markets

Our role

We aim to **develop-build-own-operate** hydrogen and green fuel production

Our target

2 GW FID by 2030

Our hydrogen target markets

Our target sectors

Industry Maritime Transport

Selected projects

Norway
- Narvik
- Mo i Rana
- Hardanger

Sweden
- Port of Gothenburg
- Green Industry

Germany
- Emden I &II

UK
- Welsh Transport
- Grenian
- Shetland eFuels

Emden

Hydrogen for transport

Planned COD 2026/27

10 - 200 MW capacity

Hydrogen Hub Mo

Green steel and hydrogen hub

Planned COD 2026

20 MW initial capacity

Cheshire green

Hydrogen for green glass manufacturing

Planned COD 2027

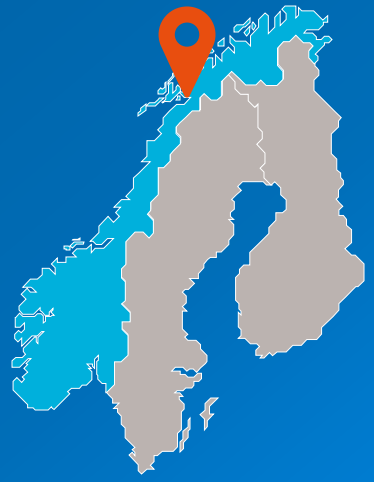
30 MW capacity

Narvik

Green ammonia and hydrogen hub

Planned start 2028/29

430-600 MW capacity



Statkraft

Hydrogen Hub Mo

Green steel and hydrogen hub

Mo Industripark as

nel

CELSA GROUP | CELSA NORDIC

Statkraft

H_2

20-40 MW

Initial capacity, potential 340 MW

- **High-temperature heat for reinforcement steel**
- **Hub with industry, maritime and land transport**

2026

Planned start

Narvik Ammonia Company

Green Ammonia Production

AKER HORIZONS

Statkraft

H_2

430-600 MW

Ongoing dialogue with Statnett

- **DG1 approved end of June 2023**
- **Concept selection phase (technical and commercial) kicked-off with Aker**
- **DG2 scheduled for summer 2024**

2028

Planned start

Statkraft

statkraft.no