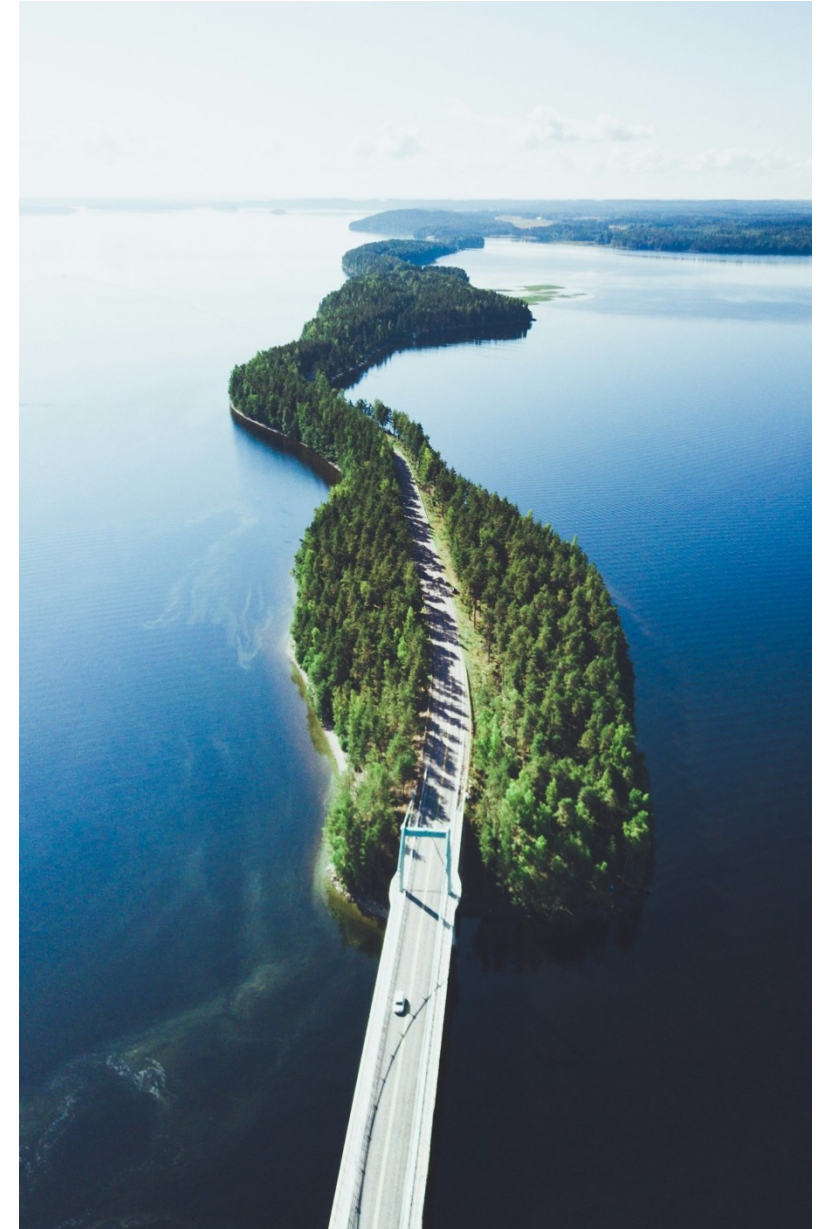


Europe's Hydrogen Economy Implementation Strategy and Key Initiatives – Harjavalta 20 MW Green Hydrogen Commercial Project

P2X Solutions – a pioneer in hydrogen and synthetic fuels

- A Finnish company founded in 2020 by experts of the energy market
- Produces and distributes hydrogen and synthetic fuels such as e-methane, e-methanol
- Green hydrogen is produced from renewable electricity and water
- P2X Solutions' first 20MW green hydrogen production plant has been in commercial operation since February 2025
- Aiming for 1 GW of hydrogen production capacity in the early 2030s
- Swiss energy company Alpiq became the main owner of P2X Solutions in April 2024



Climate change is inevitable

- On last ten years we have spent globally 2000 billion dollars on nature catastrophes
- Price of one nature disaster (fire, flood, storm) is 75-100 mrd€
- The EU Commission estimates that natural disasters will weaken GDP growth by 1% now (up to 7% in individual countries) and by 2.3% in 2050
- 14,000 people have died of heat in Germany this summer
- In California, housing insurances are not clarity any more



Largest challenges in energy sector

Energy distribution

Energy storage

Energy security



Carbon has a price



EU Carbon Permit (EUR)

Source: TradingEconomics

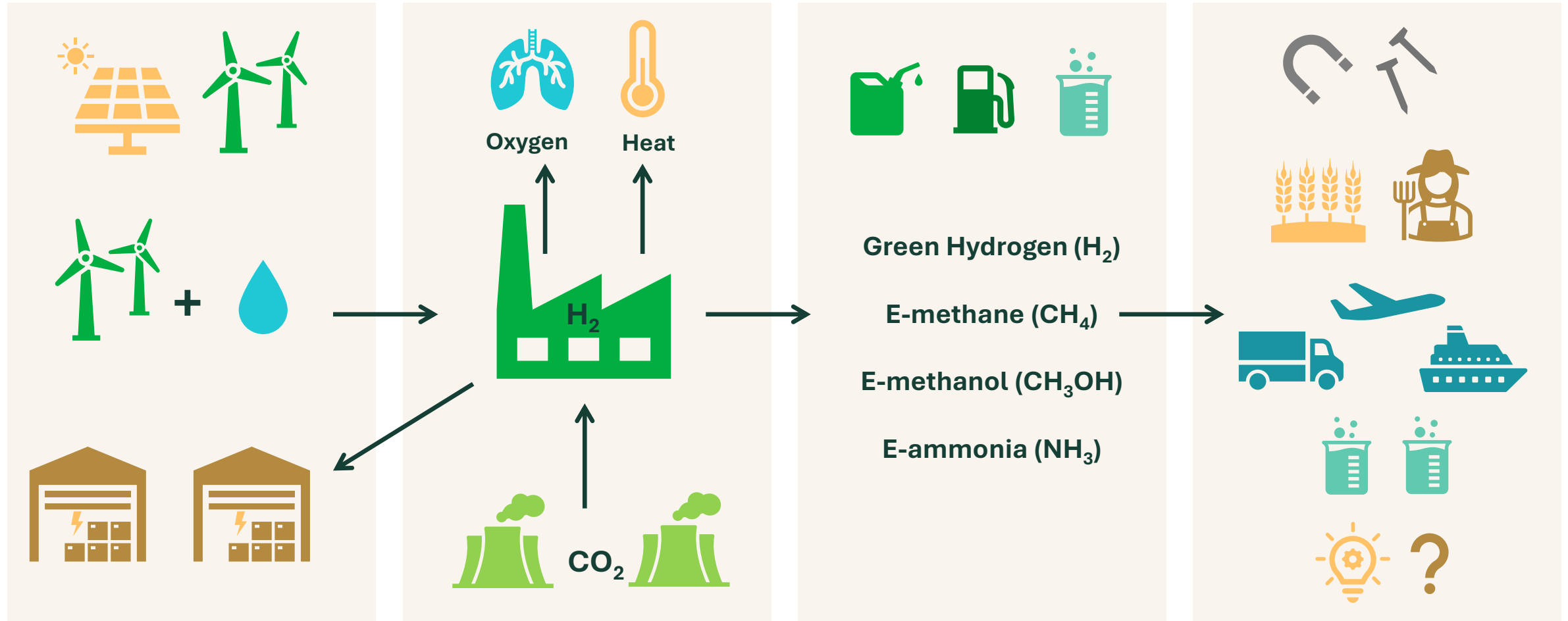
Hydrogen is a key element for energy transition

RENEWABLE ENERGY STORAGE

SECTOR COUPLING

RENEWABLE E-FUELS

VARIOUS END-USES



Hydrogen plays a key role in EU's objectives

CLIMATE

in the achievement of
the climate neutrality
by 2050 under the EU
Climate Law

SECURITY

in decreasing European
Union's dependency of
fossil fuels

ENERGY

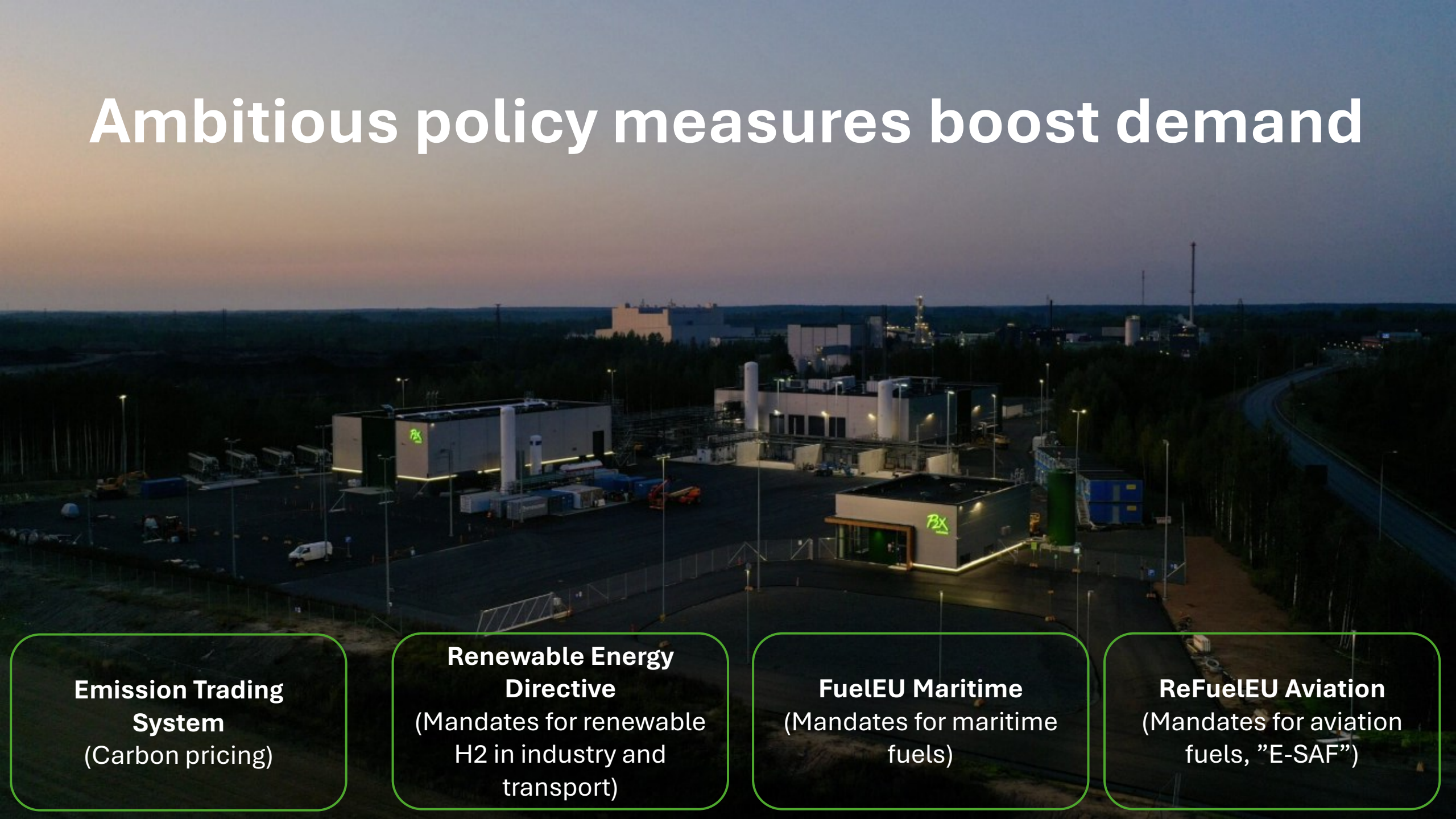
in increasing European
security of supply

INDUSTRIAL POLICY

in EU low-carbon
industrial and
technological
development



Ambitious policy measures boost demand



Emission Trading System
(Carbon pricing)

Renewable Energy Directive
(Mandates for renewable H2 in industry and transport)

FuelEU Maritime
(Mandates for maritime fuels)

ReFuelEU Aviation
(Mandates for aviation fuels, "E-SAF")

Work remains to be done



Number of FIDs still lower than expected:
Strict production rules to be revised

Risk sharing across value-chain more difficult than expected:
Public support still needed

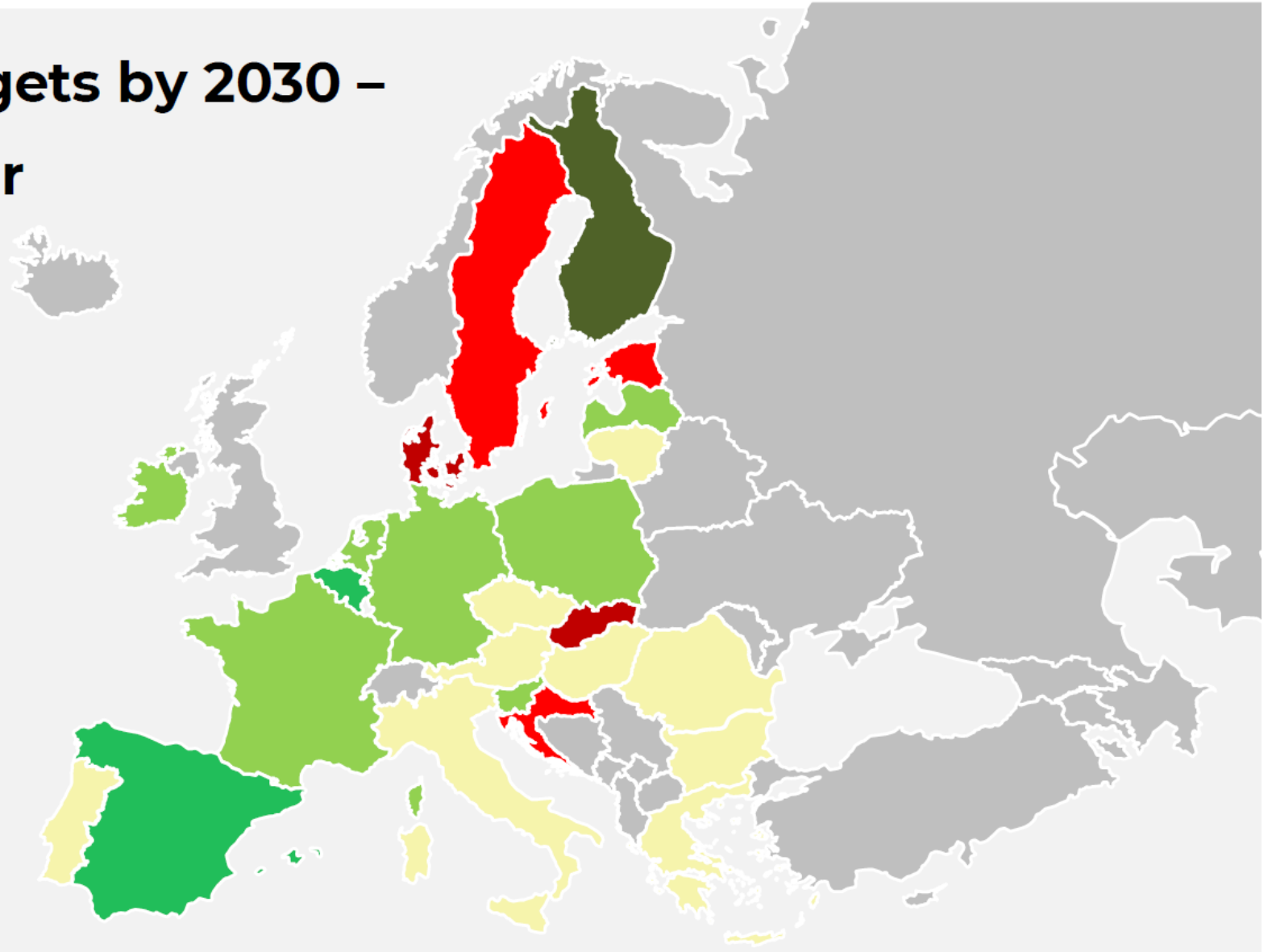
Regulatory certainty, mandates and penalties create demand:
Revision processes of mandated industries prevent investments from FIDs

eFuel Alliance's map on RED III implementation

RFNBO sub-targets by 2030 – Transport Sector in EU member states

RFNBO sub-targets in MS

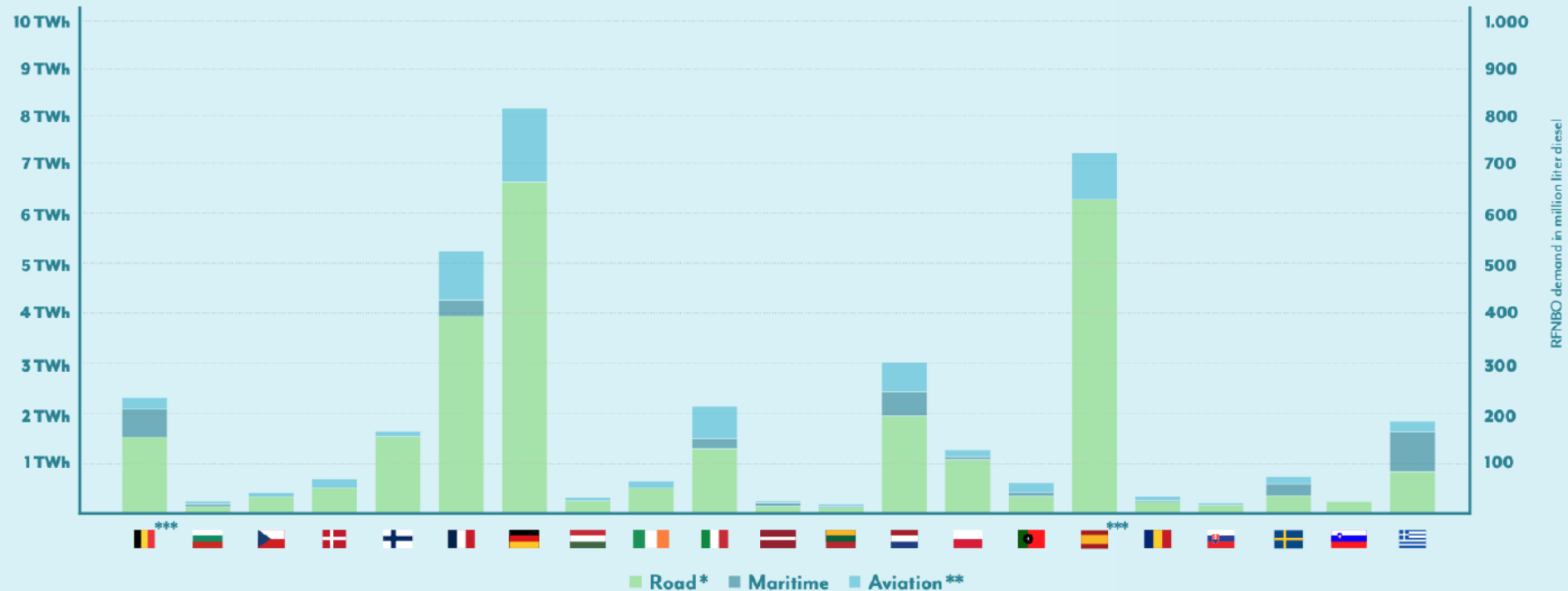
-  No information available yet
-  Minimum fulfilment to be RED compliant (0.5%)
-  $>0.1\% < 0.5\%$
-  $>1\% < 2\%$
-  $>2\% < 3\%$
-  $>3\%$



eFuel Alliance's demand estimates based on RED III implementation and ReFuelEU Aviation

RFNBO demand due to REDIII targets

RFNBO demand in 2030 by REDIII implementation and ReFuelEU Aviation



* includes RFNBOs in refineries and rail transport ** in line with ReFuelEU Aviation *** can be partly met with other low carbon fuels
Source: Own analysis; fuel consumption in 2030 based on fit-for-55 mixed scenarios of the European Commission.

P2X - Systematical scaling of production towards 1GW



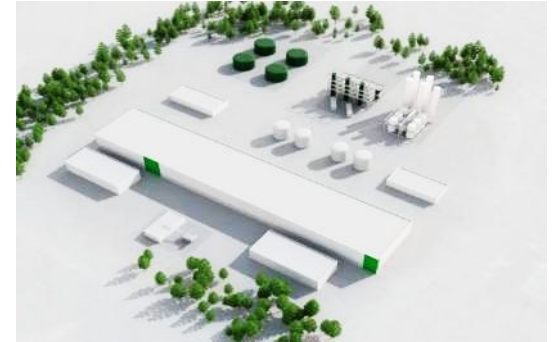
Harjavalta **20 MW**



Joensuu **40 MW**



Oulu **100 MW**



100+ MW

RENEWABLE ELECTRIC FUELS:

Green hydrogen (H_2)

+

Green methane (CH_4)

+

Green methanol (CH_3OH)

“First of a kind” - Harjavalta green hydrogen plant



- Electrolyser size 20 MW – Sunfire pressurized alkaline
- Project construction in 2022 – 2024
- Peak workforce ~170



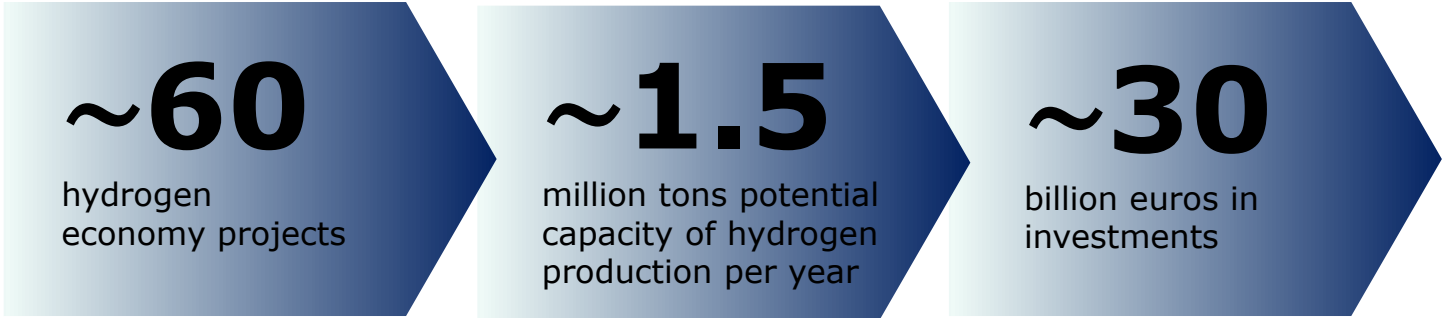
“Engineers, equipment suppliers, contractors & authorities facing something that has never been done before”





Inauguration of Finnish hydrogen economy

Snapshot Finland 2026



30

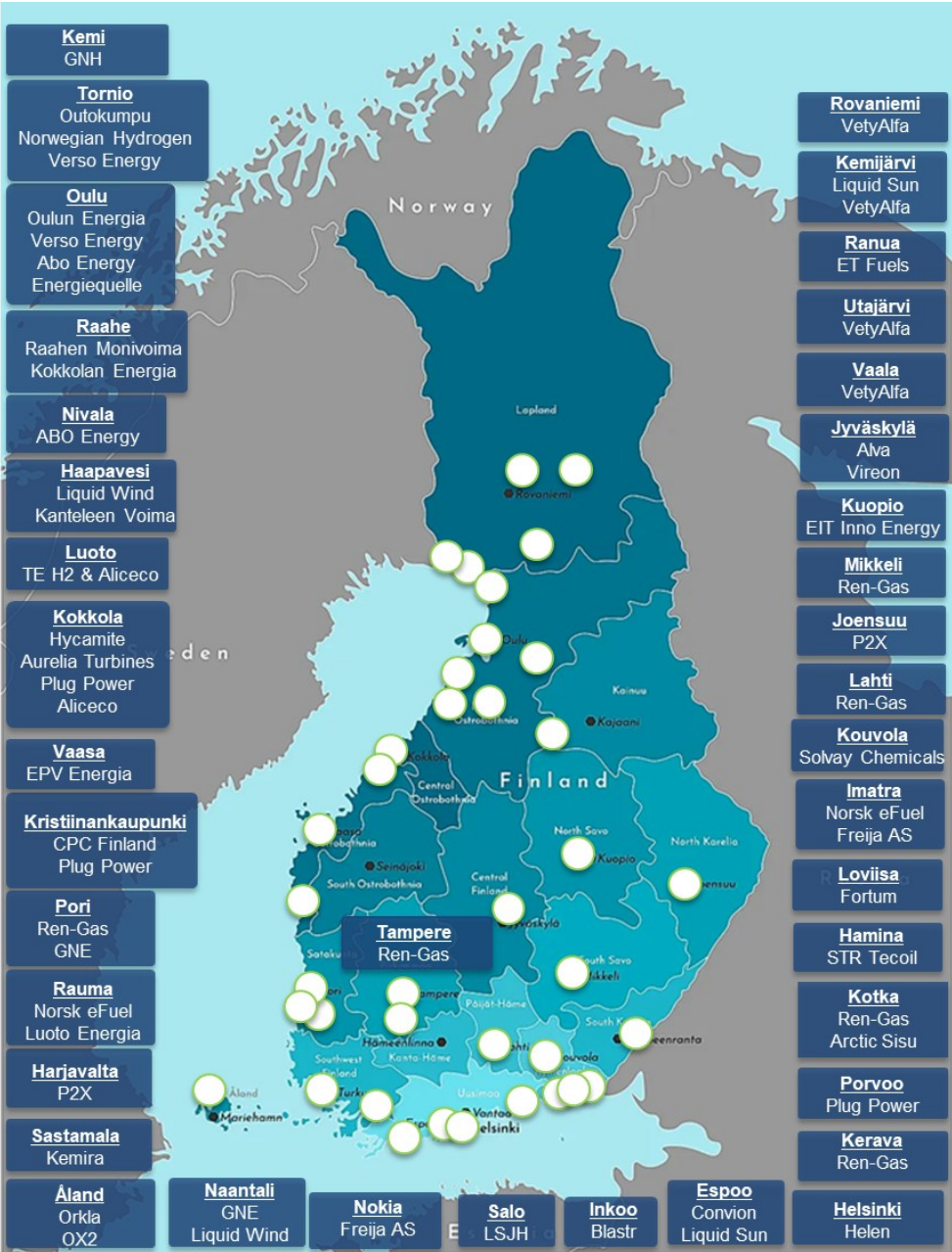
million tons of biogenic CO₂ point sources available, a significant portion of which can be utilized for e-fuels and chemicals.

90%

of domestic hydrogen is produced – and 80% consumed – by the chemical industry, with the largest use in oil refining processes.

9.4 GW

of wind power installed with tens of GW under construction, complemented by 350 MW of solar power.





Thank you!

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