



Hydrogen Europe

@COP24

Jorgo Chatzimarkakis, Secretary General
12 December 2018



Fuel Cell & Hydrogen 2 Joint Undertaking



Hydrogen Europe
Industry

European Union represented by the
European Commission

Hydrogen Europe
Research

**A portfolio of clean,
efficient and
competitive
solutions based on
fuel cells and
hydrogen technologies
in energy and
transport**

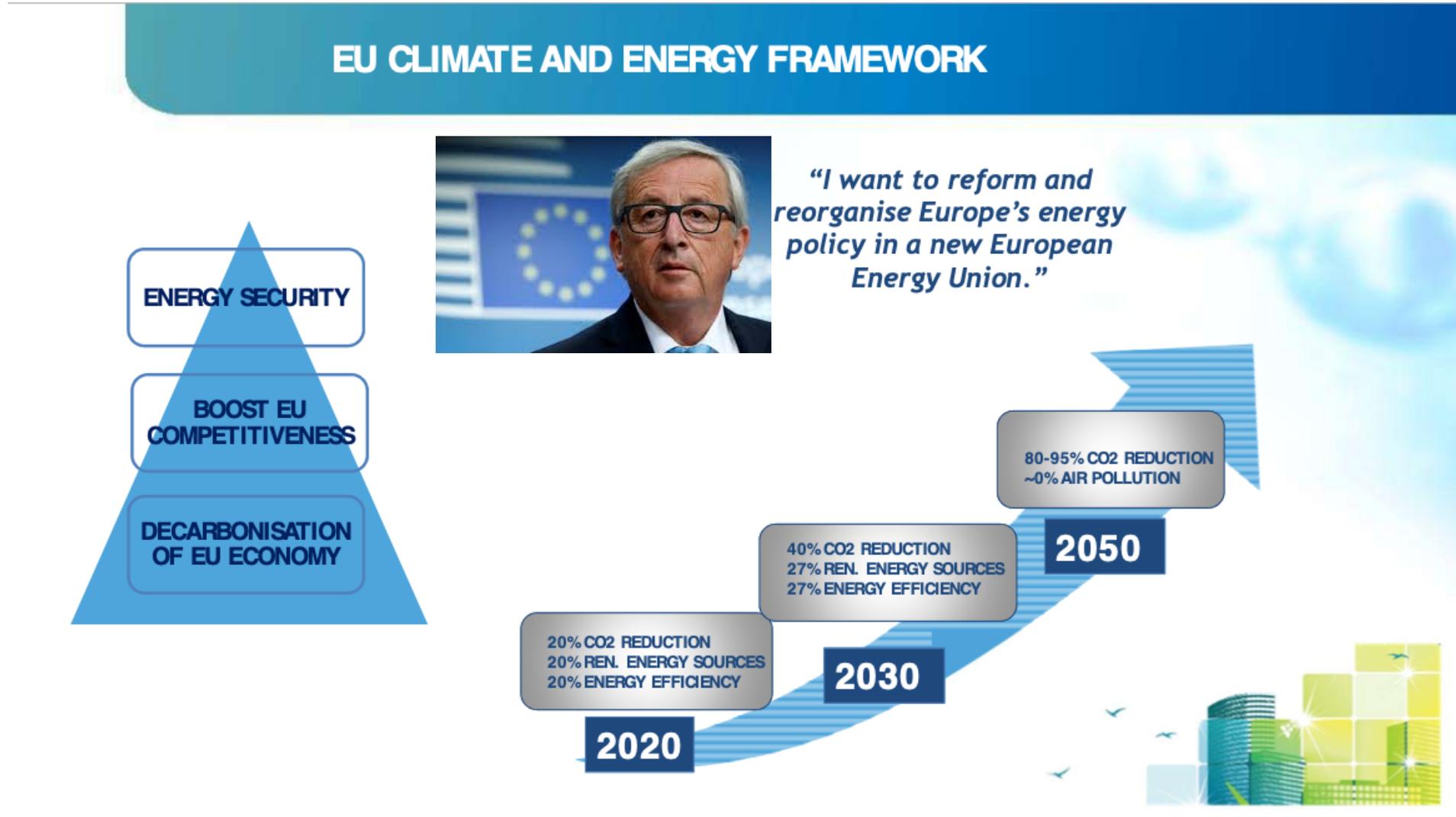


Hydrogen Initiative: Energy Ministers open new chapter



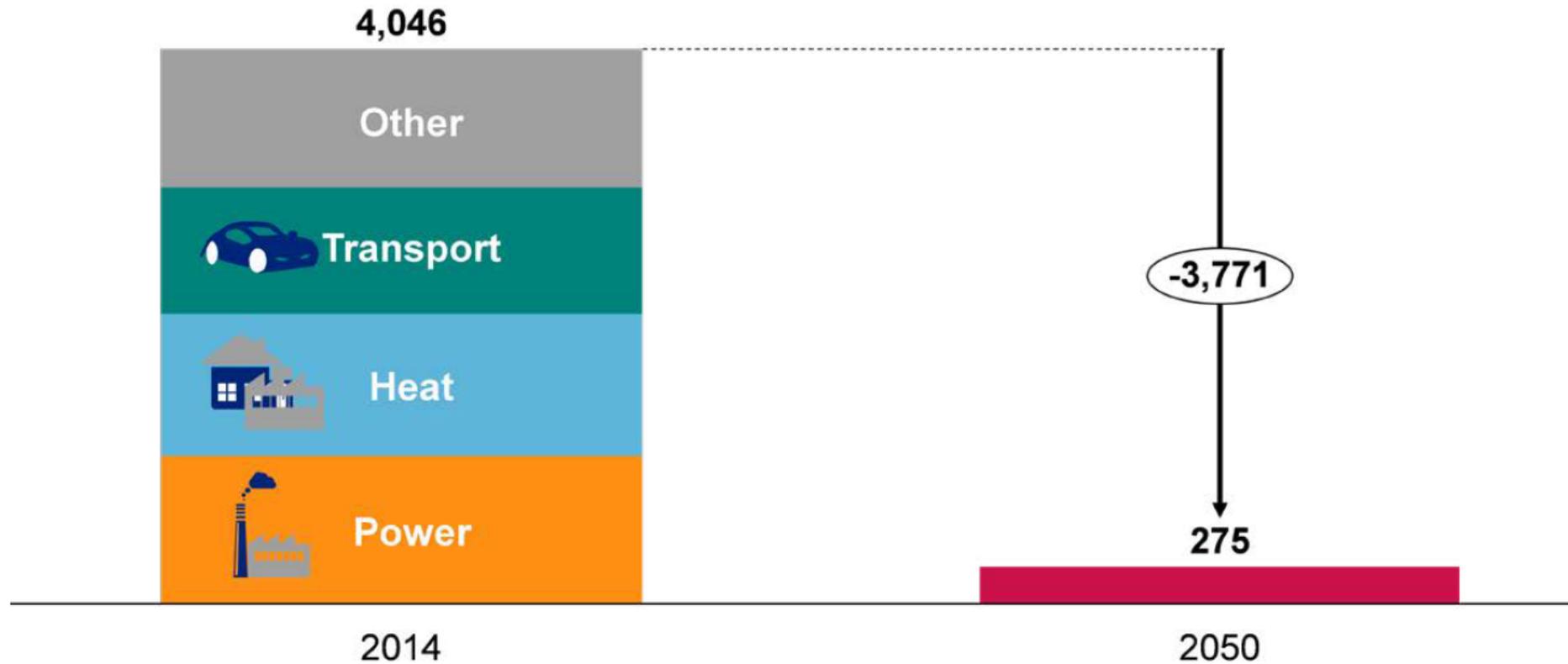
We, the signatories of this initiative, gathered in Linz, Austria, on the 17th and 18th of September 2018, collectively aim to maximise the great potentials of sustainable hydrogen technology for the decarbonisation of multiple sectors, the energy system and for the long-term energy security of the EU.

Linz, Austria
18 September 2018



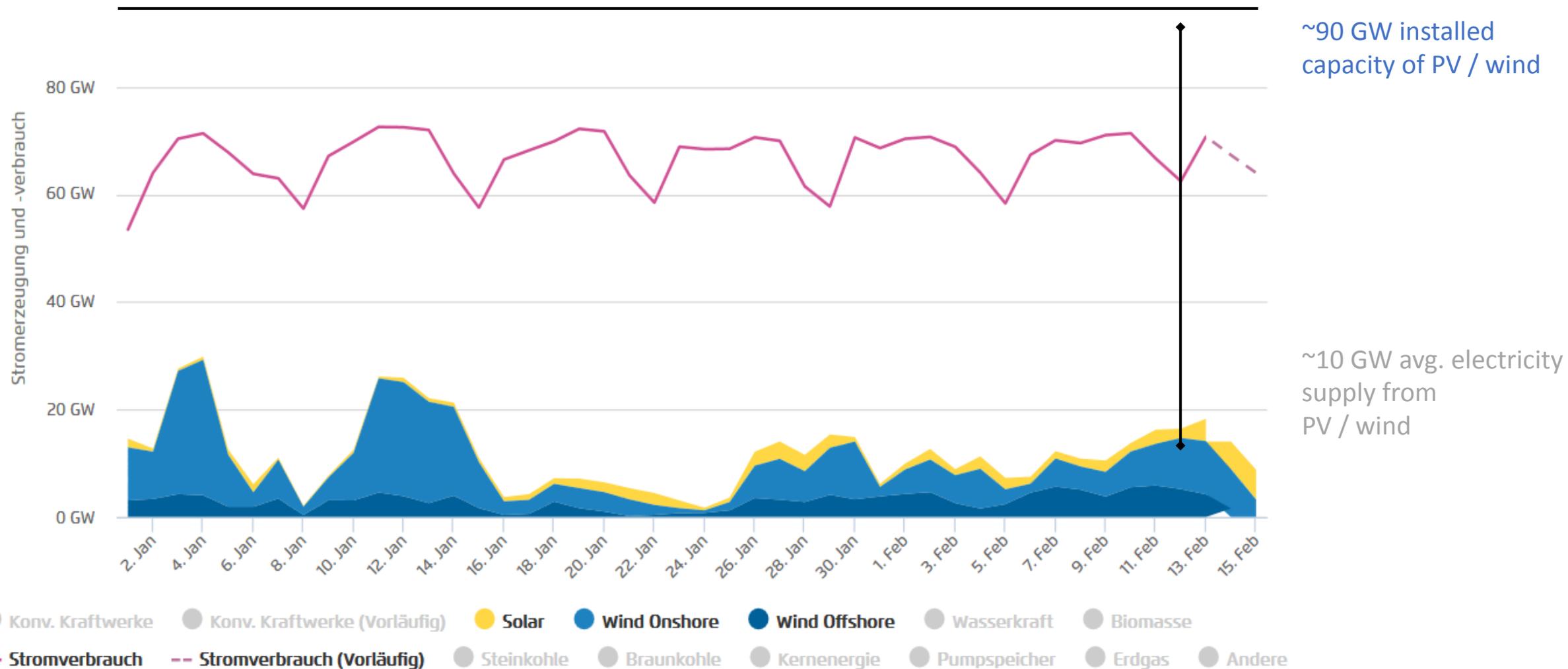
The Problem

FIGURE 1 – THE SCALE OF EUROPE’S DECARBONISATION PROBLEM (MtCO₂e)



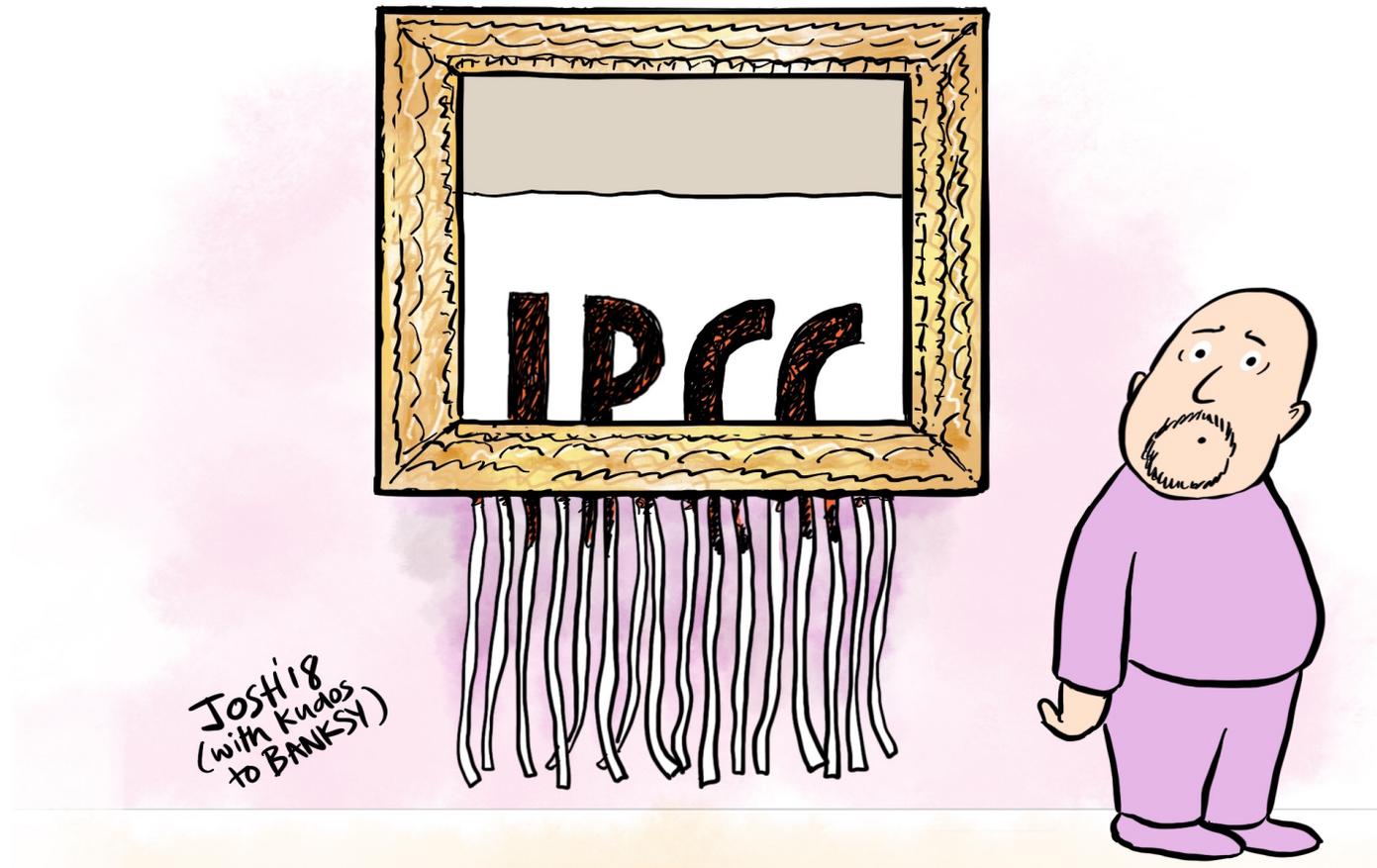
Source: 2016 National Inventory Submissions (Common Reporting Format) for EU, Norway and Switzerland.

All-electric requires overcapacities, too expensive



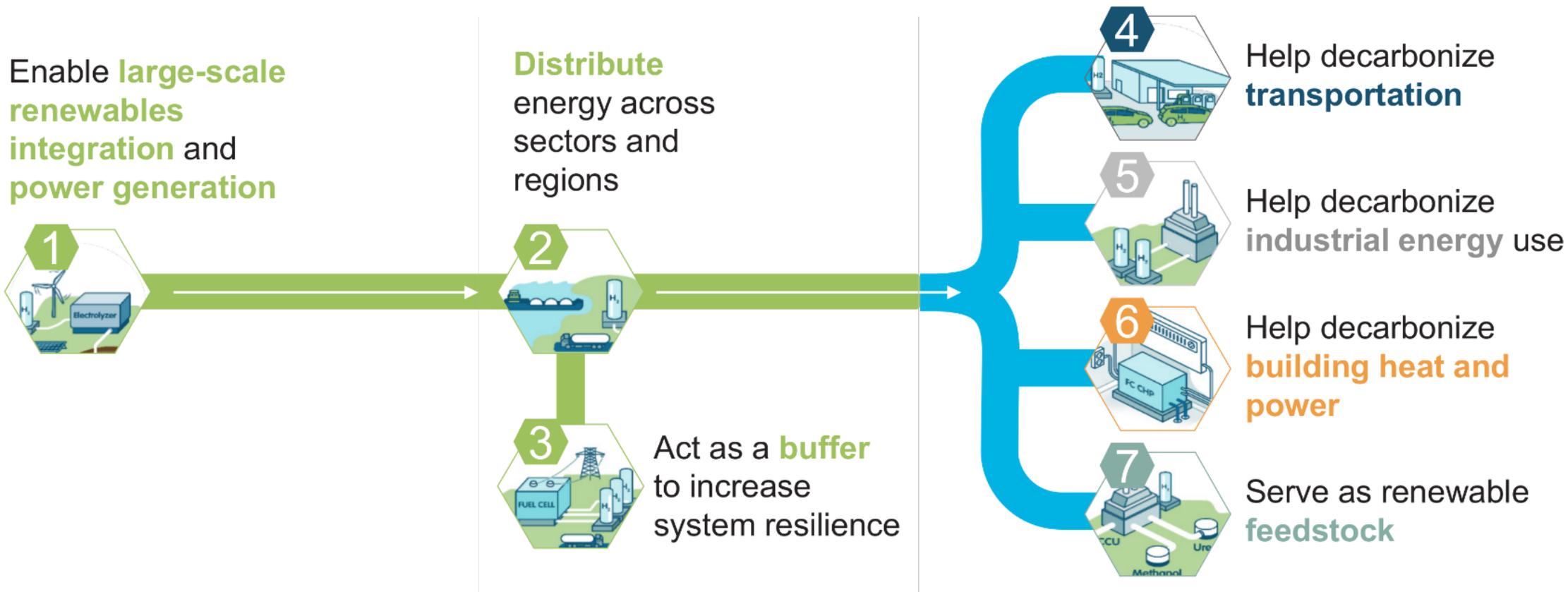
However – no time to lose, we need to invest now

STATE OF THE ART

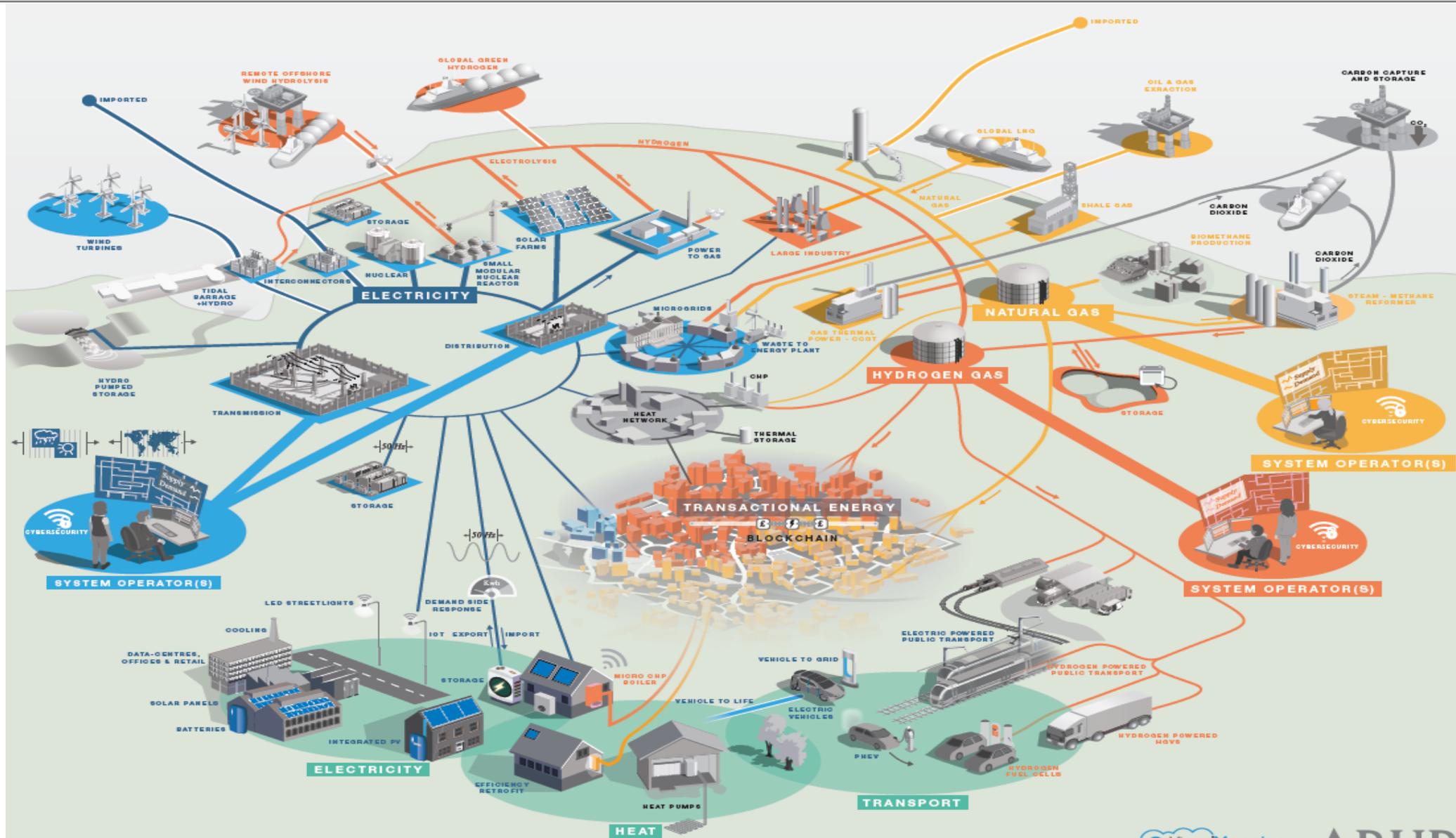


Hydrogen is extremely versatile

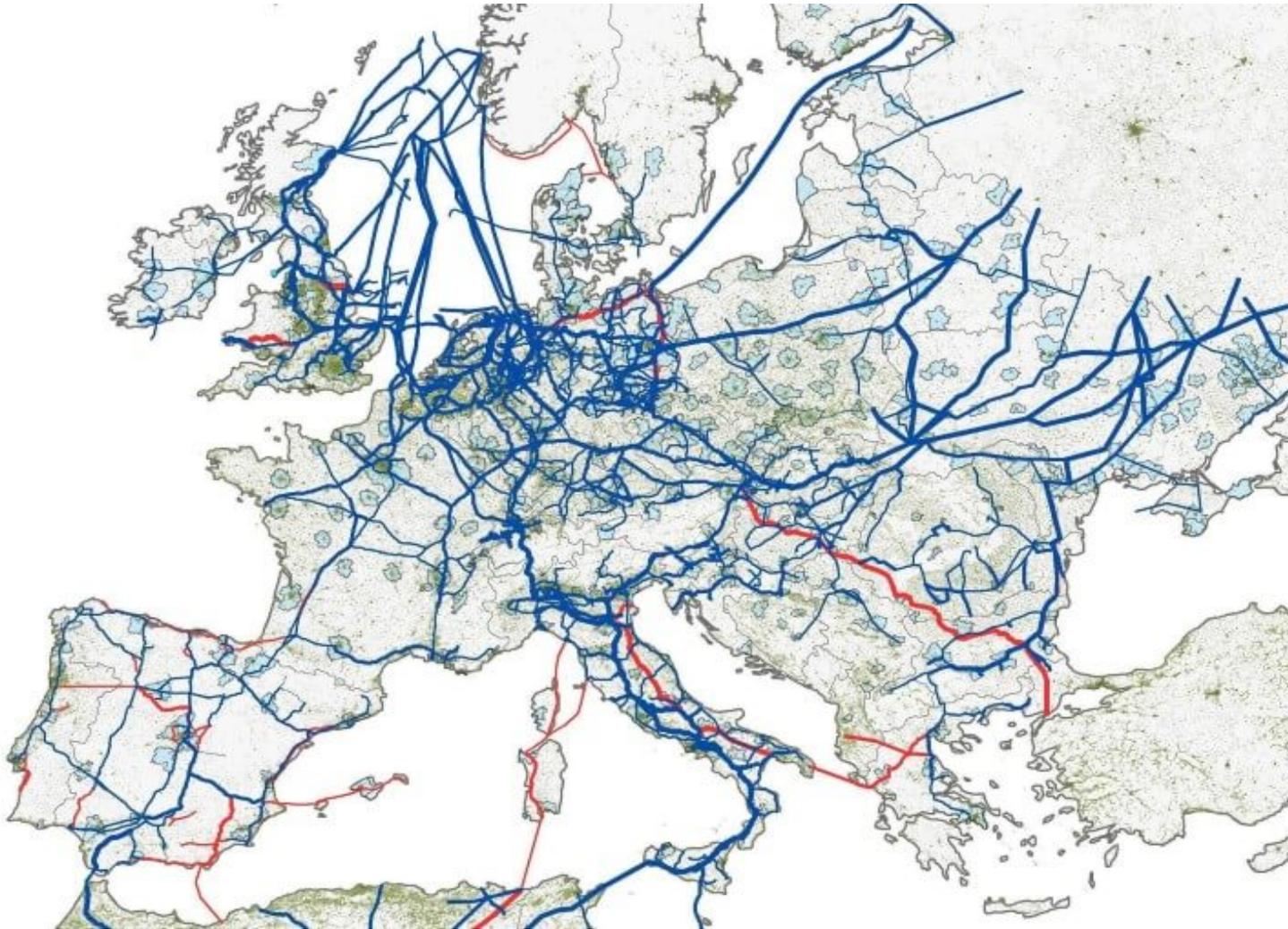
Enable the renewable energy system → Decarbonize end uses

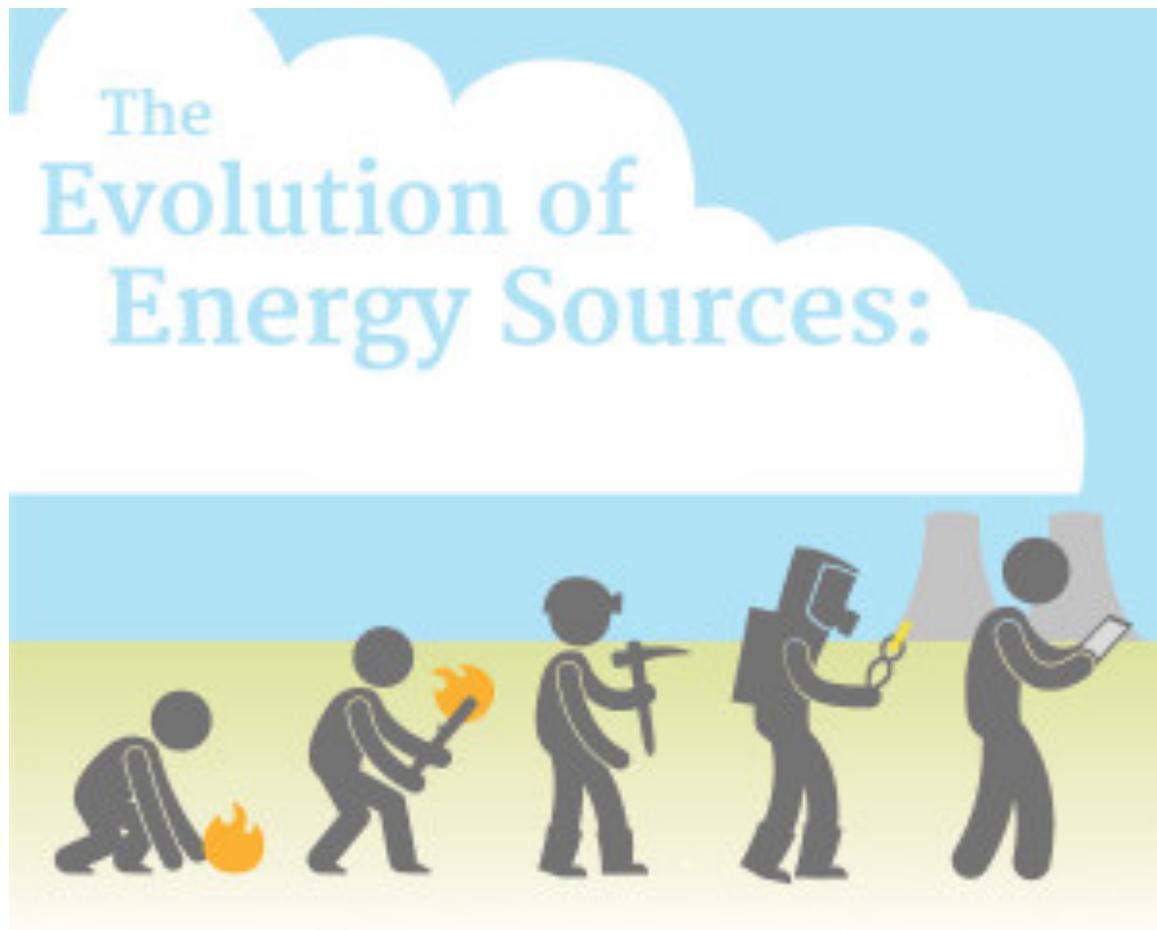


System efficiency through „sector integration“



Gas Grid: Basis for affordable decarbonisation

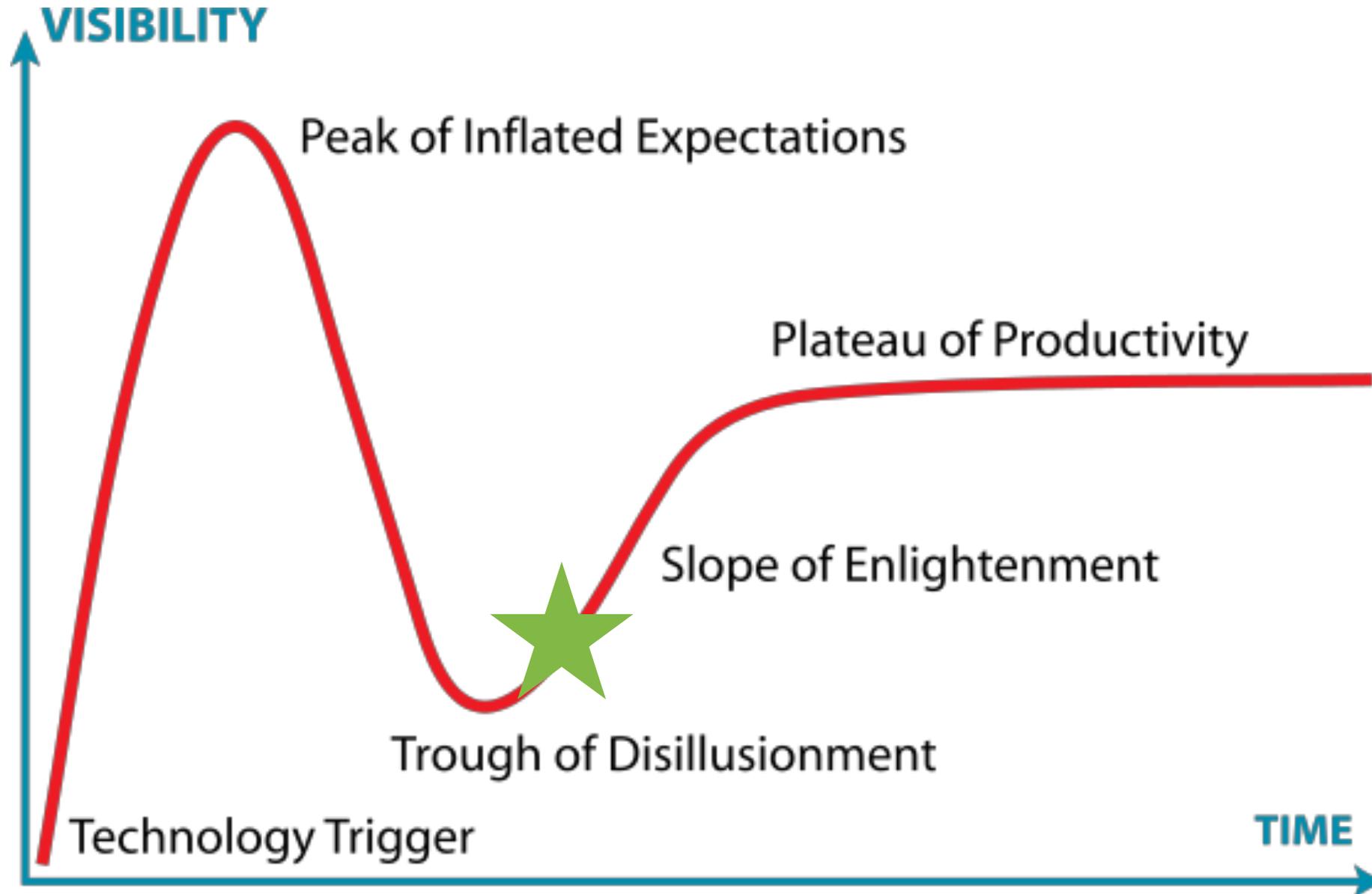




Hydrogen



Careful! – Hydrogen in the Hype Cycle



- Maturity of emerging technologies through five phases.
- Branded and developed by Gartner.

Hydrogen – Part of the "Long Term Strategy"

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16 Nov 2018 | News

EU energy commissioner expects more money for fuel cells in Horizon Europe

Šefčovič backs renewal of €1.33B fuel cells project and predicts more funding for the technology

By Nicholas Wallace



The European Commission's energy chief said he expects to see the EU put more money into hydrogen fuel cell research in the forthcoming Horizon Europe R&D programme.

“We are also preparing the next list of public-private partnerships,” he said, “and we have proposed that fuel cells and hydrogen would be one of them.”

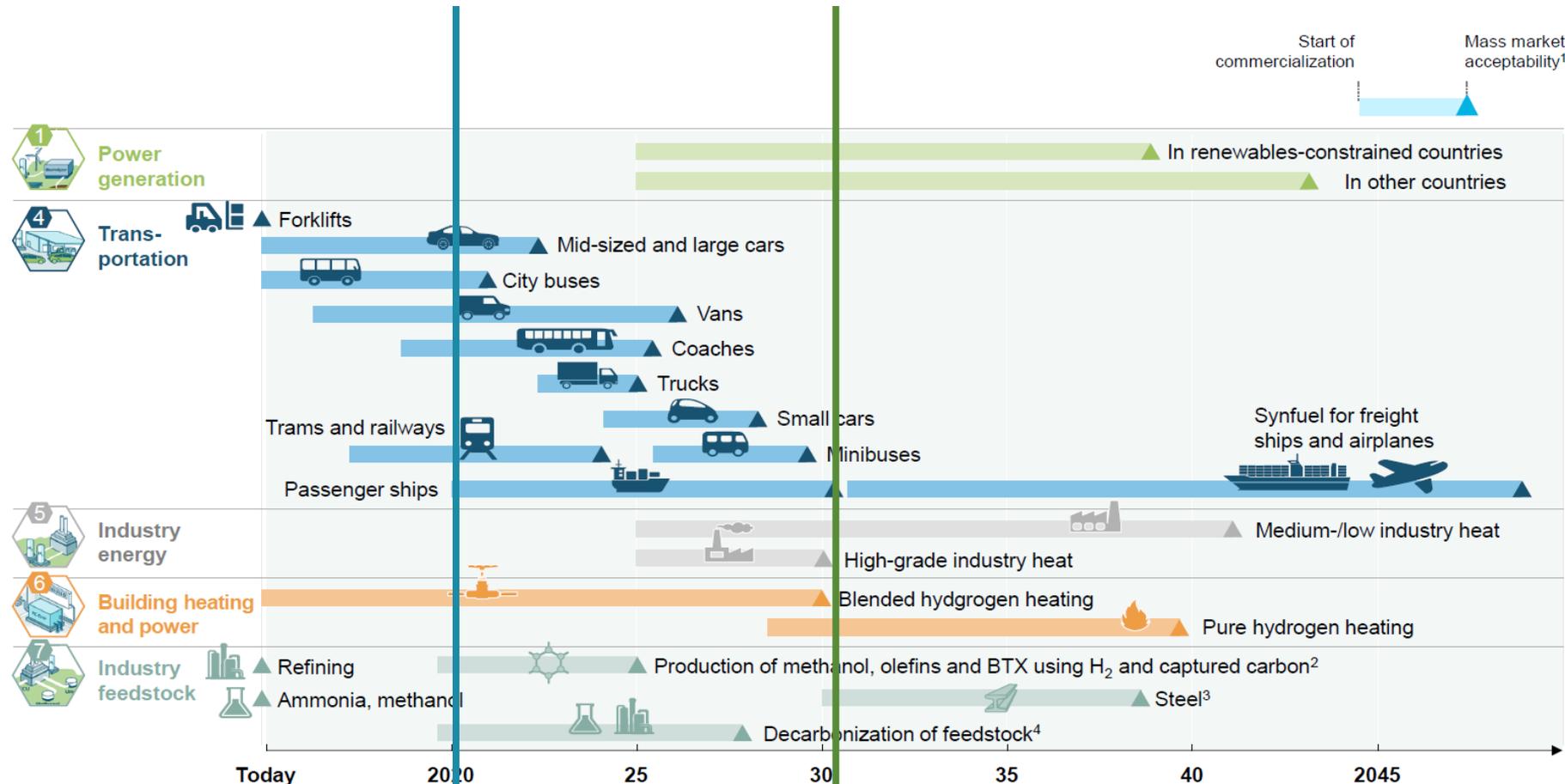
 **Hydrogen Europe**
@H2Europe

Follow

#SF2018 closing remarks by Mauro Petriccione, Director General at @EUClimateAction: “The #EuropeanUnion is determined to lead on #decarbonisation. We are looking forward to continue working with the #hydrogen sector in the future!”
#InnovationFund #CEF #HorizonEurope #InvestEU



Where are we with hydrogen right now?



1 Mass market acceptability defined as sales >1% within segment in priority markets
 3 DRI with green H₂, iron reduction in blast furnaces and other low-carbon steel making processes using H₂

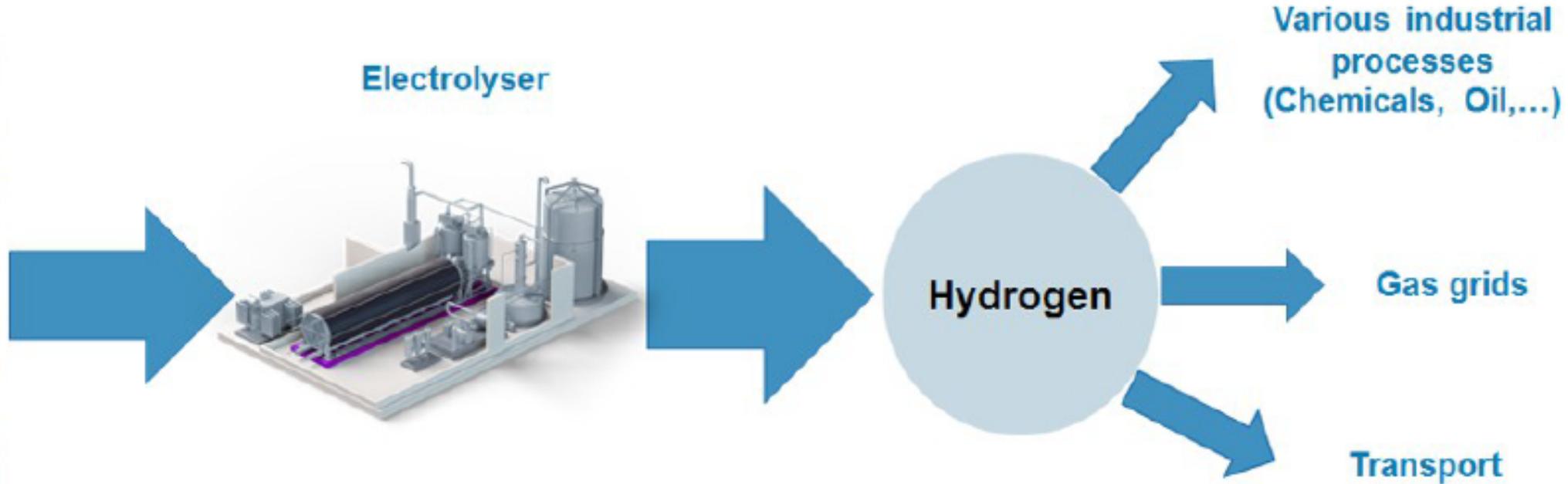
2 Market share refers to the amount of production that uses hydrogen and captured carbon to replace feedstock
 4 Market share refers to the amount of feedstock that is produced from low-carbon sources

Achievements of FCH 2

Ambitions for Horizon Europe

Green hydrogen is key – needs a massive ramp up

Clean power + Water



Source: Engie, NEL and YPO (for illustration), Morgan Stanley Research

We are building a 40 GW Electrolyser Coalition, but is it enough?



European **Political
Strategy** Centre

10 TRENDS

RESHAPING

CLIMATE AND

ENERGY

NET-ZERO EMISSIONS

NO LONGER A MERE DREAM

Innovation is gradually delivering on the promising technologies needed to erase our carbon footprint

Shift happens!

Hydrogen enables you.



**Hydrogen
Europe**



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