



DHL Energy Regional Conference Europe 2022

Europe 2050 - H2, climate goals & energy supply

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**LOGISTICS OF
THE ENERGY
REVOLUTION**

THE FUTURE OF
THE ENERGY
SUPPLY CHAIN



**POWERING
OUR WORLD,
TOGETHER**

DELIVERING EXCELLENCE
TO THE ENERGY SECTOR



Kilian Crone, DHL Innovation Centre, 13th October 2022

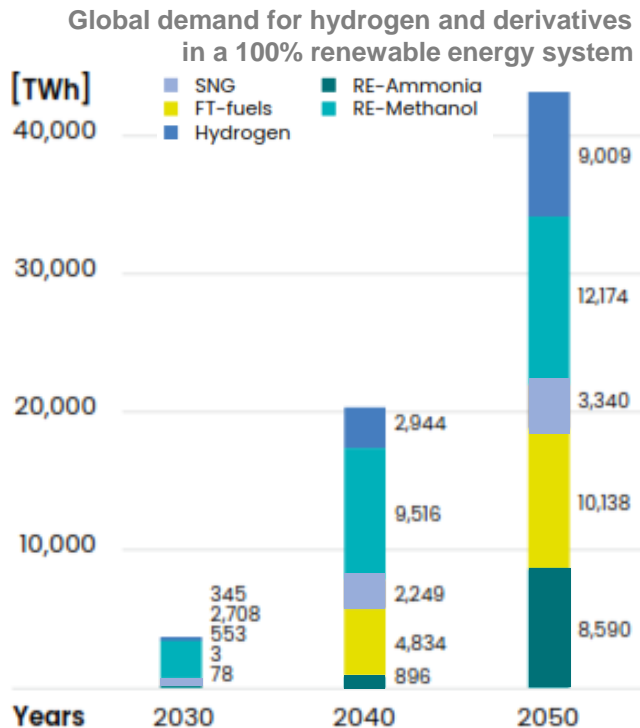
Europe 2050: H2, climate goals & energy supply

Europe benefits from importing green(er) energy vs. self-supply

Many regions globally will have the option to transition to **100% renewables and self-sufficiency**

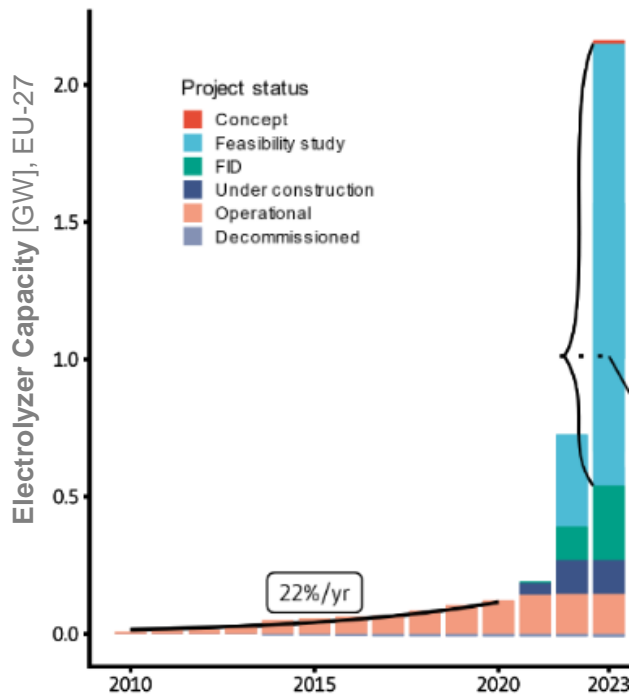
Europe must develop renewables, yet also foster **low-GHG energy imports**

Europe would **benefit from strong cost decreases** compared to a (renewable-based) self-supply scenario



Source: LUT/dena
Link to [study](#) and [presentation](#)

Hydrogen and its derivatives enable import and renewable energy systems, but barriers persist



80% of 2023 EU hydrogen projects do not have **final investment decision** yet

To meet EU target, **annual growth rates of 70%** are necessary

Largest barriers

- **Market-oriented** policy incentives (e.g. quotas)
- Clarity of **sustainability requirements** (e.g. RED)
- **Strategy** on infrastructure (pipes, ports)
- Choice of **carrier** (derivatives for imports)

First viable business cases and investments in transport fuel market (1)

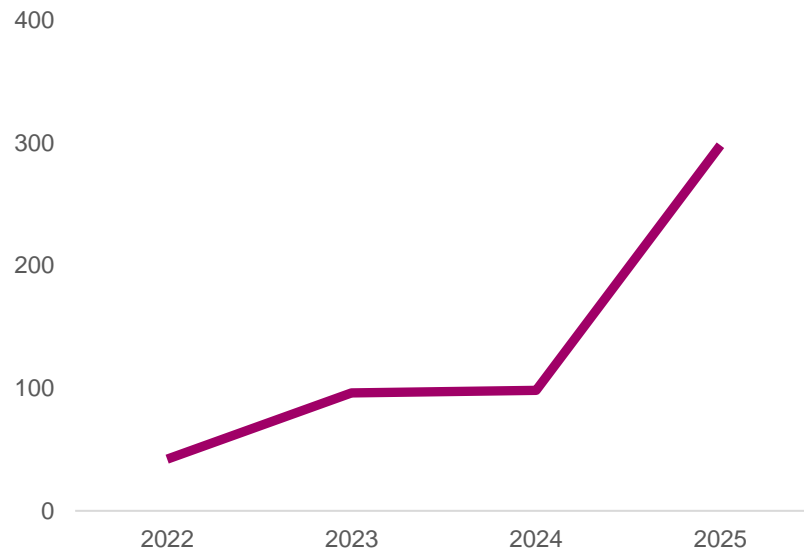
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of 23 mature hydrogen refinery projects are in Europe, a further 61 are under development worldwide

23 GW

in electrolyzer capacity for refineries are in concept or feasibility stages, driven by NorthH2 project

H2 Capacity in Refineries, Europe
Projects post-FID in MWeI



Source: Data from 2022 IEA Hydrogen Projects Database

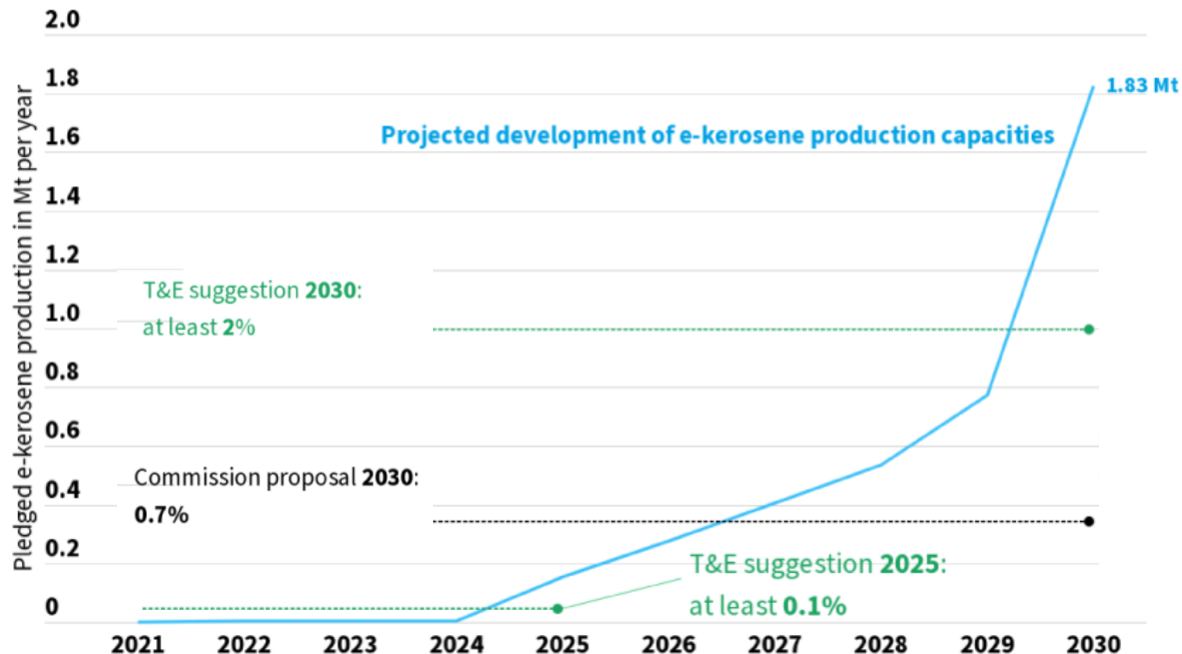
First viable business cases and investments in transport fuel market (2)

18

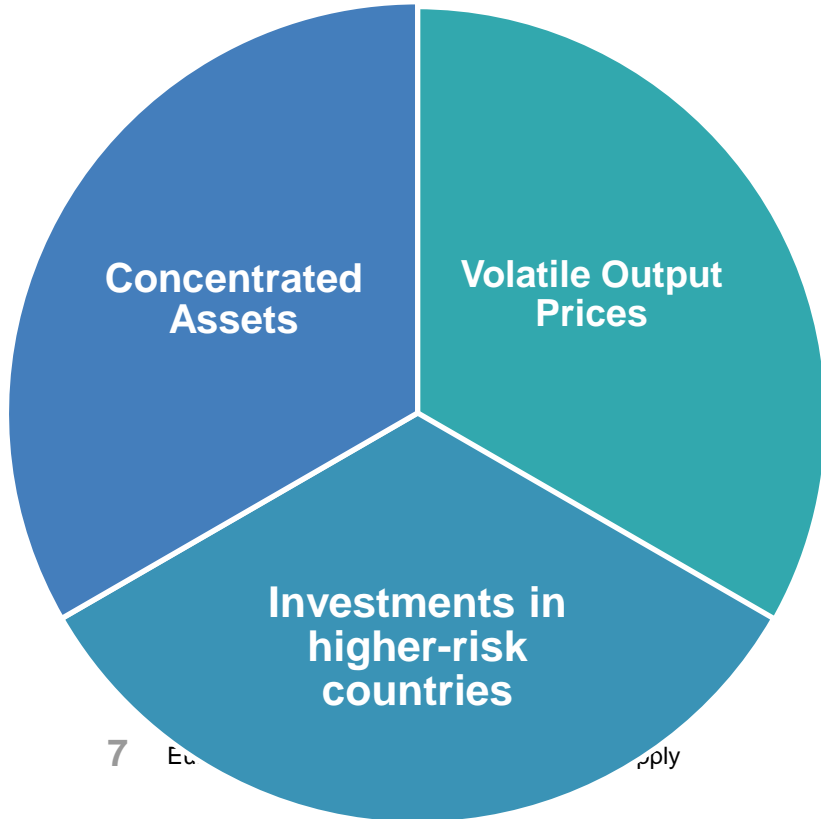
European sustainable aviation fuel (SAF) projects are under way, enabling

1.83 Mt

SAF production by 2030, exceeding proposed EU quota



Companies with O&G expertise can leverage existing skillset for transition to **green hydrogen**

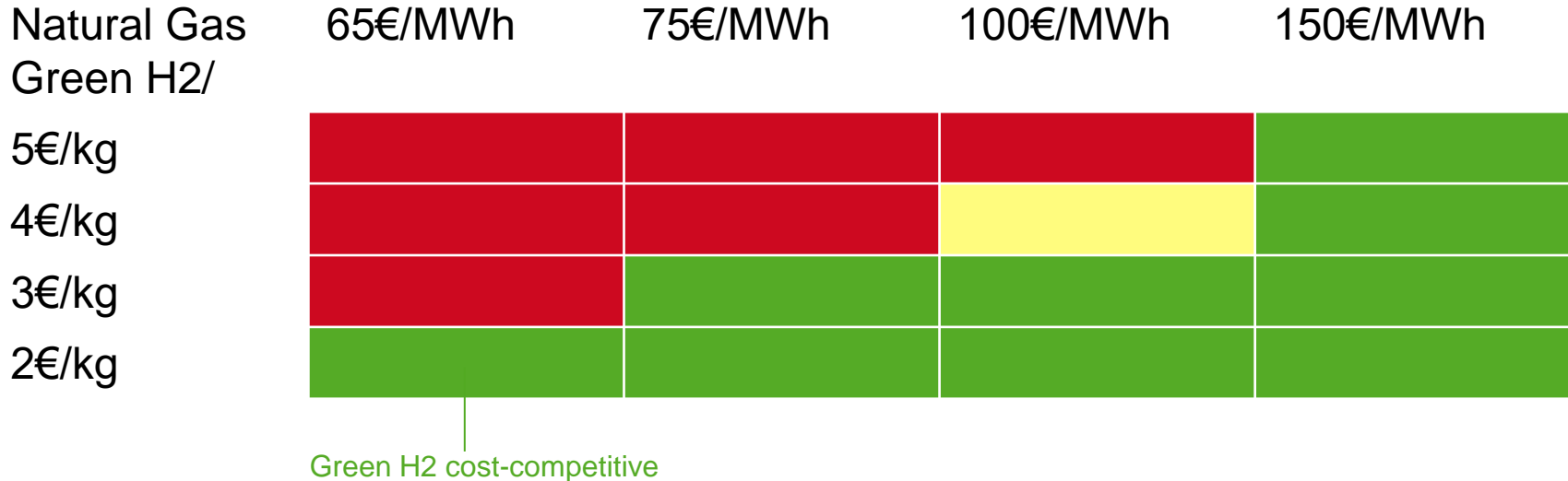


But, uncertainty in nascent market and new scale of the technology:

- Pricing
- Offtake
- Regulation

"Renewable Hydrogen Project Risks" report to be published on www.powerfuels.org

European energy system in the 2020s cost delta green vs. fossil molecules decreases



2050: targets for Europe need strategy for energy imports of GHG-neutral energy carriers

 **Voluntary markets** can be short-term solution for supply-chain build-up

 **Larger projects** will become viable, speed depending on energy price level in Europe

 **European strategy** needed on infrastructure and volume of low-GHG energy imports

 **Opportunity** in increasing molecule security of supply while fast-tracking energy transition beyond power sector



**Thank you for
your attention.**

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*“There is no shortage of investors,
only a shortage of projects”*

dena

German Energy Agency



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