

Bring RFNBOs to the Market – a Company Association Perspective

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OUR MEMBERS

MORE THAN 170 COMPANIES, ASSOCIATIONS
AND CONSUMER ORGANIZATIONS, INCLUDING:



Lufthansa



SIEMENS
energy



NESTE

MAHLE

ExxonMobil



IK
INERATEC

INFINIUM

Arcadia
eFuels

Nordic
Electrofuel

Synhelion



Regulative framework for eFuels in EU

All regulations are open or will be revised in the next 3 years



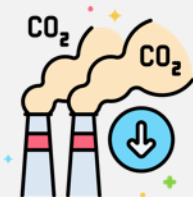
CO2 standards for new cars and trucks

Stipulates the reduction of tailpipe emissions for new vehicles. No recognition of eFuels. Review in 2026/27



Renewable Energy Directive (REDIII)

Sets targets for renewable energy, incl. targets for the transport sector with specific sub-quotas. Set restrictive production criteria (del. acts). National implementation until May 2025. Review in 2027.



EU Emissions Trading System

Prices CO2 emissions and gradually reduce available allowances. Revenues are used for funding schemes e.g. SAF allowances and Hydrogen Bank



FuelEU Maritime

Commits shipping industry to reduce the emission intensity of its used energy by 2050. Sun-rise quota of 2% eFuels in 2034, if eFuel share below 1% in 2031



ReFuelEU Aviation

Sets increasing mandatory blending quotas for sustainable aviation fuels by 2050. Binding quota of 1.2% eFuels in 2030/2031.



Energy Taxation Directive

Doesn't differentiate between fossil and renewable energy sources, based on energy content. Commission proposed low tax rates for eFuels.

In our global database,
we keep track of announced
eFuels projects, their production
capacities and investment status

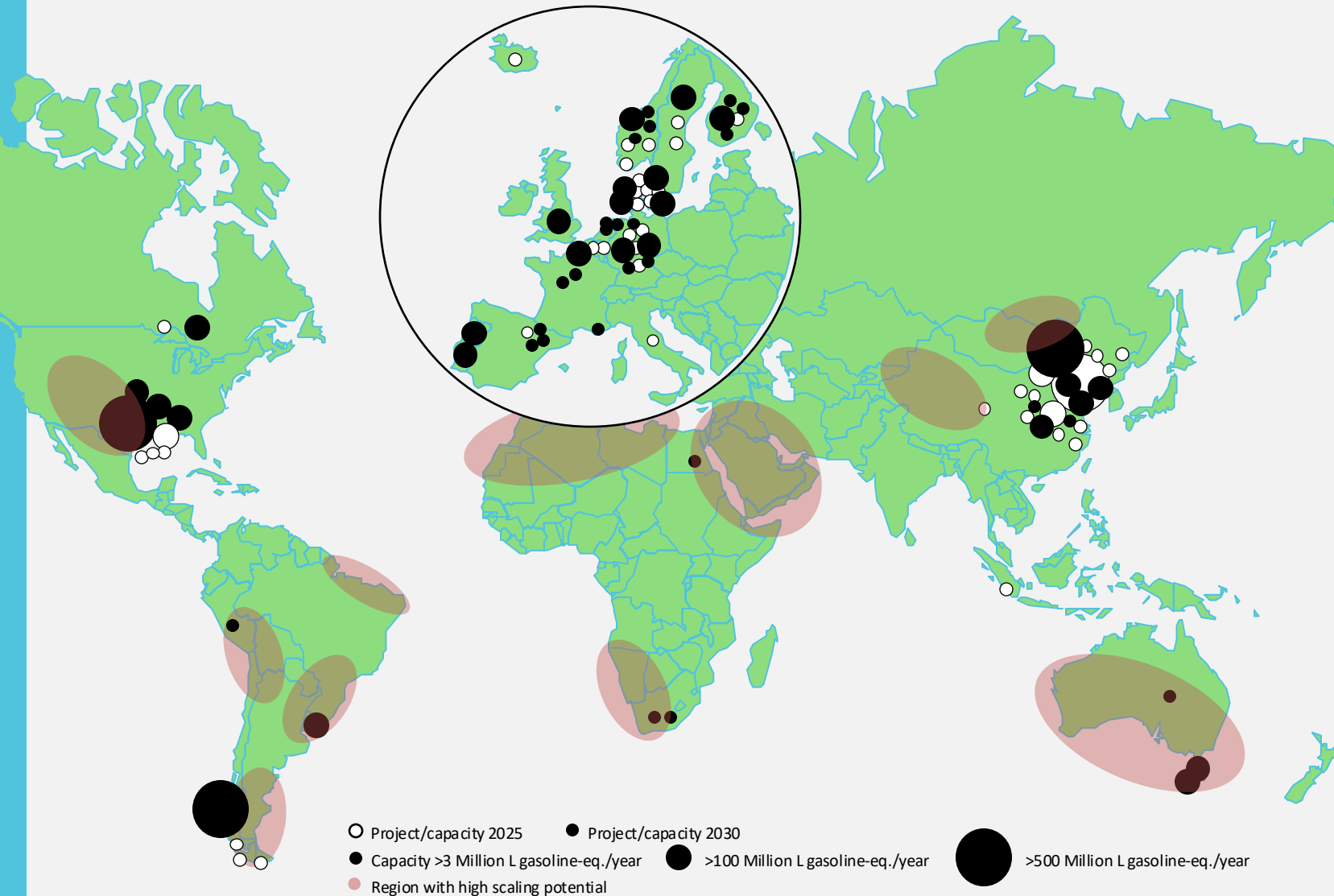
430
PROJECTS

6
eFUEL TYPES

8
REGIONS

5
PROJECT STATUS

Source: Porsche Consulting synfuels project tracker; Desk research; IEA Hydrogen Database;
VW Group Innovation; eFuel Alliance data; Porsche Consulting eFuels Cost Model



Capacities based on official announcements, including data by Volkswagen China eFuels projects analysis; eAmmonia & eMethanol will also supply other sectors; eAmmonia excluded from deep dive as mainly used in chemical industry

Implementability of RFNBOs DAs on the ground

SELECTION OF UNCLARITIES, INCONSISTENCIES AND CONCERNS

Application in third countries

- Bidding zones equivalents outside of the EU, e.g. in the USA
- Certification of biogenic CO₂ outside the EU
- “Effective carbon pricing system”

Overlaps with other legislation

- Mass-balancing period for mixed CO₂ streams – mismatch between EU ETS and delegated acts
- (3 vs 12 months)
- “Inherent CO₂” and the responsibility to surrender ETS allowances

Technological developments

- Missing clarity for hybrid processes

Translation to contractual obligations

- PPAs and role of intermediate

Time horizon

- Temporal correlation: Switch from monthly to hourly temporal correlation from 2030
- CO₂ sources: 2041 cutoff for using industrial CO₂
- Additionality: grandfathering until 2038 for plants coming into operation before 2028

Risk of regulatory changes

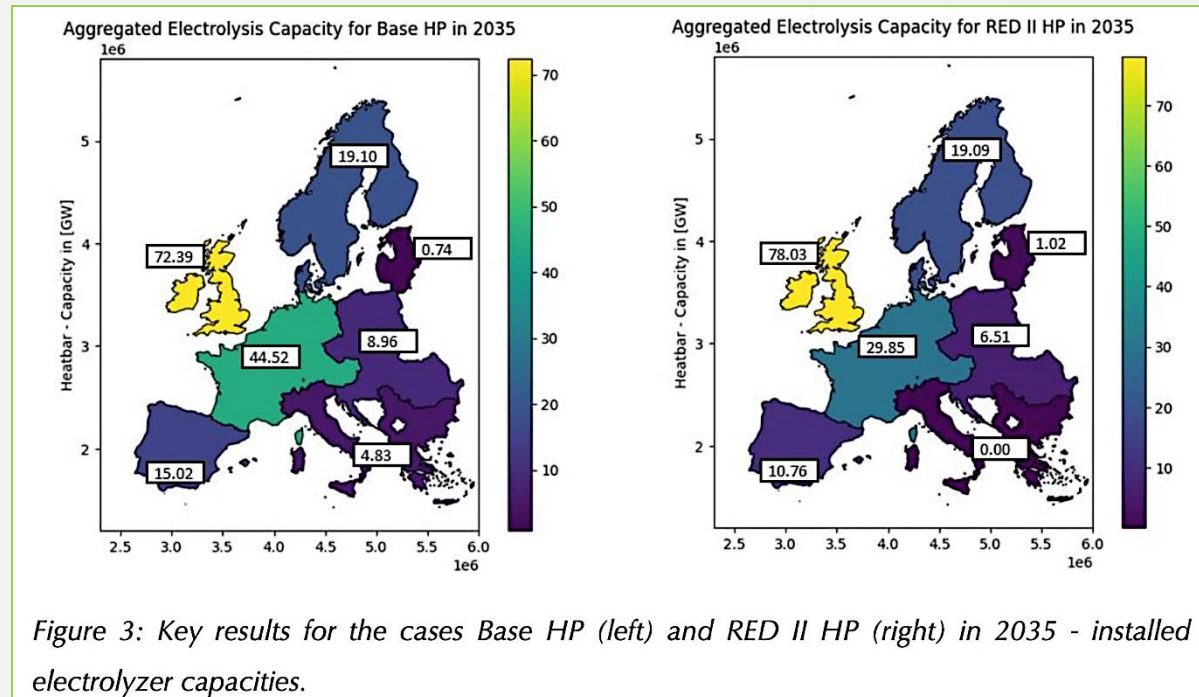
- First projects need safety guard until market has established, e.g. grandfathering
- Future development of CBAM and new CO₂ pricing on imported products
- Review of temporal correlation (July 2028)

Missing regulatory framework

- Flexible allocation of sustainable properties
- Missing traceability system for CO₂

Financial impact of REDII Delegated Acts

DIFFERENT STUDIES SHOW THE NEGATIVE IMPACT OF DELEGATED ACTS ON PRODUCTION PRICE AND AVAILABILITY



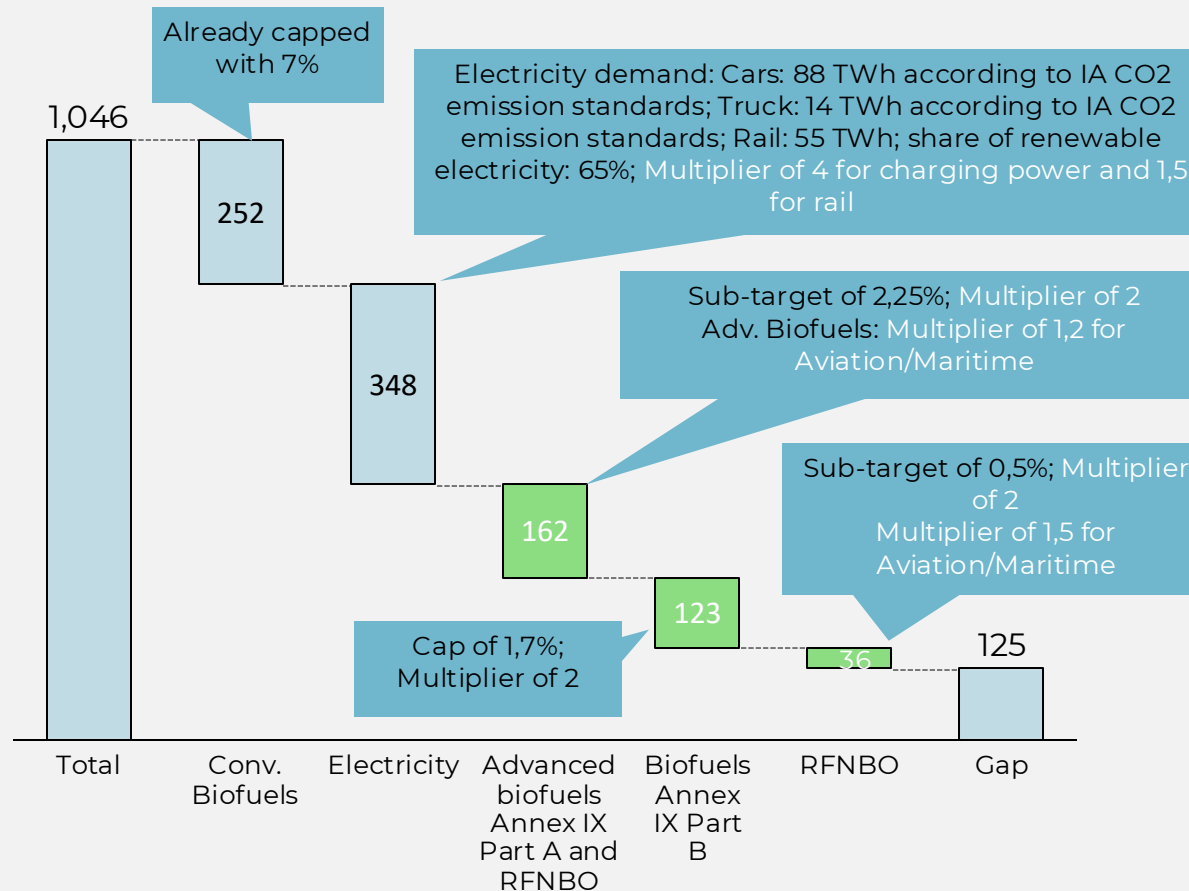
- Restrictive electricity criteria are **reducing European electrolysis capacity by 33%** (29.85 instead of 44.52 GW) in 2035, leading to **higher system costs**
- Switch from monthly to hourly** temporal correlation **increases cost by more than 25%** without significant reduction in power sector emissions
- Restrictions on imports**; Global trade can reduce the levelized cost of eFuels by up to **30 %** in some regions compared to a self-supply scenario
- Regulatory complexity **entry barrier for investors**

Recommendations

- Revise delegated acts** for production criteria as soon as possible and **exempt the first 6 GW electrolysis capacity**
- Allow unavoidable industrial point sources** e.g. cement plants beyond 2041 and outside of EU
- Introduce a "**grandfathering**" rule for early projects

Low RED targets set no investment signal

RED-TRANSPORT COMPLIANCE OPTIONS IN TWH BASED ON 29 % RENEWABLE ENERGY TARGET



- **Low quotas in 2030** resulting in off-takers hesitating signing long-term contracts. Multipliers are further reducing the quotas. Some off-takers may even factor in penalties
- **First Mover Disadvantage:** Nobody wants to finance the first plant
- No targets before or beyond 2030 exist in RED

How to solve it?

- Member States shall **set more ambitious targets in the national REDIII implementation** and give long term projection
- Banking of credits to incentivize bringing additional eFuels earlier into the market

Exclusion of Key Markets Like the Road Sector

REASONS FOR A TECHNOLOGY OPEN APPROACH

Willingness to Pay



Fuel prices in aviation and maritime matter much more. Those sectors are in international competition and less regulated from climate perspective. Shipping and Aviation can also not provide the necessary 10+ year offtake.

Byproducts



The production of eFuels allows for global utilization of renewable energy, creating byproducts such as greater flexibility in energy storage and transportation.

Market size and existing fleet stock



Road sector is responsible for 80% of fuel consumption and respective CO₂ emissions. This large market should not be ignored. We should not forget more than 300 million vehicles in Europe with an internal combustion engine.



Uncertain technological development

Nobody can predict future technical developments. Risks and opportunities exist for all technologies. We should stay open to all solutions and avoid lock-in effects of single technologies.

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