



The European Hydrogen Strategy

3^{ème} édition de la
Journée algéro-allemande de l'Énergie

L'Hydrogène Vert en Algérie
Potentiel et Perspectives

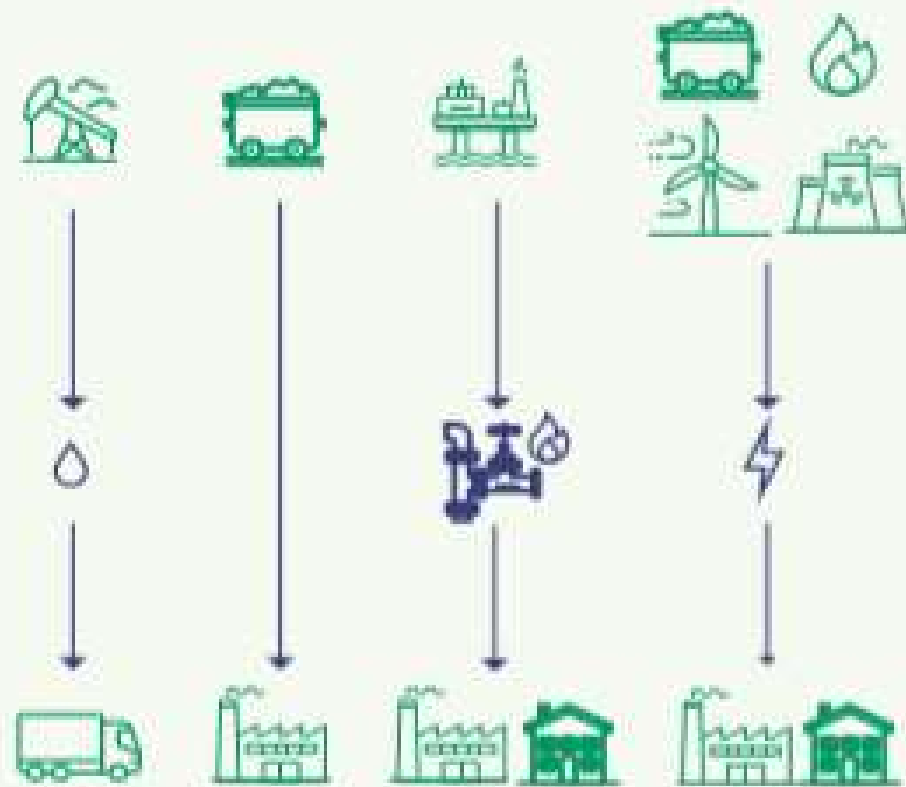
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The energy system today : linear and wasteful flows of energy, in one direction only



Future EU integrated energy system : energy flows between users and producers, reducing wasted resources and money



Towards a climate-neutral energy system

Energy system integration Strategy

A more **circular and energy efficient** energy system

1

A **deep electrification** of consumption, based on **renewable electricity**

2

The use of **renewable and low carbon fuels (incl. hydrogen)** in hard-to-abate sectors

3

Hydrogen Strategy

A full value chain approach to upscale hydrogen

+

Clean Hydrogen Alliance

The EU hydrogen strategy

2024

- 6 **GW** of renewable hydrogen electrolyzers
- Replace **existing hydrogen production**
- Regulation for liquid hydrogen markets
- Planning of hydrogen infrastructure

2030

- **40 GW** of renewable hydrogen electrolyzers
- New applications in **steel and transport**
- Hydrogen for electricity balancing purposes
- Creation of “Hydrogen Valleys”
- Cross-border logistical infrastructure

2050

- Scale-up to **all hard-to-decarbonise sectors**
- Expansion of hydrogen-derived **synthetic fuels**
- EU-wide infrastructure network
- An open international market with € as benchmark

Hydrogen – an investment agenda

Next Generation EU, Invest EU, Cohesion Policy, CEF-E, CEF-T
ETS Innovation Fund, Horizon Europe

Renewable electricity
production

€220-340 BLN

Renewable
hydrogen

€24-43
BLN

Hydrogen
transport,
distribution,
and storage

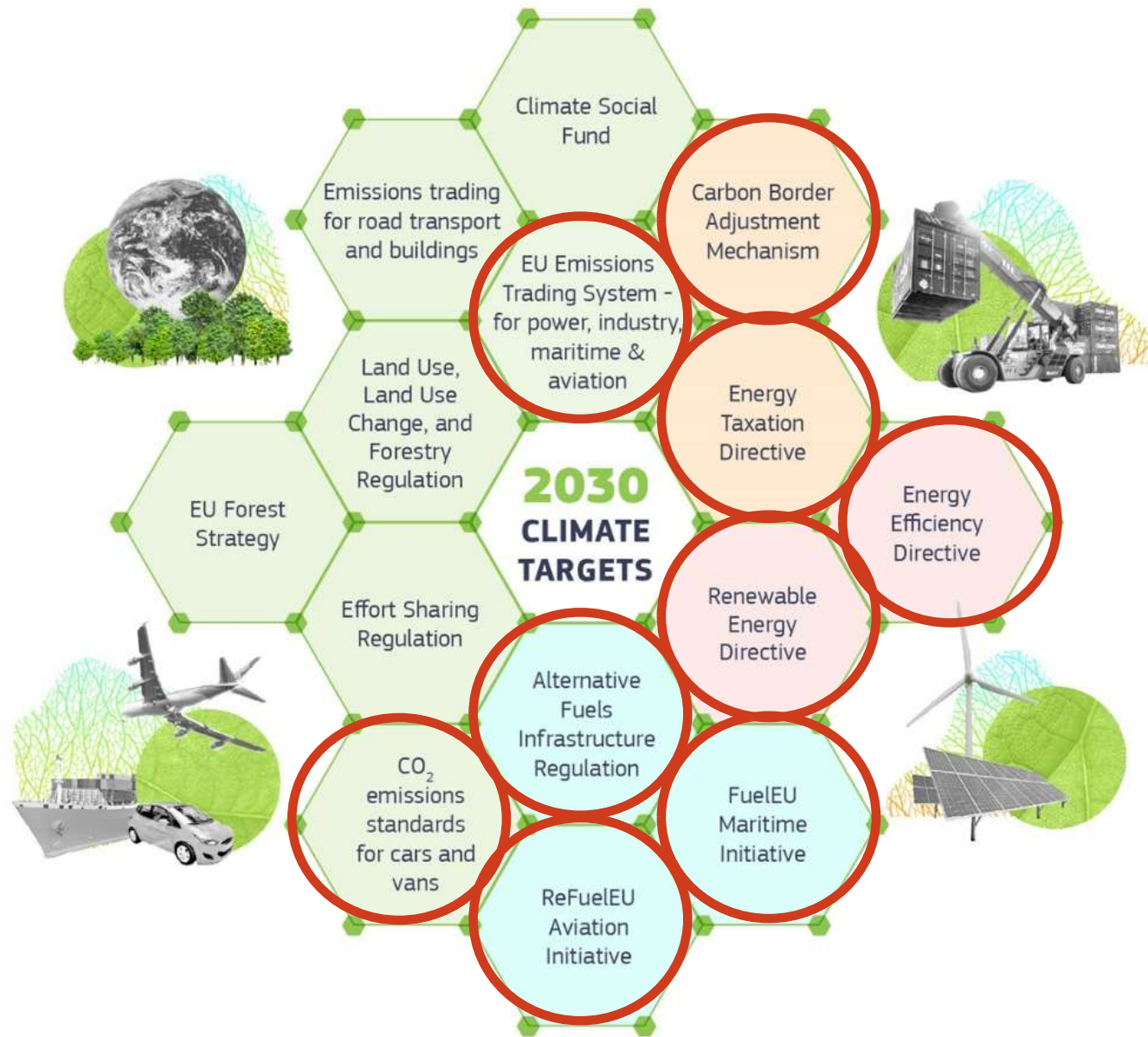
€65 BLN

Transport
(HDV)
€13 BLN

Steel
€8 BLN

European Clean Hydrogen Alliance

H2



Renewable Energy Directive

- **specific sub-targets** for the consumption of renewable H2 for hard-to-decarbonise applications in:
 - the industry: 50% of hydrogen consumption by 2030
 - transport sector: 2,6% of energy consumption by 2030
- changes the framework for **accounting renewable hydrogen** towards the national contribution by Member State
- extends the **certification framework** to all renewable fuels, including renewable hydrogen



A closer look to renewable hydrogen sub-targets

Hydrogen Strategy target

40 GW
electrolysers

Cost-optimal sectoral
allocation (modelling)

15,7 Mtoe of
renewable hydrogen

4,5 Mtoe for
energy

3,1 Mtoe in
non-energy

1,5 Mtoe in
refineries*

6,6 Mtoe in
transport

*RFNBOs used
for transport
fuels

14,5 Mtoe
industrial hydrogen
consumption 2030

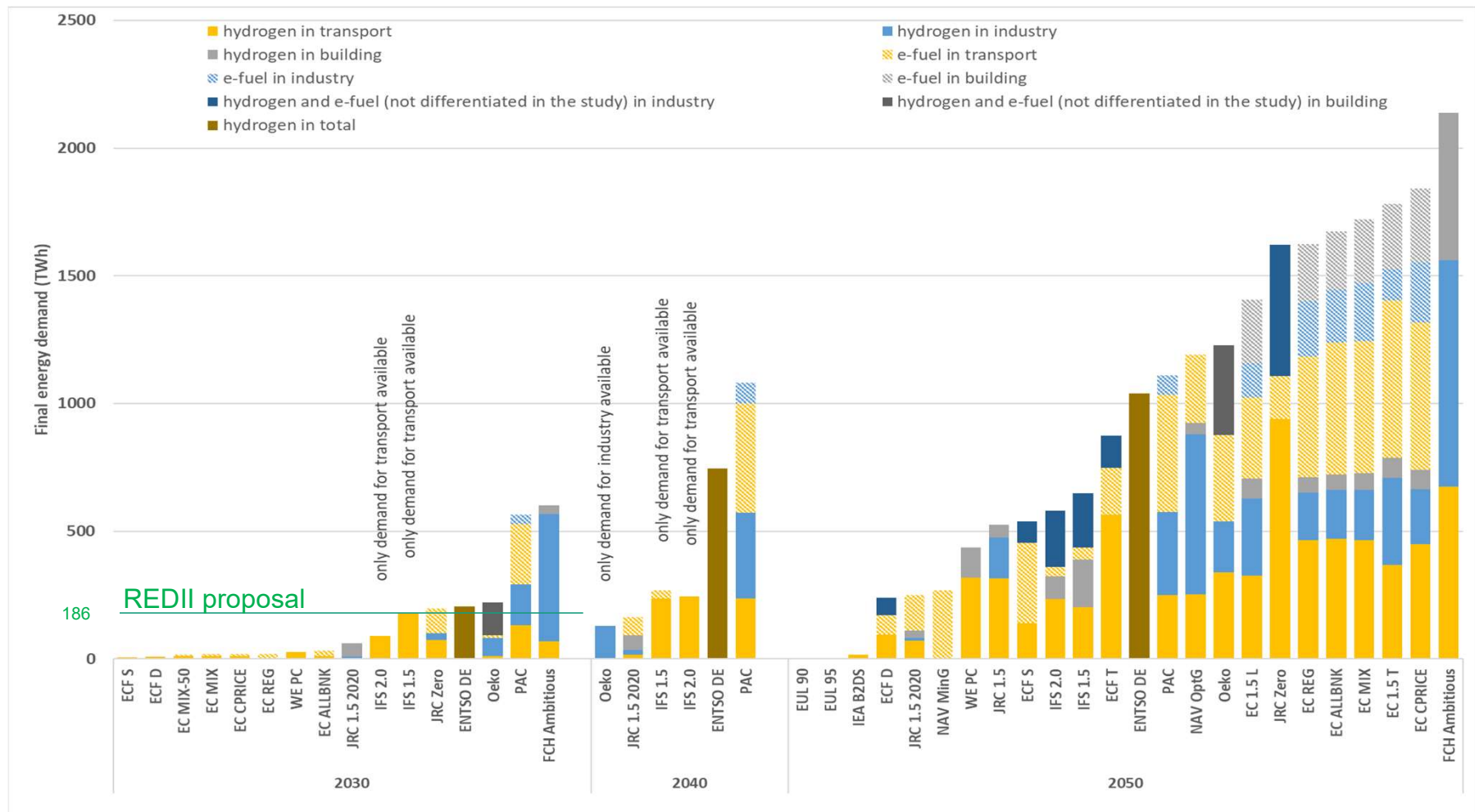
52,6% ~ 50%

RED proposal
sub-targets

2,6%

304 Mtoe
transport energy
consumption 2030

Future hydrogen demand



Strengthening of EU ETS

- **Strengthening of existing ETS** with an increase of 18 pp of emission reduction (from -43% to -61% by 2030)
- Inclusion of all **hydrogen production facilities** (>25t/day)
- Remove **free allowances for aviation**
- Will now include **maritime transport**
- **New EU ETS extension** for road transport and buildings, operational as of 2025



Policy measures on transport

- Stronger **CO2 emissions standards** for cars and vans
- Revision of **Alternative Fuels Infrastructure Regulation**: hydrogen refuelling stations across major transport corridors
- **ReFuelEU Aviation Initiative**: Obligation on fuel suppliers to aircraft carriers
- **FuelEU Maritime Initiative**: Greenhouse gas emission intensity thresholds for ships calling at European ports

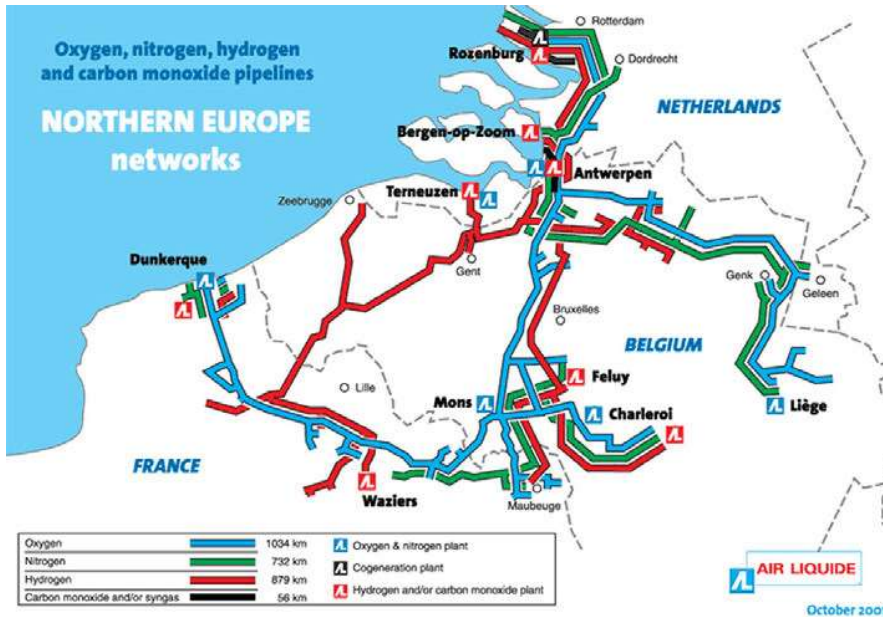


Policy measures on taxation, trade and markets

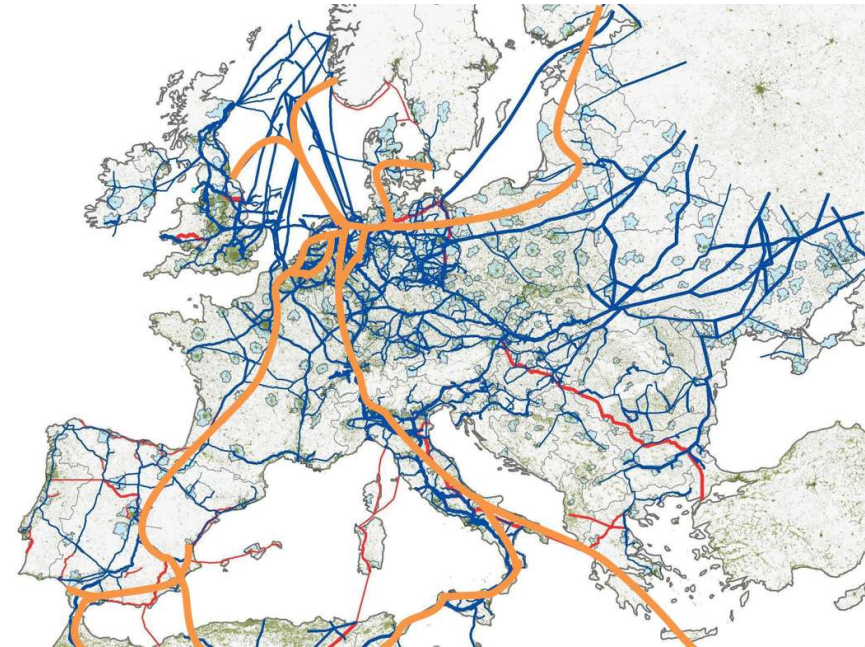
- Revision of the **Energy Taxation Directive**:
Shifting tax incentives away from fossil fuels and towards clean technologies
- New **Carbon Border Adjustment Mechanism**:
Carbon price on imports of a targeted selection of products to prevent 'carbon leakage'
- **Proposal for Gas and Hydrogen Markets Decarbonisation** (due in December)



Hydrogen – infrastructure



Existing hydrogen infrastructure:
 Belgium – 613 km
 Germany – 376 km
 France – 303 km
 Netherlands – 237 km



Future hydrogen infrastructure:

Source: Hydrogen Europe, 2x 40 GW initiative

Hydrogen – the international dimension

Bilateral and regional cooperation

- Clean hydrogen support under Neighbourhood Investment Platform
- Joint hydrogen research and development programmes through Association Agreements
- Hydrogen collaboration under the Africa-Europe Green Initiative

Multilateral fora

- CEM and MI: Exchange of latest technological developments
- IEA and IRENA: Role of hydrogen and hydrogen policies
- Mainstream hydrogen in energy, diplomacy, climate, research, trade and international cooperation

International markets

- Set common GHG emission reduction standards and sustainability criteria
- Benchmark for euro denominated transactions in hydrogen
- Facilitate emergence of rules-based hydrogen market



Thank you

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