

EU Hydrogen Regulatory Framework

The Fit for 55 package's relevance for creating a concrete EU hydrogen market

EUKI Workshop
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Future laboratory for the legal framework of the energy transition

- ▶ Non-profit, specialised research institute
- ▶ Guiding Question: How must the legal framework change in order to achieve energy and climate policy goals?
- ▶ Interdisciplinary research partners, close exchange with practice
- ▶ Scholarly debate and advice in legislative processes

Agenda

- ▶ Framework: EU Commission Hydrogen Strategy
- ▶ Examples of the new EU framework for (clean) hydrogen
 - Hydrogen Infrastructures in the TEN-E Regulation
 - Clean Hydrogen in the reform of the Renewable Energy Directive
 - (Clean) Hydrogen State aid and green finance
 - (Clean) Hydrogen in other Fit for 55 acts and measures



Framework

EU Commission Hydrogen Strategy

EU Commission on Hydrogen „A hydrogen strategy for a climate-neutral Europe”

- ▶ Terminology:
 - **Renewable hydrogen/clean hydrogen:** hydrogen produced through the electrolysis of water (in an electrolyser, powered by electricity), and with the electricity stemming from renewable sources (zero emissions).
 - **Electricity-based hydrogen:** produced with electricity regardless the source (close to zero emissions).
 - **Fossil-based hydrogen.**
 - **Fossil-based hydrogen with carbon capture** (considering the effectiveness of CC technology).
 - **Low-carbon hydrogen:** encompasses fossil-based hydrogen with carbon capture and electricity-based hydrogen, with significantly reduced full life-cycle greenhouse gas emissions compared to existing hydrogen production.
 - **Hydrogen-derived synthetic fuels.**

EU Commission on Hydrogen „A hydrogen strategy for a climate-neutral Europe”

- ▶ **Hydrogen Roadmap:**
 - Until 2024: plus (min.) 6 GW (heavy industry, transport) with 1 million to renewable hydrogen.
 - 2025-2030: plus (min.) 40 GW (heavy industry, transport) with 10 million to renewable hydrogen.
 - From **2030: maturity of renewable hydrogen.**
- ▶ New **legal framework for infrastructure, finance and market.**
- ▶ **On EU-level:** Alliances and Working Groups, pilot projects and **Carbon Contracts for Difference** programs in particular for green hydrogen in industry.
 - Also: IPCEI initiative for green hydrogen.

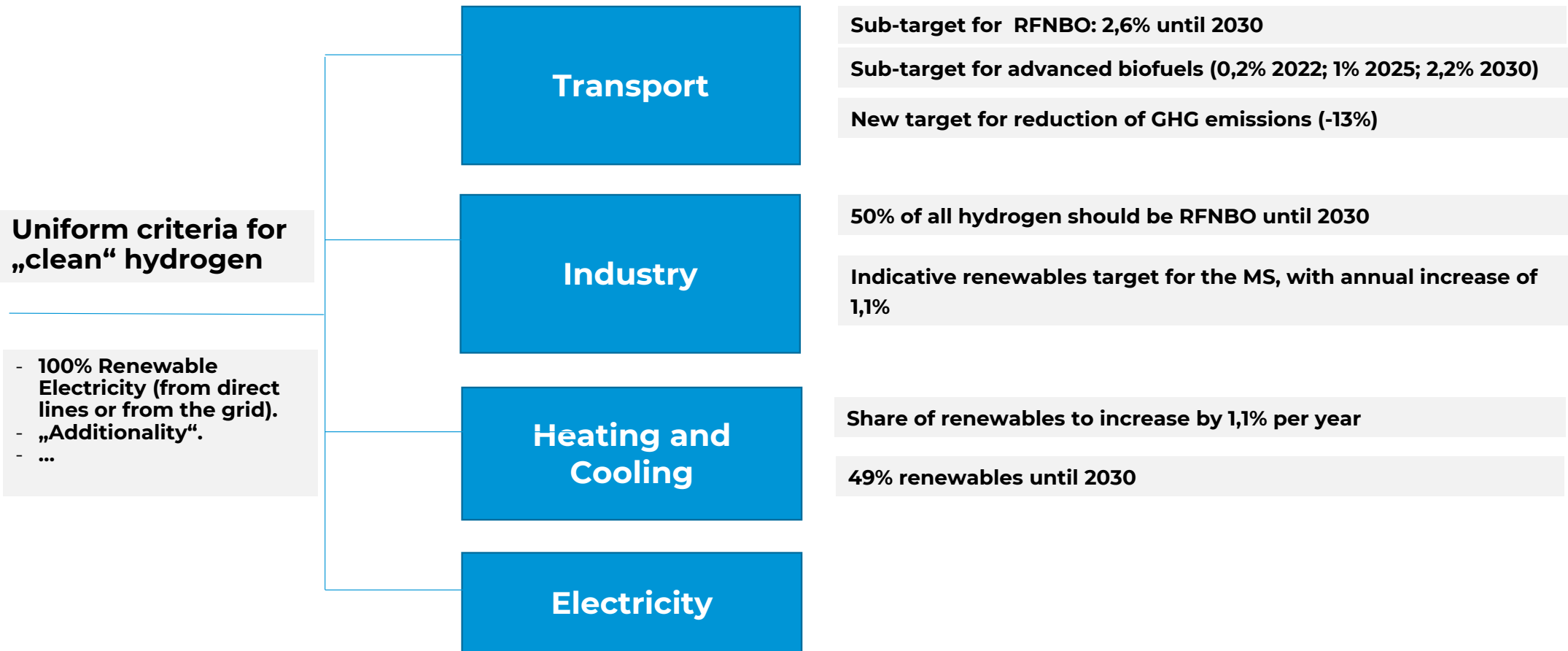


Examples of the new EU hydrogen framework

Hydrogen infrastructure in the EU COM proposal for the TEN-E Regulation

- ▶ „**Projects of common interest**“ = certain transeuropean infrastructure projects for the transport of certain energy sources, benefiting from:
 - **Facilitated (cross-border) administrative procedures;**
 - Access to **EU finance** (Connecting Europe Facility);
 - Consideration in the **network development plans.**
- ▶ Inclusion of hydrogen proposed for (new categories of PCI):
 - **Hydrogen projects** = new and upgraded (gas) transmission infrastructure, storage, equipment.
 - **Electrolysers** = more than 100 MW and leading to at least -70% GHG emission reduction.
 - **Smart gas grids** = infrastructures and equipment that allow for the integration of renewable and low carbon energy, including hydrogen.

Clean hydrogen in the EU COM proposal for the RED III



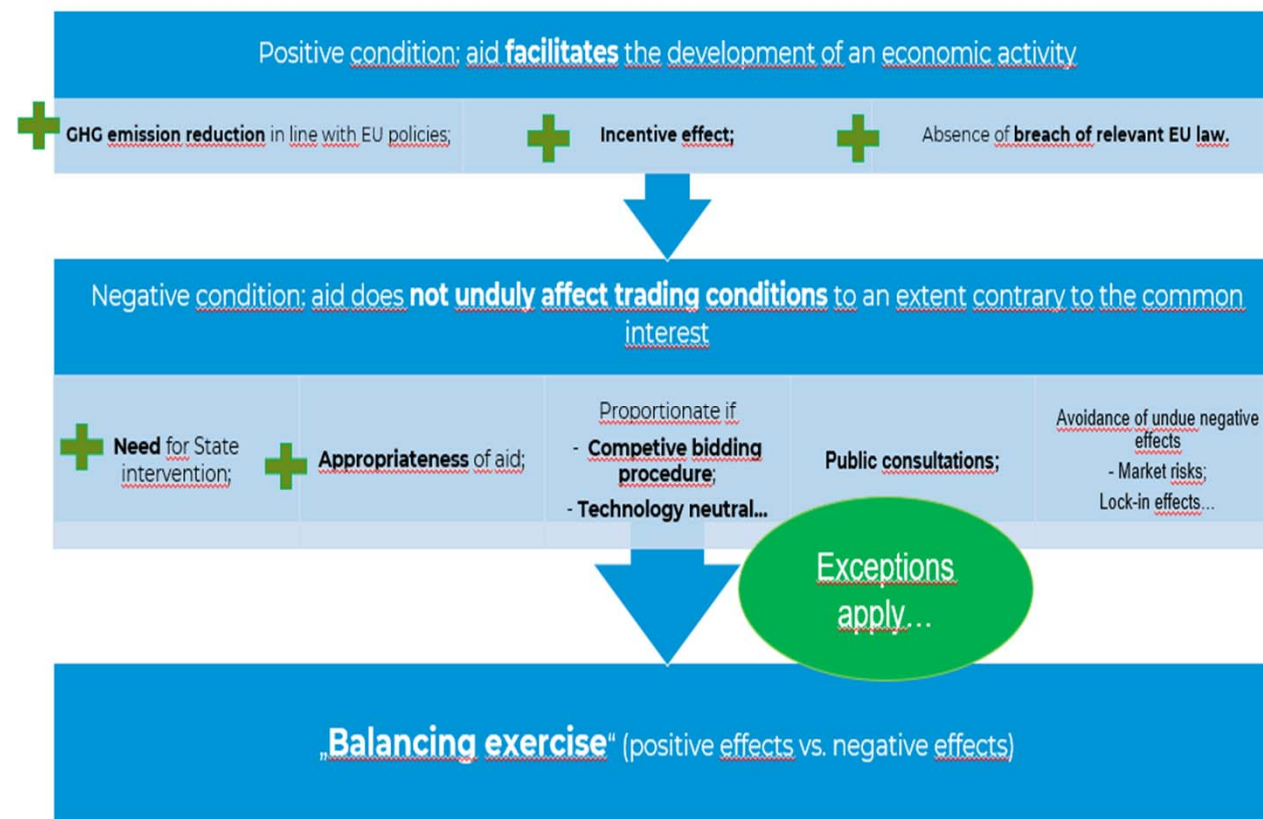
(Clean) hydrogen in other Fit for 55 acts and measures

- ▶ Measures to speed up deployment of different **refuelling infrastructure**:
 - Revision of the Alternative Fuels Infrastructure Directive and the Revision of the Regulation on the TransEuropean Transport Network.
- ▶ **Financial support** e.g. in the course of ETS Innovation Fund (incl. CCFDs).
- ▶ Measures to create „**level playing field**“:
 - Inclusion in the **emission trading system (ETS)**.
 - **Energy taxation** reform to consider energy content.
 - **Gas market package** to address for grid access and use, as well as market rules.
 - **EXPECTED 14.12.2021**

(Clean) hydrogen in the EU COM's proposals for State aid

► Climate, Environmental and Energy Aid Guidelines 2022-2030

- Notification and approval by the EU Commission required
- No specific aid category for (clean) hydrogen, but
- Chapter 4.1 Reduction of GHG Emissions
- Chapter 4.3 Clean Mobility (cars and charging infrastructure)
- Chapter 4.9 Energy Infrastructure (new and remodeling, electrolyzers)



(Clean) hydrogen in the EU COM's proposal for State aid

▶ **General Block Exemption Regulation**

- „Exemption“ = no formal notification procedure, simple information to the EU Commission sufficient.

▶ **No specific category for (clean) hydrogen, but spread over several provisions:**

- Art. 36 (generally for **investment aid for environmental and climate protection** where exceeding - minimum - EU rules);
- Art. 36a (**investment aid for charging and refueling infrastructure**);
- Art. 36b (**investment aid low-emission cars**);
- Art. 41 (**investment aid** renewables, **clean hydrogen** and cogeneration);
- Art. 43 (**operating aid renewables and clean hydrogen in small installations and renewable energy communities**).

(Clean) hydrogen in the EU COM proposals for green finance EU Taxonomy

- ▶ **Taxonomy** = framework for the evaluation of sustainable economic activities
 - No obligation to be sustainable, but obligation to report on sustainability
 - With non-financial reporting obligations = „**naming and shaming**“.
 - EU Commission to adopt „delegated acts“ for the respective fields of activities.

- ▶ In the **field of climate**:
 - Do activities **contribute to EU climate goals**/help with climate change adaptation?
 - Do they cause any negative impacts („**do no significant harm**“ principle)?
 - Specifically for hydrogen: **No distinction between renewable/electricity-based/other forms of hydrogen.**
 - Criteria for hydrogen production define **CO₂-emission limit**, but do not require 100% renewable: Life-cycle emissions for hydrogen at 73,4% of fossil fuels.

**Thank you for your
attention.**

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