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TAKING STOCK OF THE HYDROGEN REGULATORY FRAMEWORK

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Roundtable on
Climate Change and
Sustainable Transition

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Regulatory framework overview

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- H2 & Gas Regulation
- ETS
- The energy crisis, imports and CBAM

What others are doing - the USA example

The ERCST recommendations

The hydrogen regulatory landscape

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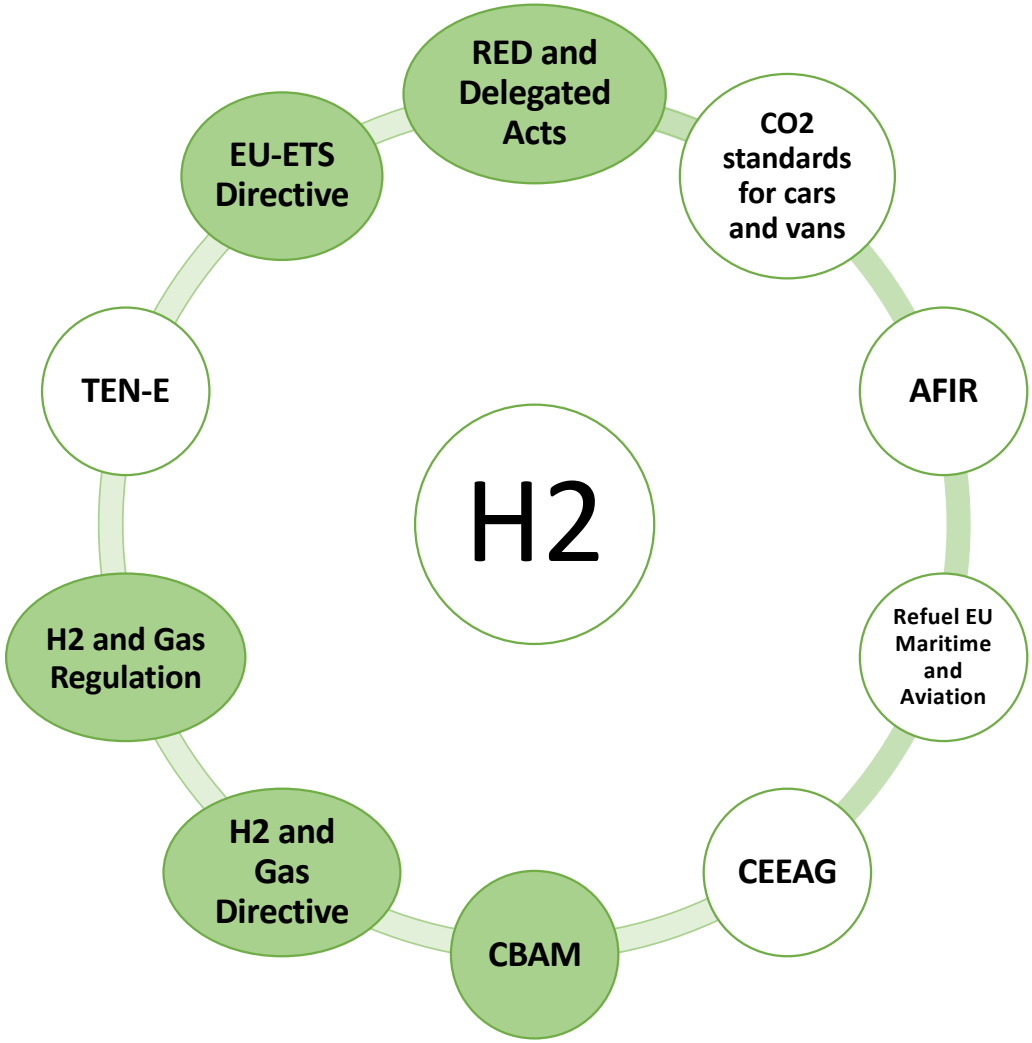

RED revision timeline

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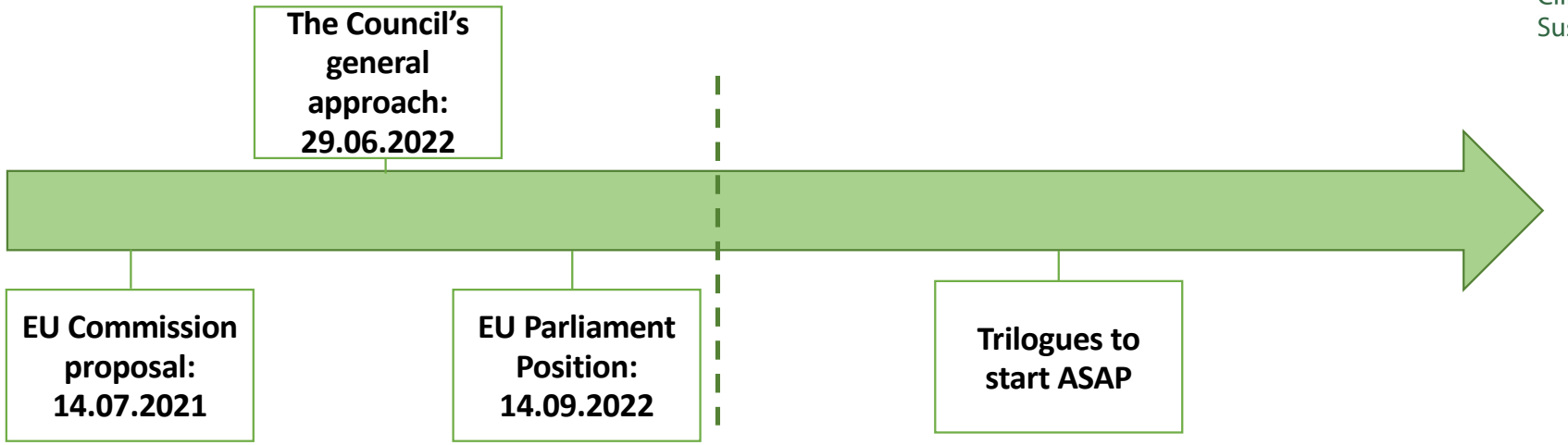

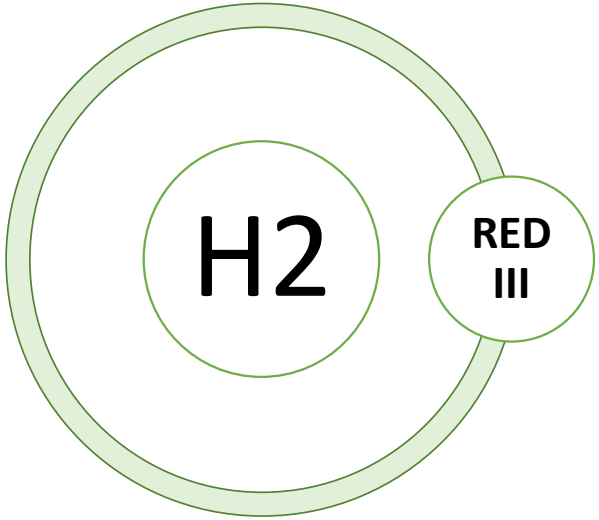

RED Revision

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RED III

European Commission

Binding target for industry: 50% RES H2 by industry in 2030. (75% REPowerEU)

Binding Target for transport: Share of RFNBOs at least 2,6 % by 2030. (5% REPowerEU)

Additionality: (Art. 27.3.) Additionality applies beyond the transport sector

Methodology: (New art. 29 a.) for assessing RFNBOs emissions savings, a 70% threshold is inserted.

European Parliament

Binding target for industry: 50% RES H2 in industry by 2030 and 75% by 2035

Binding Target for transport: Share of RFNBOs at least 5,7% including 1.2% in the hard to abate maritime sector

Additionality: moved to the articles of the Directive with relevant changes

Methodology: Just explicitly mentions full life cycle approach for Recycled Carbon Fuels.

Council

Binding target for industry: 35% by 2030 and 50% by 2035 RES H2 in industry

Non-binding target for transport: Share of RFNBOs at least 2,6% or 5,2% with multiplier by 2030.

Additionality: same as EC

Methodology: (Art. 29 a.) It explicitly mentions the methodology should include indirect emissions.

REPower EU aims for 10 Mt of EU produced and 10 Mt of imported H2

Delegated Act on Additionality timeline

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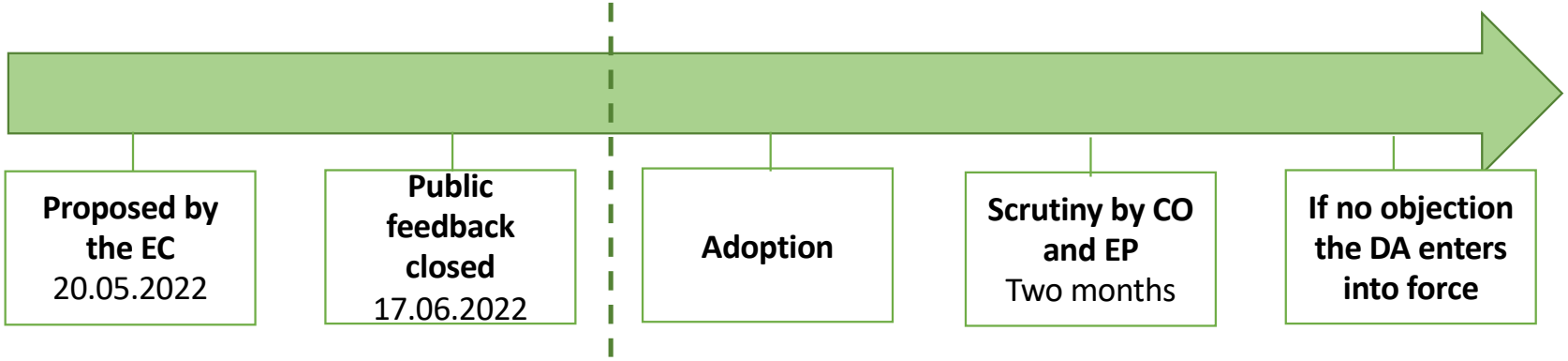

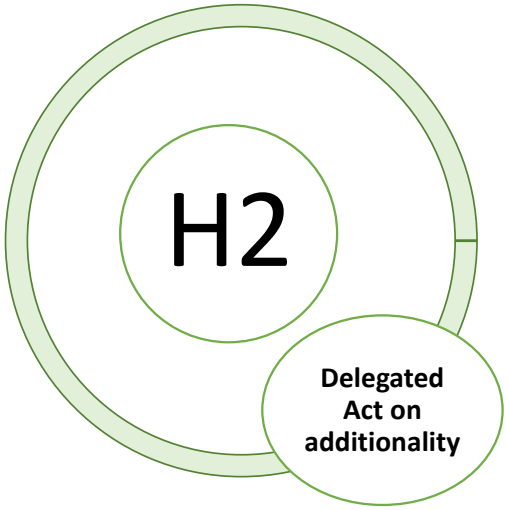

EC Delegated Act: RES electricity requirements

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- This DA stablishes the requirements to consider electricity used to produce RFNBOs as 100% renewable - under three different scenarios and in two different time frames (transitional phase until 2027, final phase after 2027)
  1. RES installation is directly connected to the electrolyzer
  2. Electrolyzer using electricity from grid through a PPA
  3. Electrolyzer using electricity from grid with RES share of at least 90%
- There are three main requirements for point 2:
  - A 36-month time window
  - Temporal correlation (1 hr. / 1 month Transition Phase)
  - Geographical correlation (same bidding zone)

EP // CA 13 (+314 -310)

Introduces some criteria in the text of the Directive and make changes on some of thse criteria:

- No mention to the 36-month window
- **Temporal correlation** is changed to a quarterly basis after 2030; the EC will decide whether monthly, quarterly or yearly.
- **Geographical correlation:** same country

Hydrogen and Gas Directive timeline

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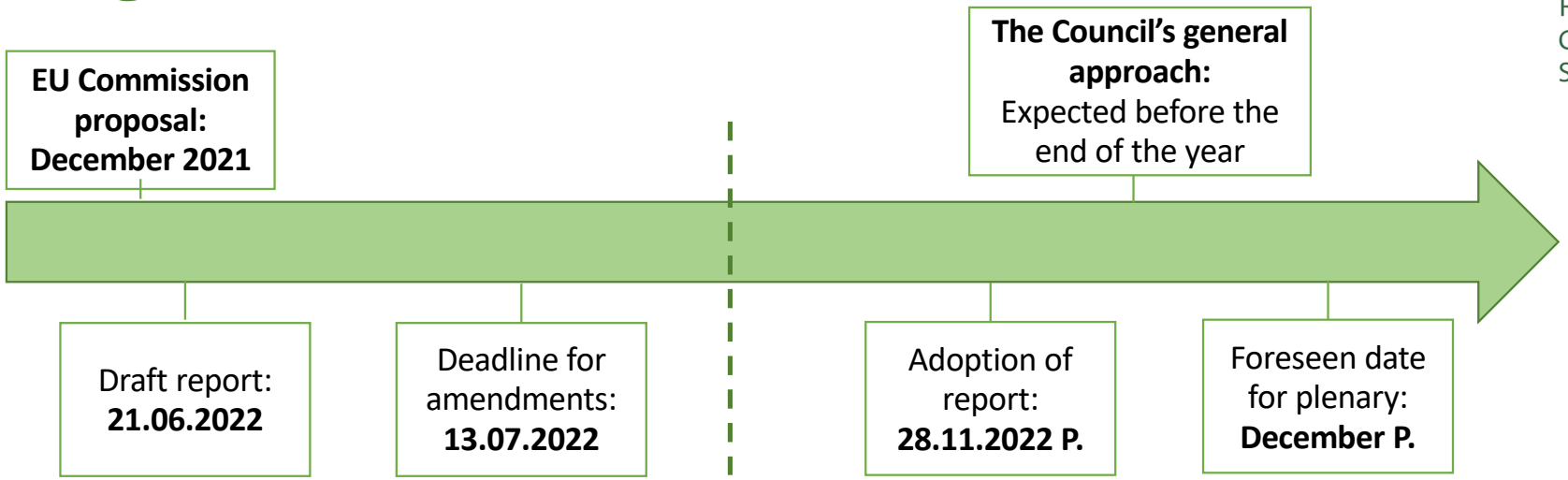

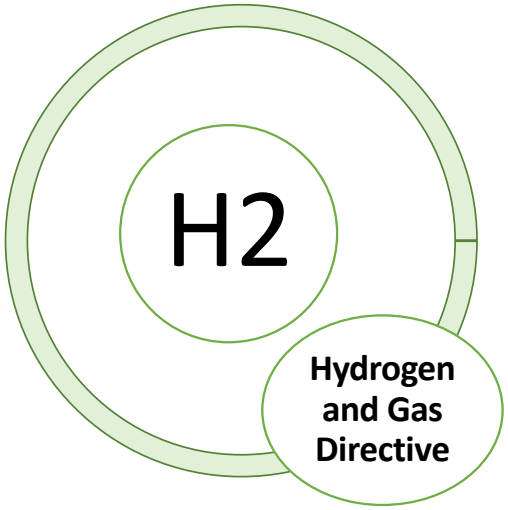

Hydrogen and Gas Directive

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Issue	European Commission	European Parliament Draft Report
• **Incomplete definition for low carbon-hydrogen**	• Hydrogen which meets a GHG emission reduction threshold of 70%. • Delegated act to complete the definition will be proposed in 2024	• Introduces a fossil fuel comparator of 94 gCO_2eq/MJ and defines the GHG scope, (at least upstream and downstream emissions, including methane leakage) in the articles of the Directive
• **Vertical unbundling (Art. 62)**	• Hydrogen networks operators unbundled by 31.12.2024. If the network belongs to a vertically integrated company: OU, ISO or ITO (ITO no longer eligible after 2030)	• All three models should be an option and ITO should be elegible after 2030
• **Horizontal unbundling (Art. 63)**	• It shall be independent at least in terms of its legal form	• Deletes provisions on horizontal unbundling (in order to facilitate repurposing of gas pipelines into hydrogen)
• **Hydrogen network operator definition (Art. 2)**	• Includes both transmission and distribution	• Distinguishes between H2 distribution and transmission system operators. Extend the application of unbundling rules to H2 distribution system operators
• **Prioritization on industrial sectors**		• Priority should be given to the hard to abate sectors and appropriate quality of hydrogen
• **Third party access (Art. 31)**	• Possibility of negotiated third party access until 2030	• Priority should be given to those that can demonstrate the highest potential for emission reduction. Priority for the hard to abate sectors

Hydrogen and gas Regulation timeline

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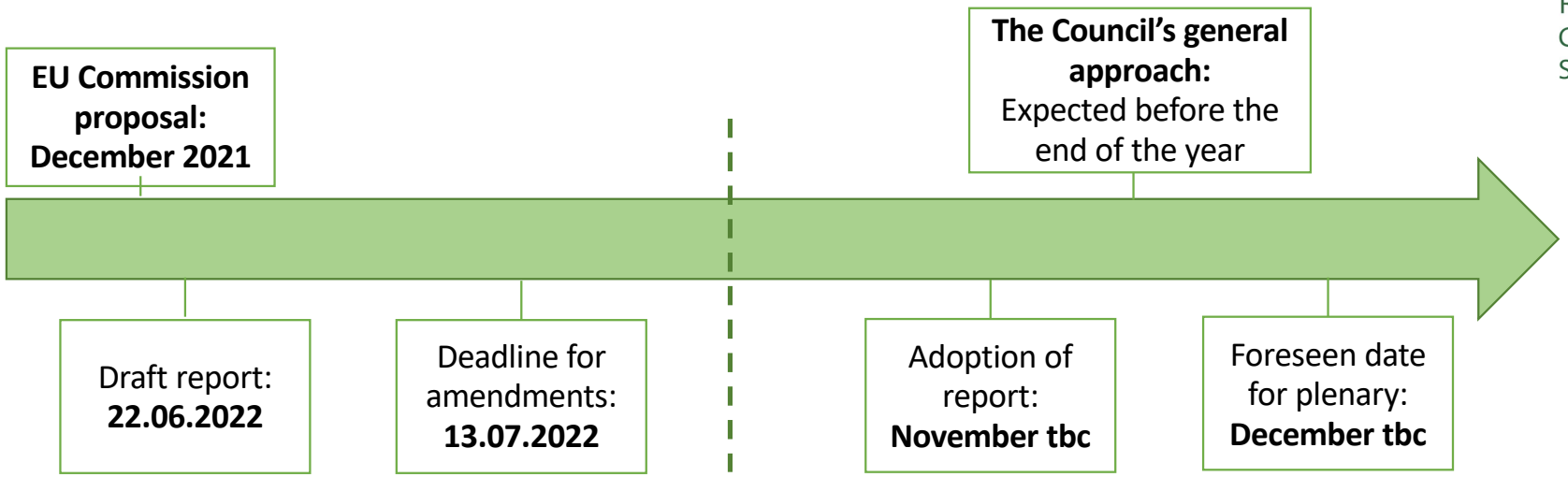

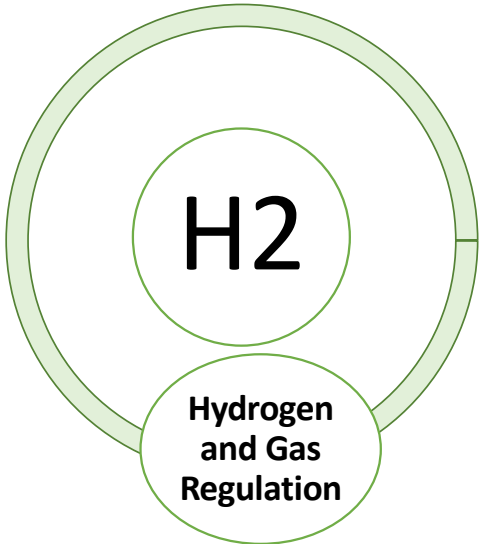

Hydrogen and gas Regulation

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Issue	European Commission	European Parliament Draft Report
• **Governance (Art. 40 Regulation)**	• Creation of ENNOH as an independent body.	• Rename ENTSO for Gas as the joint EU organization for Gas Transmission System Operators and Hydrogen Network Operators (ENTSOG&H) and incorporate Hydrogen Network Operators - an attempt to leverage synergies between the gas a hydrogen sectors and potentially to facilitate repurposing.
• **Blending (Art. 20 Regulation)**	• EU-wide allowed cap of 5% at cross-border interconnection points.	• 5% reduced to 2%. The blending of hydrogen into the natural gas system is a last resort solution, as it is less efficient compared to using hydrogen in its pure form and diminishes the value of hydrogen
• **Cross-subsidization and separated real asset base (RAB) (Art. 4)**	• If a network operator provides regulated services for gas and hydrogen, it will need to have separate asset base. • Financial transfers from one RAB to another may be allowed upon approval of the regulatory authority.	• Less restrictive than the Commission's proposal.

H2 and the EU-ETS revision timeline

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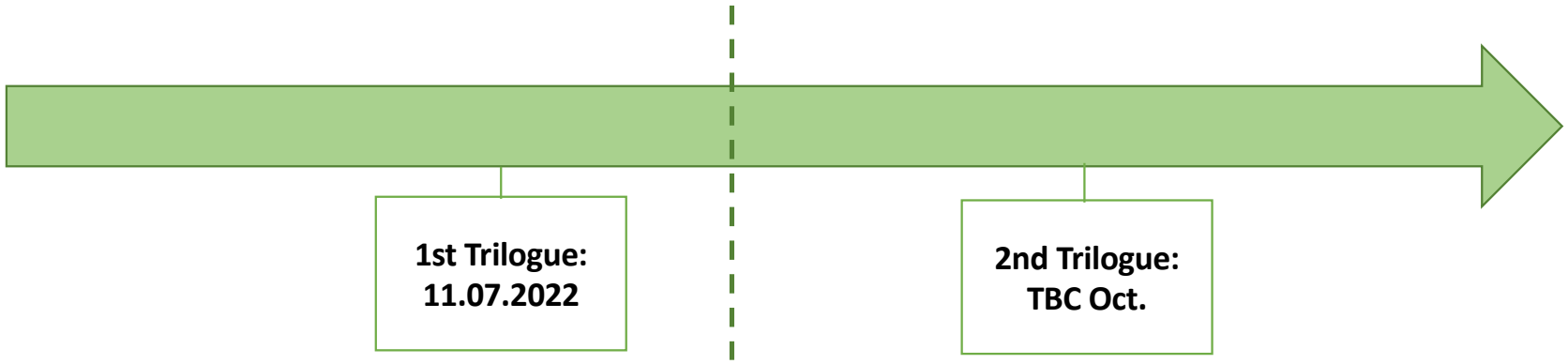

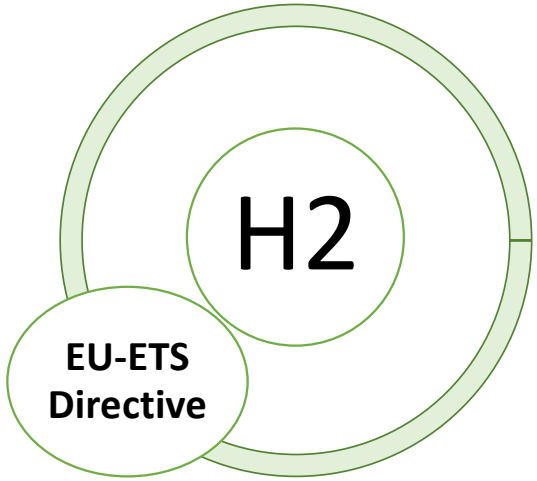

H2 and the EU-ETS revision

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The European Commission proposal:

- Currently there is one benchmark for hydrogen (grey hydrogen) = grey hydrogen producers are entitled to free allowances
- The EC wants to extend free allocation to less CO_2 intensive types of hydrogen based on the principle “one product, one benchmark”
- Implementation of benchmarks - update expected in 2026
- Still awaiting the Delegated Act on CCfDs within the framework of the Innovation Fund

The European Parliament position:

- Greater emphasis for renewable H2 in the Innovation, Modernization, Climate Investment and Ocean Fund

The EU competitiveness vis-à-vis third countries: *The US Inflation Reduction Act*

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- Includes a technology neutral approach to incentives
- It offers a tax credit, available for 10 years – level depending on the level of emissions of H2:
- If hydrogen is produced with no carbon emissions, a tax credit is maxed out at $3 per kilogram of H2
- It scales down proportionally depending on the amount of emissions released
- It does not incentivise hydrogen production with a carbon intensity exceeding 4kg of CO2e/kg of H2
- It takes a well-to-gate approach to measure the lifecycle emissions (includes upstream methane emissions)
- A $3/kg payment, or credit, by the US government could drive the effective cost of producing green hydrogen to $0.73-$3.5/kg of H2

The energy crises, CBAM and imports

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- Effect of energy prices on imports of H2?
  - The current high gas and electricity prices may foster imports of grey H2 (in the short term) and of the renewable H2 (in the medium term)
  - The energy crisis coupled with a stringent regulatory framework will make it harder to achieve the aspirational targets of 10 Mt of renewable H2 production in the EU and will incentivise imports.
- Is CBAM a solution?
- Will DAs on additionality and methodology apply to imports? How to prevent circumvention of their requirements?

The ERCST recommendations

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- Need for a complete and comprehensive regulatory framework for hydrogen - as soon as possible (i.e. definitions, benchmarks, DAs, CCfDs)
- Ensuring a technology neutral approach to incentives where producers are rewarded according to the CO_2 footprint of the different production processes
- Avoid overregulation - priority for flexible market solution, especially at the early stage of its development

Questions for discussion

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- Is the proposed regulatory framework fit to ramp-up the EU H2 economy during the current energy crisis?

- Does the proposed regulatory framework foster the competitiveness of the EU hydrogen economy vis-à-vis third countries (e.g. the USA)?

- What pieces are missing or could be improved?