International Power-to-X Hub

Green Hydrogen Certification Workshop

Certifying Greenhouse Gas Accounting and Sustainability Criteria for Hydrogen and PtX Products

19 June 2023 – Jordan-German Workshop

International PtX Hub

Supported by: Federal Ministry for Economic Affairs and Climate Action — on the basis of a decision by the German Bundestag

IKI International Climate Initiative

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

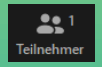
Digital Housekeeping

Microphone always off when you are not contributing (avoid noise).

Camera on if the internet connection allows it

Please **raise your hand** if you want to contribute:

Feel free to use the **chat** for comments and questions (please indicate to whom your question is addressed, NAME: QUESTION)



Rename yourself if necessary (NAME | INSTITUTION) > right click on your video and choose: rename

If you have technical problems, please reach out: **Philip.katz@ecologic.eu or via phone: +4930 86880-142**

In collaboration with:

Supported by:

on the basis of a decision by the German Bundestag

Implemented by

Agenda

1. **Survey of participants**
2. Background and context for the EU hydrogen certification rules and procedures
3. How do certification systems certify environmental qualities?

Coffee break

4. Under which conditions the EU considers hydrogen as “of renewable origin”
5. EU methodology for assessing GHG emissions savings from H2-based fuels and from recycled carbon fuels

In collaboration with: eco logic, Öko-Institut e.V., adelphi

International PtX Hub

Supported by: Federal Ministry for Economic Affairs and Climate Action on the basis of a decision by the German Bundestag

IKI International Climate Initiative

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Agenda

1. Survey of participants
2. **Background and context for the EU hydrogen certification rules and procedures**
3. How do certification systems certify environmental qualities?

Coffee break

4. Under which conditions the EU considers hydrogen as “of renewable origin”
5. EU methodology for assessing GHG emissions savings from H2-based fuels and from recycled carbon fuels

In collaboration with: eco logic, Öko-Institut e.V., adelphi

International PtX Hub

Supported by: Federal Ministry for Economic Affairs and Climate Action on the basis of a decision by the German Bundestag

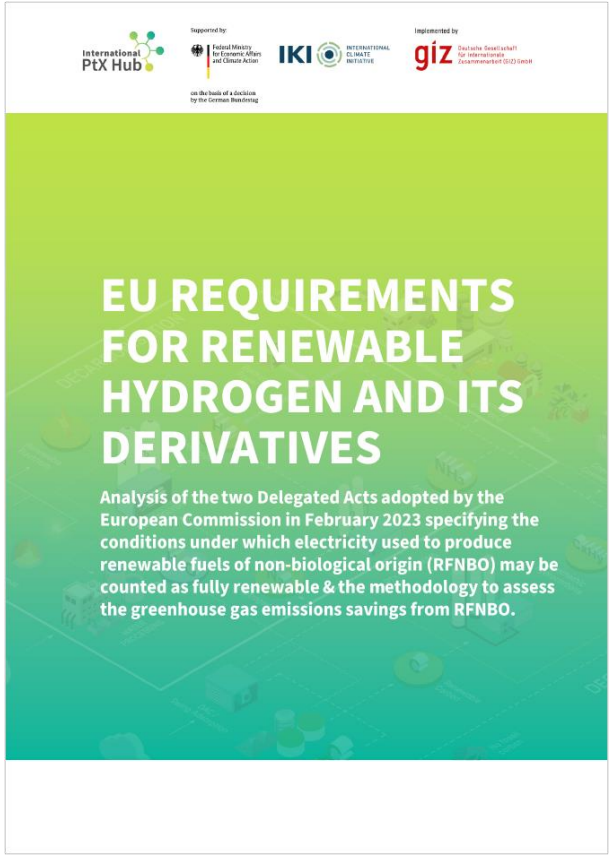
IKI International Climate Initiative

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

These slides will be made available to you after this workshop.

More detailed information on most of the issues covered in the workshop can be found in the paper by the same authors on the PtX Hub website

https://ptx-hub.org/eu-requirements-for-green-hydrogen-and-its-derivatives/



In collaboration with: eco logic, Öko-Institut e.V., adelphi

International PtX Hub
Supported by: Federal Ministry for Economic Affairs and Climate Action
on the basis of a decision by the German Bundestag
IKI INTERNATIONAL CLIMATE INITIATIVE
Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Background and context for the EU hydrogen certification rules and procedures

Raffaele Piria, Ecologic Institute

Disclaimer: No liability can be accepted for the accuracy of the information within this presentation. The contents of the presentation do not constitute a legal interpretation of the Delegated Acts.

In collaboration with: eco logic, Öko-Institut e.V., adelphi

International PtX Hub

Supported by: Federal Ministry for Economic Affairs and Climate Action on the basis of a decision by the German Bundestag

IKI International Climate Initiative

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

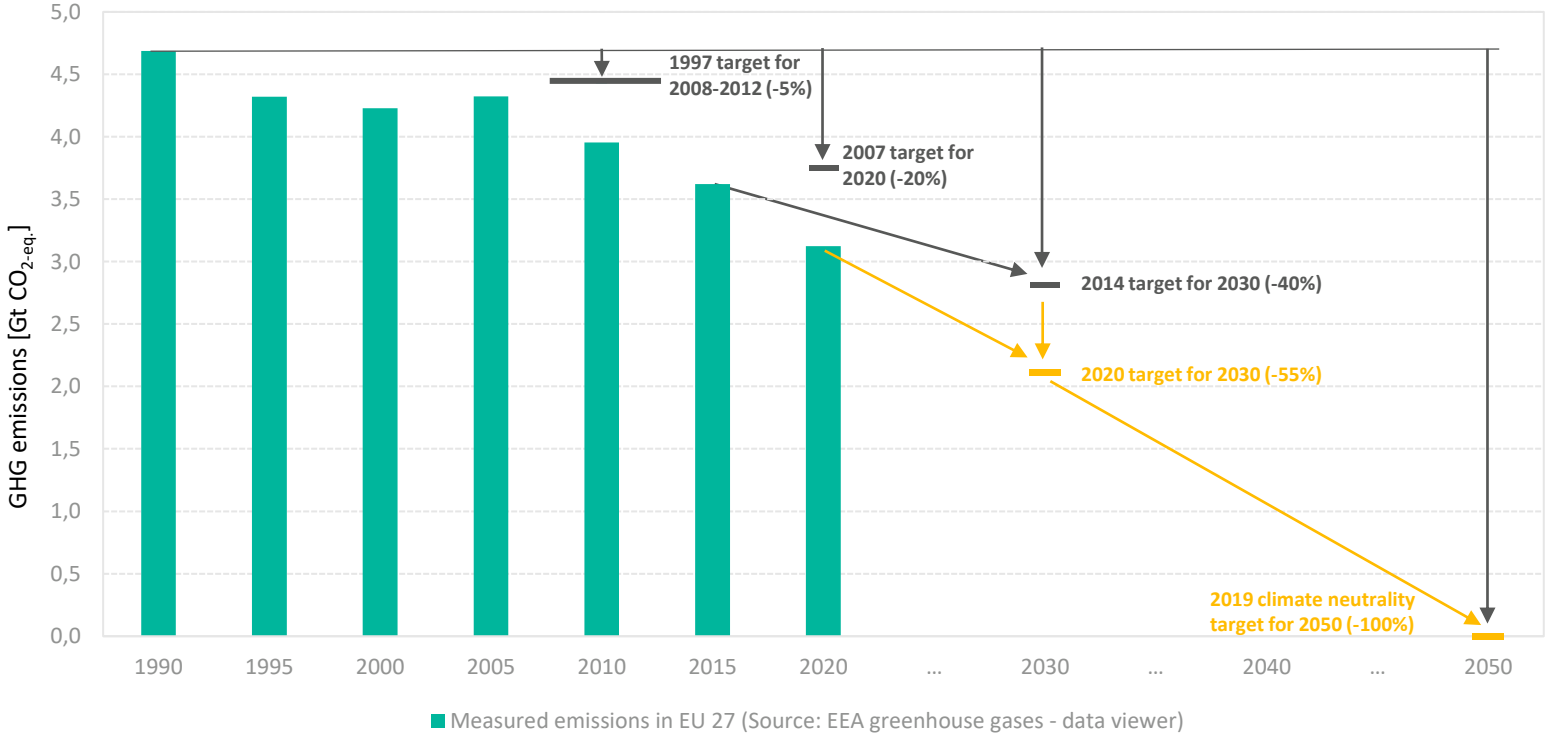
Rapidly increasing ambition of EU climate and energy policies

	GHG emissions compared to 1990	Renewable Energy (RE) % of total energy consumption

	Adoption	Context	Climate Target	Renewables Target
EU Energy and Climate Package	2007-2009	1st comprehensive EU climate & energy policy package	- 20% by 2020	20% RE by 2020
Clean Energy Package	2014-2018	Input to & implementation of Paris Agreement	- 40% by 2030	32% RE by 2030
EU Green Deal / Fit-for-55	2019-2023	Reaction to climate disasters and massive youth climate movement	- 55% by 2030 - 100% by 2050	40% RE by 2030
REPowerEU	2022 ->	Reaction to Russia's invasion of Ukraine	Unchanged	42.5% RE by 2030

45% indicative top up

EU climate achievements and targets



EU ETS and CBAM as key drivers for greening hydrogen supply

EU ETS – Emission Trading Scheme

- Set up in 2005, sharpened several times
- Emitters from covered sector must buy emission allowances. Initially, low prices. Now: real money !
- Cap and trade system: yearly decreasing amounts of emission allowances (EUA) & free market
- It covers large emitters, expanded to more and more sectors like aviation, now shipping comes in (40% of GHG)
- "EU ETS2 " being introduced to cover further 40% of GHG emissions, mainly fuels for buildings and transport
- EUA free allocation for sectors exposed to global competition will be gradually phased out up to 2034, at the same pace as the introduction of CBAM.

CBAM – Carbon Boarder Adjustment Mechanism

- Politically agreed. Transition (only monitoring) phase until 2026. Enters into force gradually in force from 2026 to 2034.
- Will impose a tariff on imports of carbon intensive goods not subject to carbon price at extraction/ production site.
- It covers iron and steel, cement, **fertilizers**, aluminum, electricity and **hydrogen**. By 2026, proposal to include further products at risk of carbon leakage by 2026 (including e.g. **organic chemicals** and **polymers**).

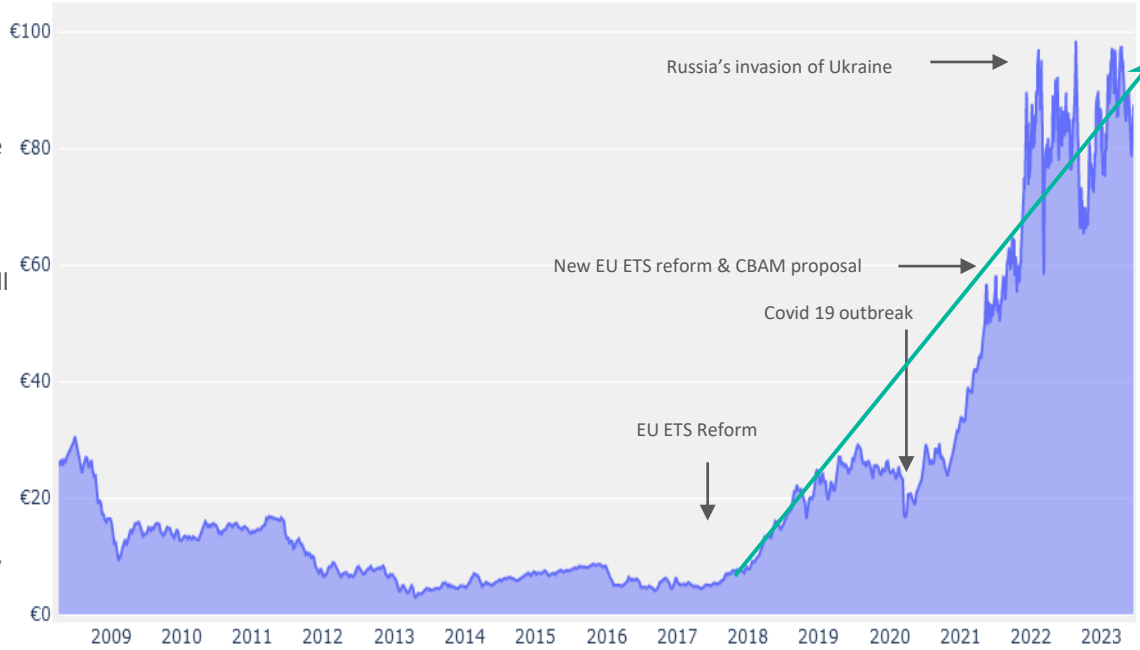
EU ETS Futures as of 16 June 2023

Dec25 € 100.3

Dec24 € 96.5

Dec23 € 91.9

EU Emission Allowances (1t CO_2) price development



Data & chart source: Sandbag Carbon Price Viewer

In collaboration with: eco logic, Öko-Institut e.V., adelphi

International PtX Hub

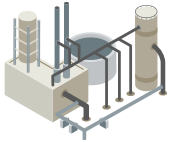
Supported by: Federal Ministry for Economic Affairs and Climate Action, on the basis of a decision by the German Bundestag

IKI International Climate Initiative

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

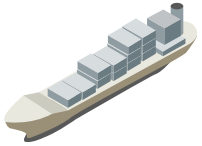
EU and German hydrogen policy framework

Focus: hard to abate sectors

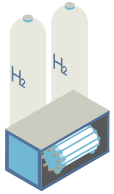


Heavy Industry

Long distance traffic



Heavy goods transport



Long term storage

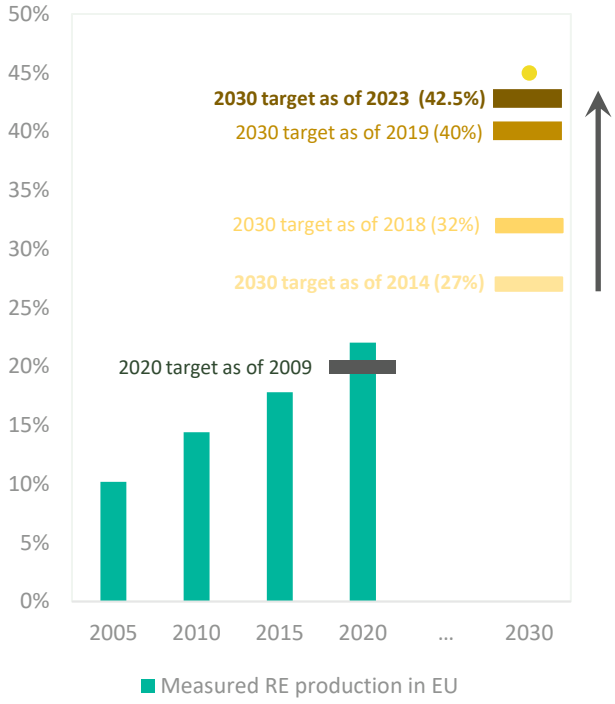
Hydrogen goals for 2030

	EU	Germany
Inland production	10 Mt H_2	~2.5 Mt H_2
Imports	10 Mt H_2	0.42 Mt H_2

Foreign trade and geopolitical aspects

- Future energy imports will be mainly based on renewables energy
- Imports via cable or pipeline from neighboring countries economically more attractive
- However, imports via ships essential to diversify supplier countries and import routes
- Infrastructure investments are planned
- Building new energy partnerships with reliable countries
- EU energy platform for strategic and aggregated procurement in planning

EU renewable energy sources (RE) targets and deployment



EU Renewable Energy Directives (RED)

RED I (2009): 20% by 2020
10% special target for transport sector can be met with biofuels complying with sustainability criteria. It established rules on Guarantees of Origin (GOs).

RED II (2018): 32% by 2030
14% RES target for transport sector, including sustainable biofuels (stricter rules) and RFNBO => "renewable liquid and gaseous transport fuels of non-biological origin". Commission must adopt Delegated Acts with detailed rules on RFNBO.

RED III (2023 – might be approved today – 19 June): 42.5% by 2030 (45% indicative top up)
Based on "Fit for 55": Final political agreement achieved, legal text not yet available. It includes specific RFNBO subgoals both for industrial sector and transportation (focus on aviation and shipping).

RED IV (being discussed):
Based on "REPowerEU" => It might lead to higher RFNBO subgoals for hard to abate sectors.

“Delegated Acts” => What does it mean?

Selected types of EU legal instruments

EU Treaties: Adopted unanimously by Member States, the fundament for all the rest.

Strategic policy documents: Non-binding documents that might e.g. discuss strategic guidelines and targets.
Example: Commission’s Communication EUPower Plan

Directives: Legal acts proposed by Commission, adopted by Parliament and Council, requiring transposition into national law.
Example: Renewable Energy Directive of 2018 (RED II)

Regulations: Legal acts proposed by Commission, adopted by Parliament and Council. They are directly appliable.

Delegated Acts (DA): Adopted by Commission, if empowered to do so by a higher legal act. They will formally enter into force by 10 June 2023.

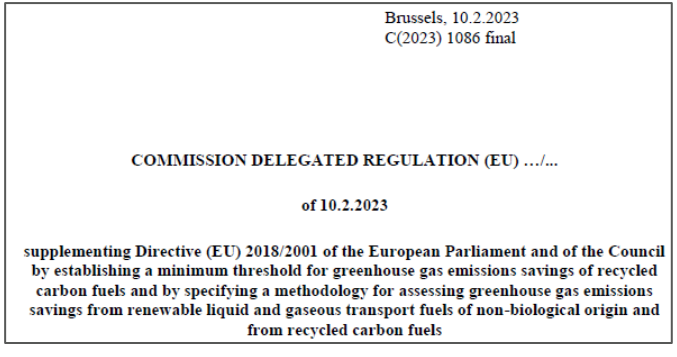
EUROPEAN
COMMISSION

Brussels, 10.2.2023
C(2023) 1087 final

COMMISSION DELEGATED REGULATION (EU) …/...

of 10.2.2023

supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council by establishing a Union methodology setting out detailed rules for the production of renewable liquid and gaseous transport fuels of non-biological origin



Brussels, 10.2.2023
C(2023) 1086 final

COMMISSION DELEGATED REGULATION (EU) …/...

of 10.2.2023

supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council by establishing a minimum threshold for greenhouse gas emissions savings of recycled carbon fuels and by specifying a methodology for assessing greenhouse gas emissions savings from renewable liquid and gaseous transport fuels of non-biological origin and from recycled carbon fuels

Key contents covered by these two Delegated Acts

DA based on Article 27, RED II

- Defines under which conditions electricity used to produce RFNBO can be considered as renewable
- Applies also to RFNBO produced outside the EU (to be considered as renewable under EU law)

DA based on Article 28, RED II

- Sets GHG emission savings threshold for recycled carbon fuels (RCF) to be considered as renewable
- Sets GHG accounting rules for RFNBO and RCF

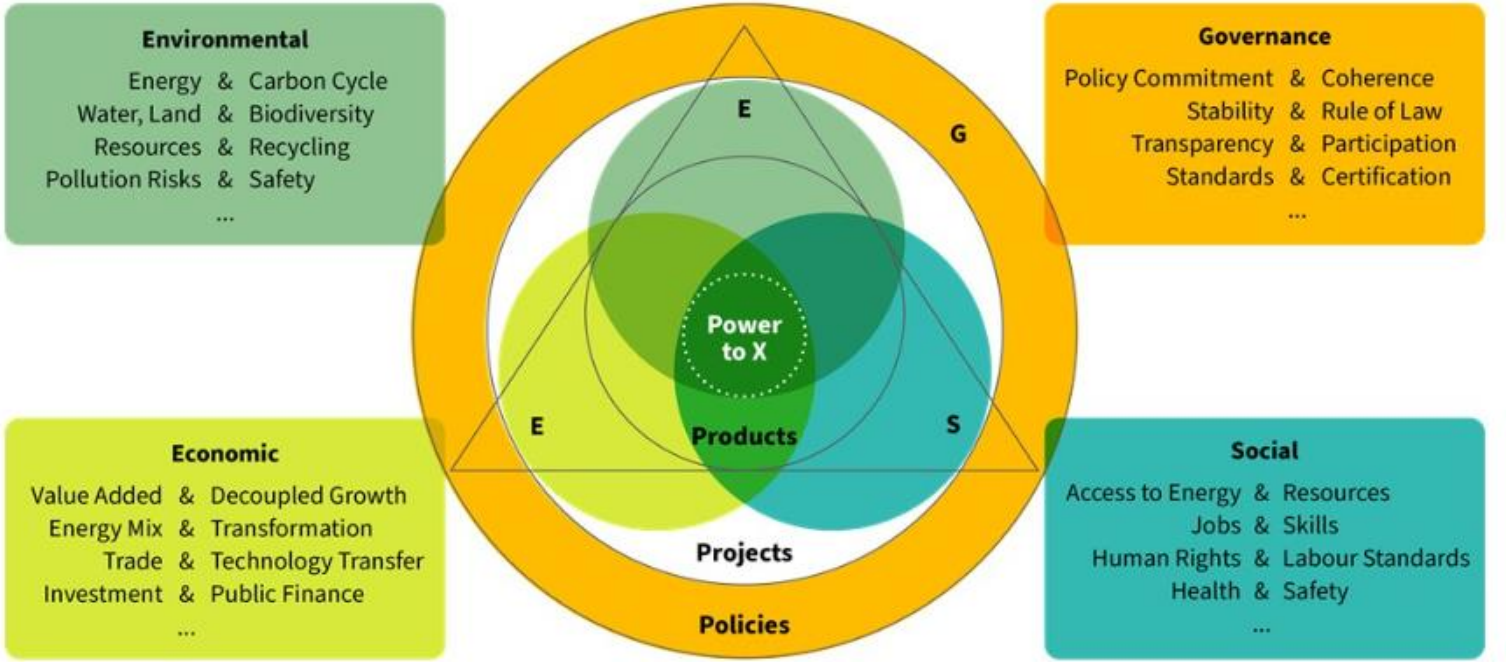
More on them, and on how these features can be certified

=> See the following presentations

Why might these DAs be relevant for stakeholders outside the EU?

- EU importers more likely to buy H_2 or H_2-based energy carriers if they count for the RED II target
- Secondary policies in the EU, e.g. for greening public procurement, are likely to refer to the DAs
- The same applies to private voluntary schemes, e.g. for “green steel”, “green ammonia” etc.
- The EU has often been a global trendsetter in climate and energy policies. Other countries might refer to these rules as well

What about the other dimensions of sustainability?



Source: https://ptx-hub.org/ptx-sustainability/

Thank you for your attention.

In collaboration with:

eco logic

Öko-Institut e.V.

adelphi

International PtX Hub

Supported by:

Federal Ministry for Economic Affairs and Climate Action

on the basis of a decision by the German Bundestag

IKI INTERNATIONAL CLIMATE INITIATIVE

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH