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Dutch RFNBO certification pilot

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ISCC event on RFNBO's – Dec. 1, 2022

Agenda

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2 Pilot objective and preparation

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1. Introduction

Introduction: Hydrogen delegated acts

For grid-connected electrolysers, delegated act 27.3 sets requirements on having a PPA and on:

a) *Additionality*:
   - The electrolyser must be **taken into operation within 3 years** after the installation generating renewable electricity has been taken into operation
   - The electricity has been produced **without subsidy**

b) *Temporal correlation*: The electrolyser produces hydrogen **in the same hour** as the electricity required for this hydrogen was produced

c) *Geographical correlation*: The electrolyser and the installation generating renewable electricity are located in the **same bidding zone or in adjacent bidding zone** (with conditions)

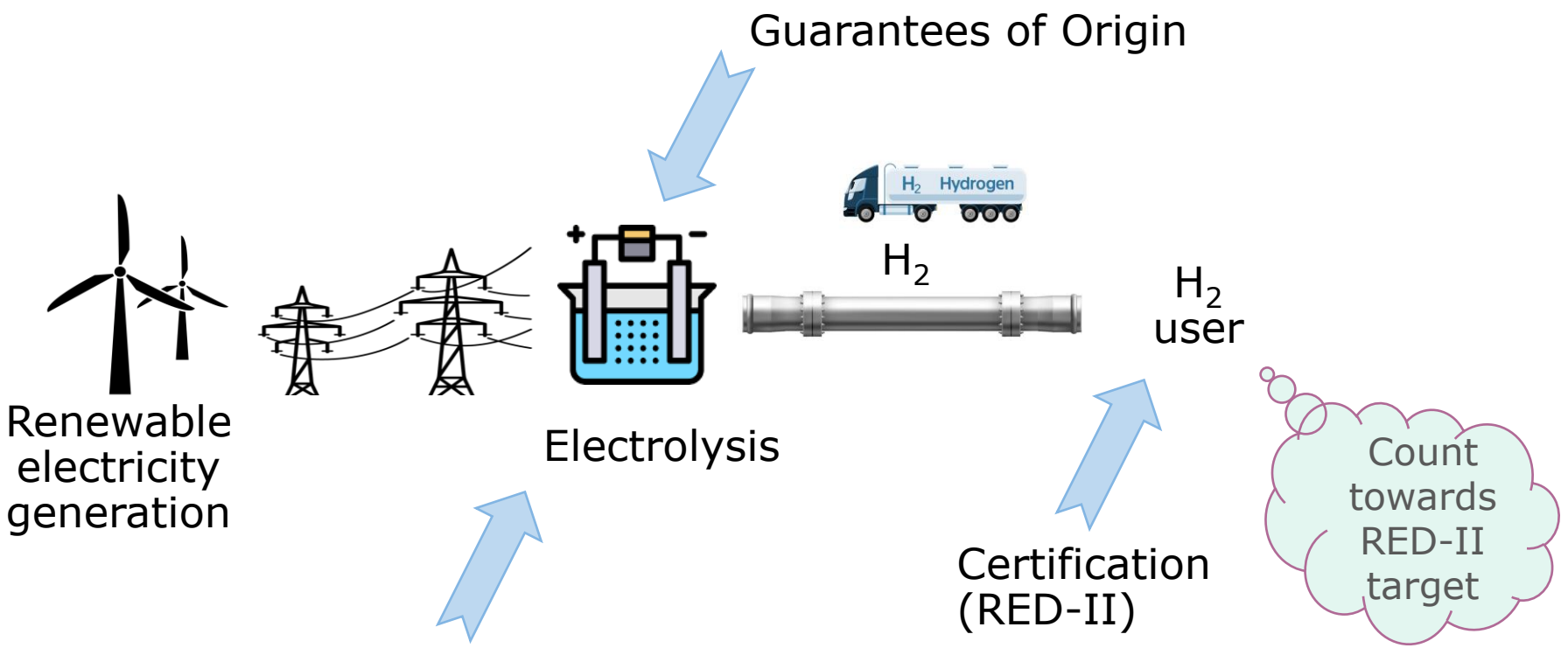
Introduction: Hydrogen delegated acts

- For grid connected electrolysers there is a **transitional period**:
  - The additionality requirements do not apply when the electrolyser is put in operation before 1-1-2027
  - The temporal correlation is "in the same month" until 1-1-2027 for electrolysers not receiving operational support (OPEX subsidies) from the state
- For direct-line electrolysers such a transitional period is not included

Delegated act 28.5 contains detailed requirements for GHG calculations:

- "*Electricity qualifying as fully renewable according RED-II shall be attributed zero GHG emissions*"
- "*The fossil fuel comparator shall be 94 gCO_{2eq}/MJ*"
- Annex C contains detailed rules for determining the grid electricity GHG intensity as well and country-specific numbers for the year 2018

Introduction:
GoOs and voluntary (certification) schemes



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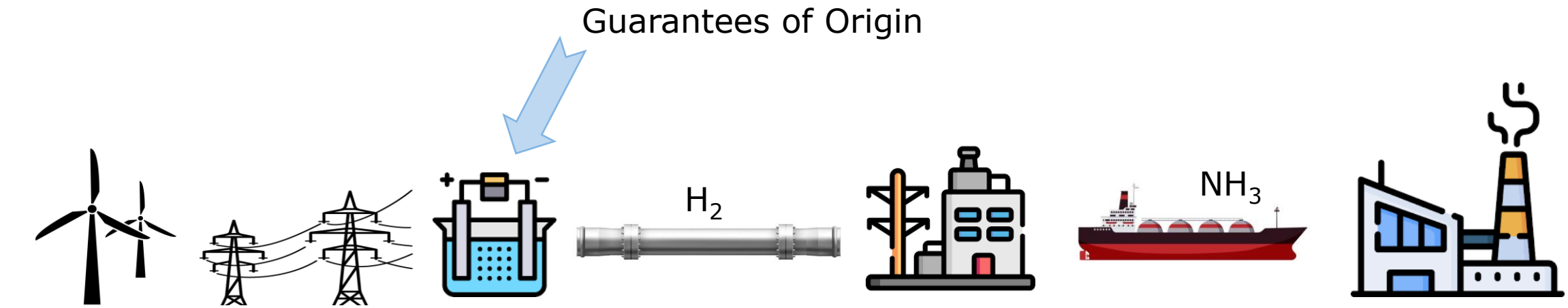

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2. Pilot objective and preparation

Dutch RFNBO certification pilot: Objectives

General objective of the pilot:

To facilitate the process of RFNBO certification scheme development and implementation, by assessing if compliance with draft RED-II RFNBO criteria can be demonstrated with audits against draft RFNBO certification schemes.

Sub-objectives are:

1. to facilitate scheme owners in developing (draft) RFNBO certification schemes
2. to assess if requirements in draft RFNBO certification scheme are workable for companies and auditable for certification bodies
3. to give insight in how RFNBO certification is performed so that European as well as non-European companies can prepare for future RFNBO certification

Dutch RFNBO certification pilot: Preparation

From May to July 2022, EZK and RVO have prepared the RFNBO certification pilot by:

1. Contracting an auditor
   - Quality Services B.V. will perform the certification audits
2. Contacting the owners of certification schemes offering them to be part of the pilot
   - ISCC and REDcert (plus CertifHy) developed draft RFNBO certification schemes
3. Selecting companies
   - 9 companies applied to be part of the pilot
   - Using pre-defined selection criteria, 6 companies were selected

Dutch RFNBO certification pilot: pilot audits

Selected companies:

Company	MW, direct line or grid connection	Location	Scheme
Shell	0,05 MW, direct line and grid connection	Amsterdam (NL)	REDcert + ISCC
Air Liquide	200 MW, direct line and grid connection, simulation	Terneuzen (NL)	ISCC
Nobian	180 MW chlor-alkali electrolysis, grid connection	Rotterdam (NL)	ISCC + REDcert
Air Products	2000 MW, H_2 + NH_3 production, direct line, simulation	Neom, Saudi Arabia	REDcert + ISCC
GroenLeven	1,4 MW, direct line and grid connection	Oosterwolde (NL)	REDcert + ISCC
Gasunie	1 MW, direct line and grid connection	Zuidwending (NL)	ISCC + REDcert

Another company was audited by Tüv Süd, this audit was not part of the Dutch pilot, however, results have been taken into account writing the report:

Company	MW, direct line or grid connection	Location	Scheme
Engie-OCI-EEW	100 MW, H_2 + MeOH production, grid connection, simulation	Eemshaven (NL)	CertifHy

Please note: the pilot is based **on the drafts** of DA 27.3 and DA 28.5

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3. Pilot results

Results from the RFNBO pilot audits (1)

Overall results of the pilot audits:

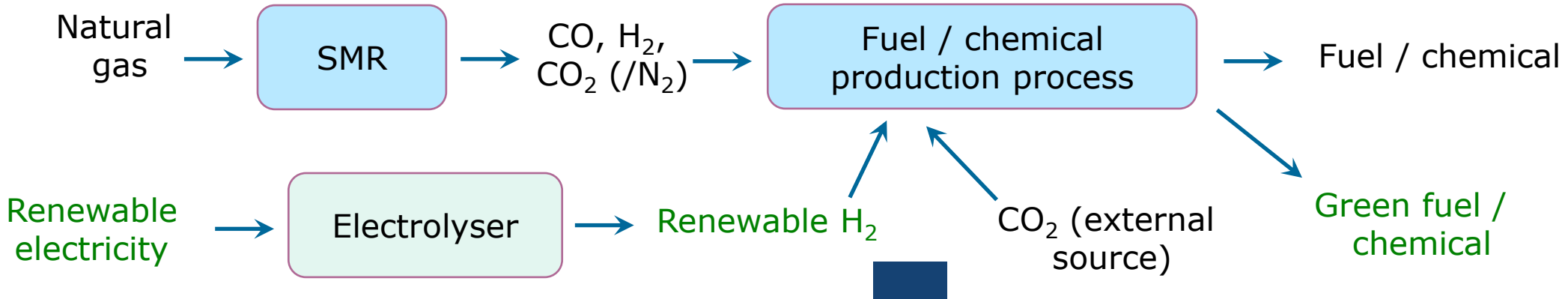
- In principle it is possible to demonstrate compliance to all DA 27.3 and DA 28.5 requirements, both for directly connected and for grid-connected electrolysers
- None of the companies fully complied, due to:
  - The companies being unfamiliar with all requirements
  - Installations still being under development / simulations being performed
  - Not (yet) being able to meet 70% GHG emission savings
  - It makes sense to wait for the final delegated acts
- Demonstrating compliance is not possible when the amount of additional renewable electricity is too low
- Risk of double counting (GoO's and PoS) needs further attention

Results from the RFNBO pilot audits (2)

Detailed result on draft Delegated Act 28(5),
Annex A. 1:

> The greenhouse gas emissions shall be determined by dividing the total emissions of the process concerning each element of the formula by the total amount of fuel stemming from the process and shall be expressed in terms of grams of CO_2 equivalent per MJ of fuel (g CO_2eq/MJ fuel). If a fuel is a mix of renewable liquid and gaseous transport fuels of non-biological origin, recycled carbon fuels and other fuels, all (fuel) types shall be considered to have the same emission intensity.

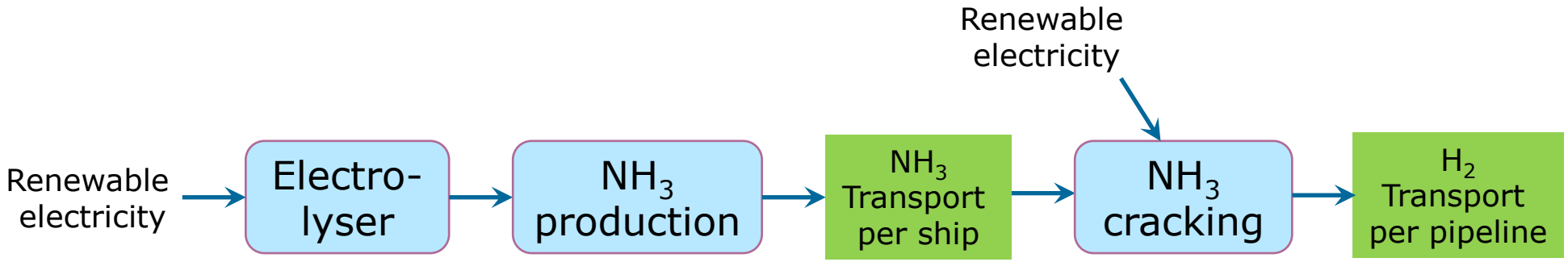
- A strict interpretation would make some initiatives impossible
- We recommend the European Commission to provide clarity



Results from the RFNBO pilot audits (3)

Detailed result on draft Delegated Act 28(5), Annex A. 5:

> Electricity qualifying as fully renewable according to the methodology set out in Directive 2018/2001, shall be attributed zero greenhouse gas emissions.

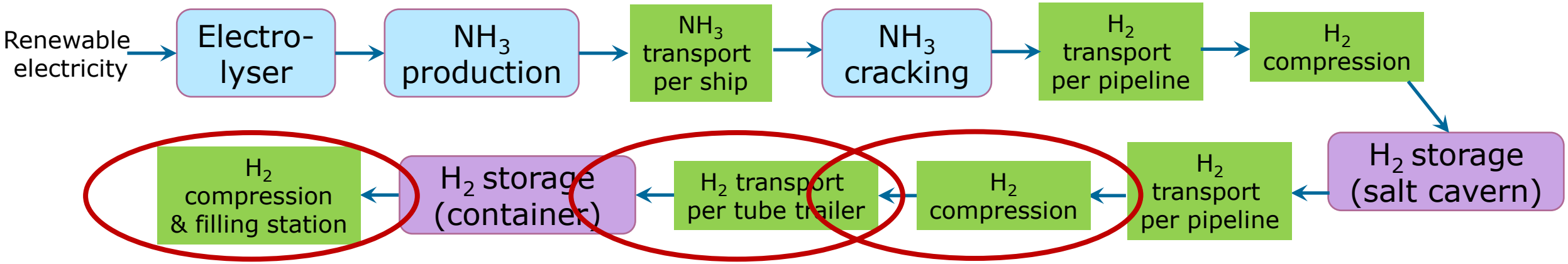


- Does this requirement only apply to electricity input into the electrolyser or also to electricity input in other processing steps or to any electricity input (e.g. also for electrical transport)?
- We recommend the EC and/or voluntary scheme owners to provide clarity

Results from the RFNBO pilot audits (4)

Detailed result on draft Delegated Act 28(5), Annex A. 1:

> Emissions from the manufacture of machinery and equipment and emissions from compressing and distribution of hydrogen[1] for its direct use in vehicles shall not be taken into account.



- It is not clear what is meant by "for its direct use in vehicles"
- We recommend the European Commission to clarify this in DA 28.5

Results from the RFNBO pilot audits (5)

Conclusions from the RFNBO certification pilot:

- General conclusion: Compliance with the RED-II RFNBO criteria can be demonstrated by using RFNBO certification schemes
  However: none of the companies that were audited yet complied to all requirements
- For each of the three sub-objectives the conclusions are:
  1. As a result of this certification pilot, draft RFNBO certification schemes have been developed by ISCC, REDcert and CertifHy. The advantage of this early development is that – once the final DAs will have been published – RFNBO certification schemes can soon be submitted to the EC to be recognised as RFNBO voluntary scheme
  2. To a large extent, requirements in draft RFNBO certification schemes are workable for companies and auditable for certification bodies. Some of the requirements however are not specific enough. Recommendations to EC and scheme owners were made;
  3. The report on this certification pilot will facilitate European as well as non-European companies to prepare for future RFNBO certification.

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4. Next steps

Next steps

Finalisation of the pilot:

- Companies and certification bodies will check the report
  Final report will be published soon

RFNBO certification schemes:

- The three schemes tell us they can implement the final DAs on short notice
- Expectation: RFNBO schemes will be submitted to the European Commission (to become EC recognized voluntary schemes) in Q1 or Q2 2023
- EC recognition timelines are unknown

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Questions?