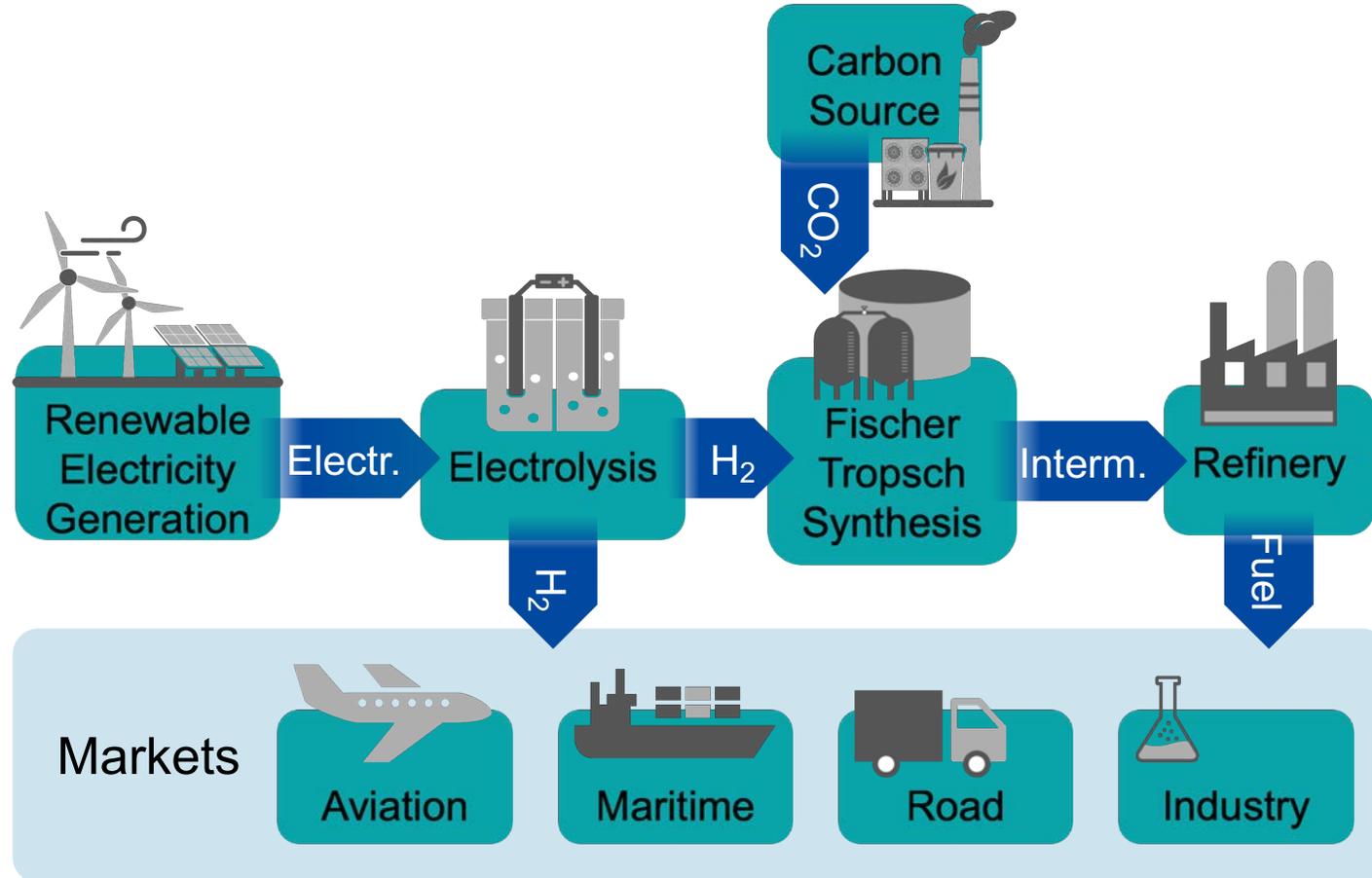




RFNBOs Certification: Requirements and GHG methodology

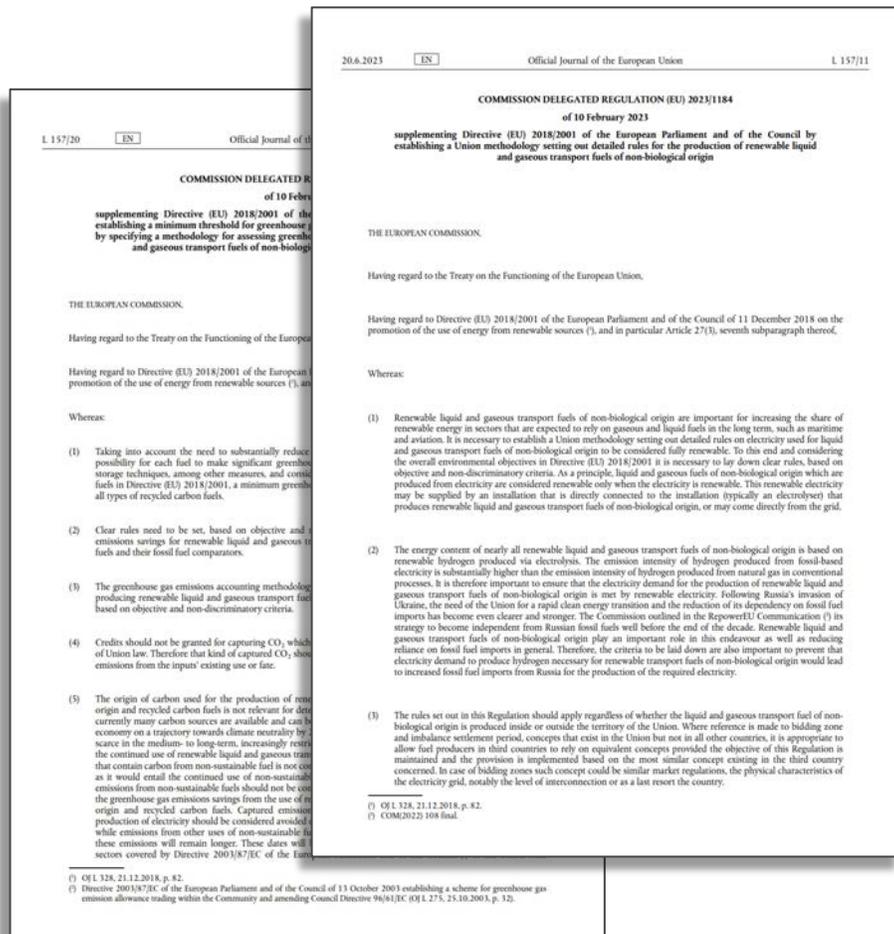
RFNBOs supply chains provide a pathway for the production of low-carbon fuels

Example



Hydrogen may be used directly as fuel or serve as an intermediate for other RFNBOs.

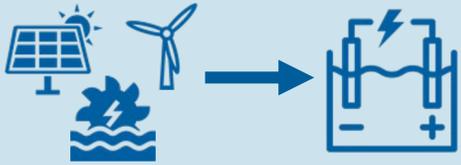
The requirements for RFNBO supply chain certifications are based on the RED II and Commission Delegated Regulations



- As defined by the REDII (Directive 2018:2001):
 - Renewable fuels of non-biological origin (RFNBOs): renewable liquid or gaseous fuels which are used in the transport sector other than biofuels or biogas, the energy content of which is derived from **renewable sources other than biomass**.
- Delegated acts on RFNBOs adopted on 10th Feb 2023 and published 20th June 2023 - EU 2023/1184 and EU 2023/1185
- Specification of **electricity sourcing** and **GHG methodology**
- ISCC already applied for recognition

Depending on the connection, five possible scenarios can be envisioned

1. Direct connection



Grid connection



2. >90% RES

3. <18 gCO₂eq/MJ

4. Imbalance settlement
period

5. Electricity from the
grid with further
requirements

Principles / Criteria

Renewability



Additionality



Temporal
correlation



Geographical
correlation



The methodology for RFNBOs GHG accounting differs from the biofuels RED methodology

$$E = e_i + e_p + e_{td} + e_u - e_{ccs}$$

Where:

E = total emissions from the use of the fuel in g CO₂/MJ

$e_i = e_{i \text{ elastic}} + e_{i \text{ rigid}} - e_{\text{ex-use}}$: supply of inputs

$e_{i \text{ elastic}}$ = emissions from elastic inputs

$e_{i \text{ rigid}}$ = emissions from rigid inputs

$e_{\text{ex-use}}$ = emissions from inputs' existing use or fate

e_p = emissions from **processing**

e_{td} = emissions from **transport and distribution**

e_u = emissions from **combusting the fuel**

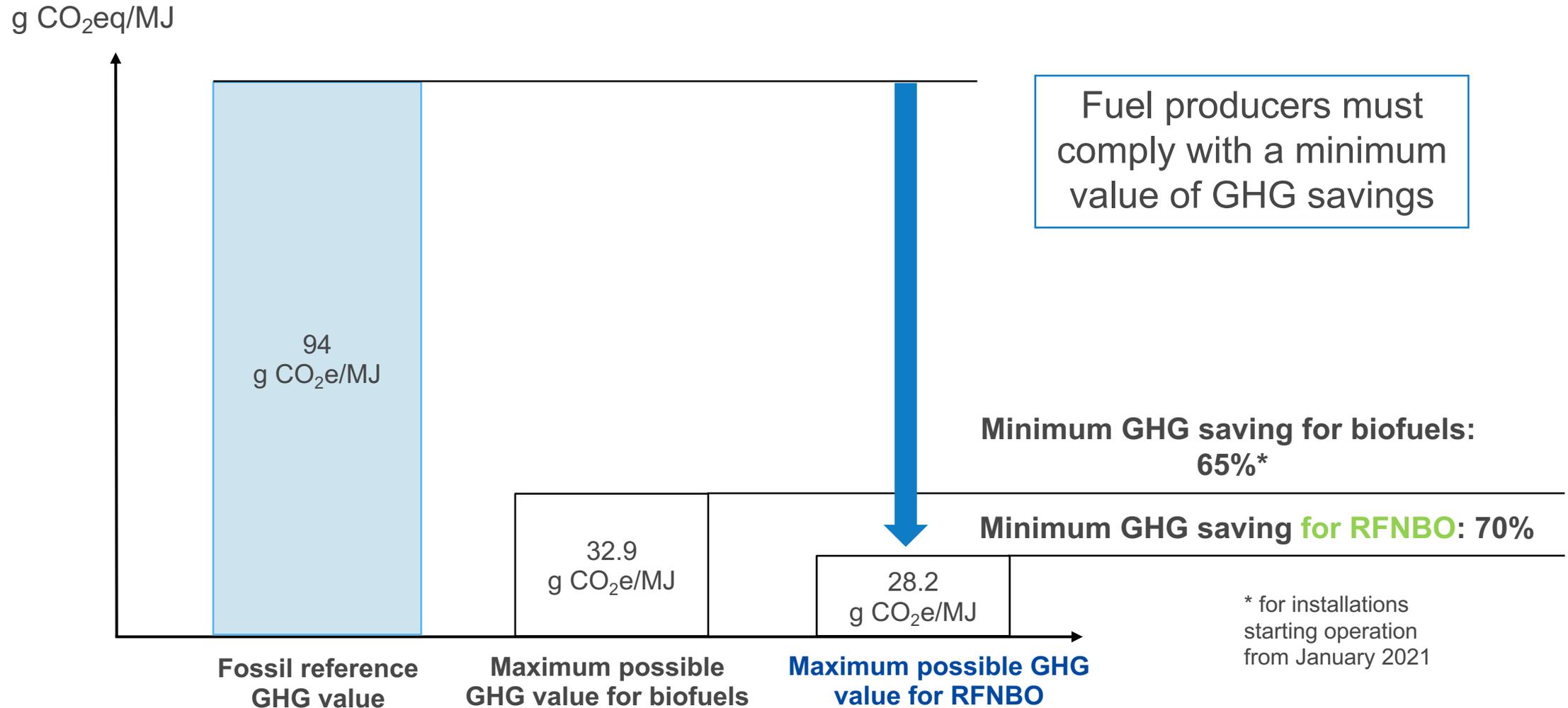
e_{ccs} = emission savings from **carbon capture and geological storage**

Elastic: Supply can be expanded to meet additional demand (e.g. electricity)

Rigid: Supply cannot be expanded to meet additional demand (e.g. MSW, inputs for RCFs)

Source: Annex on Commission Delegated Regulation 2023/1185

GHG emission savings for RFNBOs is higher than for biofuels



ISCC EU applied for recognition of the RFNBO certification document by the EU COM; certification under ISCC PLUS already possible

ISCC EU



- ISCC **applied for recognition by the EU COM** for RFNBO certification
- RFNBOs can not be certified at the moment
- ISCC is participating in **pilot audits**

ISCC PLUS



- It is **already possible** to certify PtX under ISCC PLUS
 - Examples are: Hydrogen, Ammonia, Chlorine, PVC

ISCC CORSIA



- At the moment, it is **not possible** to certify PtX under CORSIA
- Work in the PtX space is ongoing in ICAO (CAEP, FTG)
- ISCC is actively part of the working groups



Key takeaways

- Meo has already supported customers with different RFNBO pilot projects:
 - GHG calculations
 - Certification set-up and electricity requirements verification
 - Certification support under voluntary markets (already possible)
- Certification set-up assessments, GHG calculations and identification of GHG core impact categories can already be performed.



Feel free to get in touch with us!

Meo Carbon Solutions GmbH
Hohenzollernring 72, 50672 Cologne
Email: info@meo-carbon.com, nevares@meo-carbon.com
Phone: 0221 / 508020 20

Follow us on 

meo
CARBON SOLUTIONS