



The ISCC certification approach for RFNBOs

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ISCC offers certification for sustainable, traceable and deforestation-free supply chains and is well-established, credible and independent



12+

Years of market experience in certification, traceability, GHG calculations

All kinds of biomass, wastes, residues, non-biological renewable materials and recycled carbon-based materials



42000+

Certificates in more than 100 countries



ISCC

International Sustainability & Carbon Certification

Extensive training and integrity programmes



900+

Auditors trained in ISCC trainings

Certification bodies cooperating with ISCC

50+



ISCC offers three certification systems, application depending on the market

ISCC EU



- Applicable for **sustainable fuels used for transport, electricity, heating and cooling in the European Union**
- To demonstrate compliance with the EU's sustainability criteria for biofuels, bioliquids and biomass fuels set out in the RED II

ISCC PLUS



- Application for **voluntary** and certain **regulated markets**
 - Energy and biofuels outside the European Union (e.g. Japan, Australia)
 - Industrial applications
 - Food and feed markets

ISCC CORSIA



- Applicable for **sustainable aviation fuels under ICAO CORSIA**
- To **demonstrate compliance** with the sustainability and GHG criteria for CORSIA eligible fuels

IACO: International Civil Aviation Organisation
CORSIA: Carbon Offsetting and Reduction Scheme for International Aviation

Power to X – ISCC's engagement

What is PtX?

Power to X (PtX) is the process of **converting renewable electricity** via green hydrogen into fuel, gas or other products

Why PtX?

To support the shift in energy production **towards CO₂-neutral energy sources** and reach ambitious GHG saving goals

Can ISCC certify PtX?

ISCC PLUS:

Certification already possible today

ISCC EU:

Not yet possible. ISCC is participating in pilots for a certification approach for green hydrogen and derivatives

ISCC CORSIA:

Not yet possible. Work on PtL SAF ongoing within ICAO. ISCC is part of relevant working groups

Large amount of green hydrogen will be a key-ingredient for many industry sectors in a near future to reach climate targets

Demand of carbon-free hydrogen in Germany

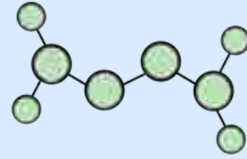


Source: "Making renewable hydrogen cost-competitive" - Agora Energiewende (2021)

- Renewable hydrogen can be used to **decarbonise sectors and applications** that are hard to electrify
- The cost of green hydrogen is expected to **significantly decrease by 2050**, thus becoming competitive with grey/blue hydrogen (from fossil fuels sources)
- The price of PtL will be also **positively affected**

The ISCC PLUS certification system is already integrating hydrogen and renewable electricity – Examples

POLYMER SECTOR



- **PVC** (polyvinyl chloride) and other polymers production from biomass-derived ethylene and chlorine from electrolysis process (hydrogen as by-product)

ENERGY SECTOR



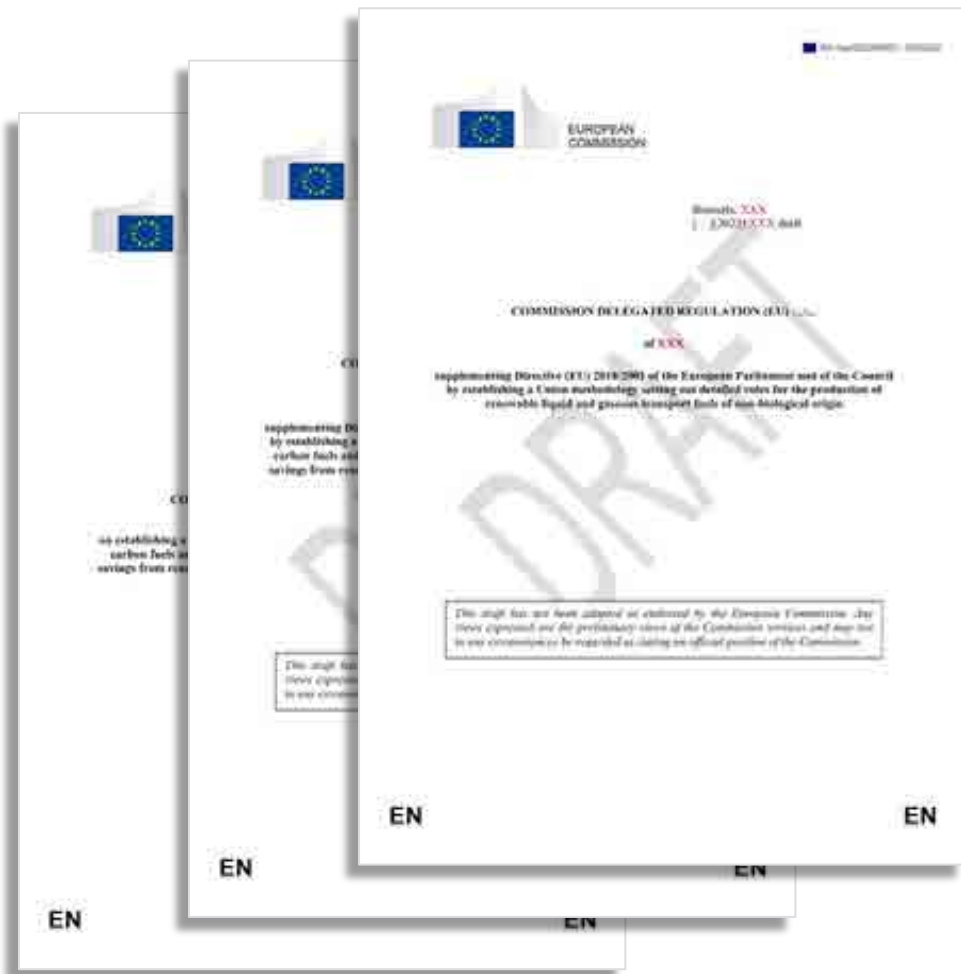
- **Hydrogen** production via water electrolysis using renewable electricity

CHEMICAL SECTOR



- **Caustic soda** (sodium hydroxide) production using electricity from renewable inputs
- **Ammonia** production from green hydrogen

ISCC EU: The requirements for the certification of RFNBO supply chains are based on the RED II and delegated acts



- RFNBOs as defined by the RED II¹:
 - “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.**”
- On May 20th 2022, the EC published two draft delegated acts:
 - Rules for the **production of RFNBOs** (focus on sourcing renewable electricity)²
 - Methodology for **assessing GHG emission savings** for RFNBOs and RCFs (recycled carbon fuels)³
- Final texts of the legislations **are still pending**

¹ Art. 2(35) RED II (Renewable Energy Directive (EU) 2018/2001)

² Draft delegated regulation on establishing a Union methodology setting out detailed rules for the production of renewable liquid and gaseous transport fuels of non-biological origin

³ Draft delegated regulation on 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

ISCC has set up a RFNBO certification approach that was subject to pilot audits organised by RVO

- The ISCC EU RFNBO documents contain the specific requirements relevant for RFNBOs
- Based on the outcome of the pilot audits and the final legislation relevant updates will be made in the documents

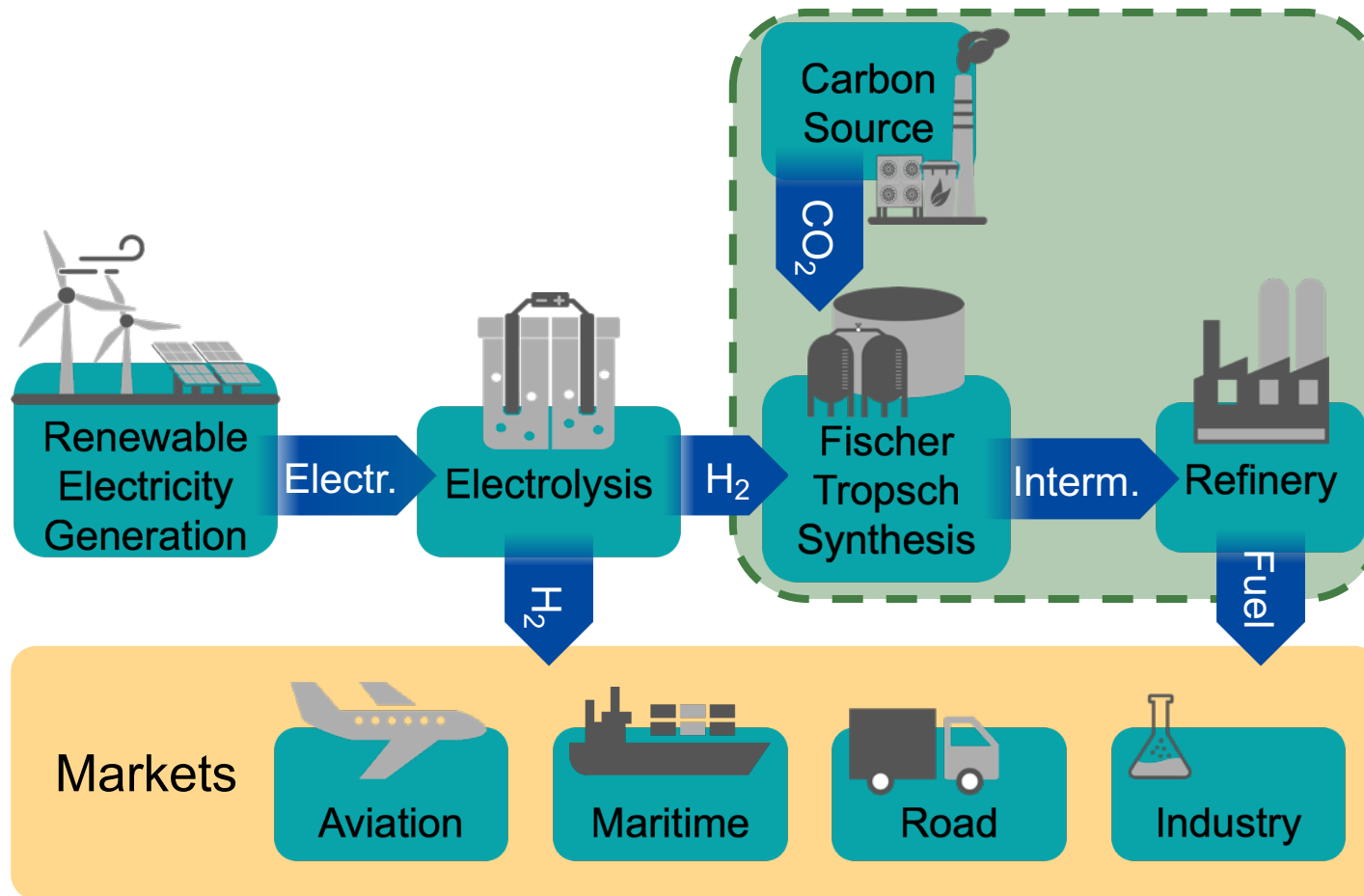


RFNBO System Documents



RFNBO Audit Procedures

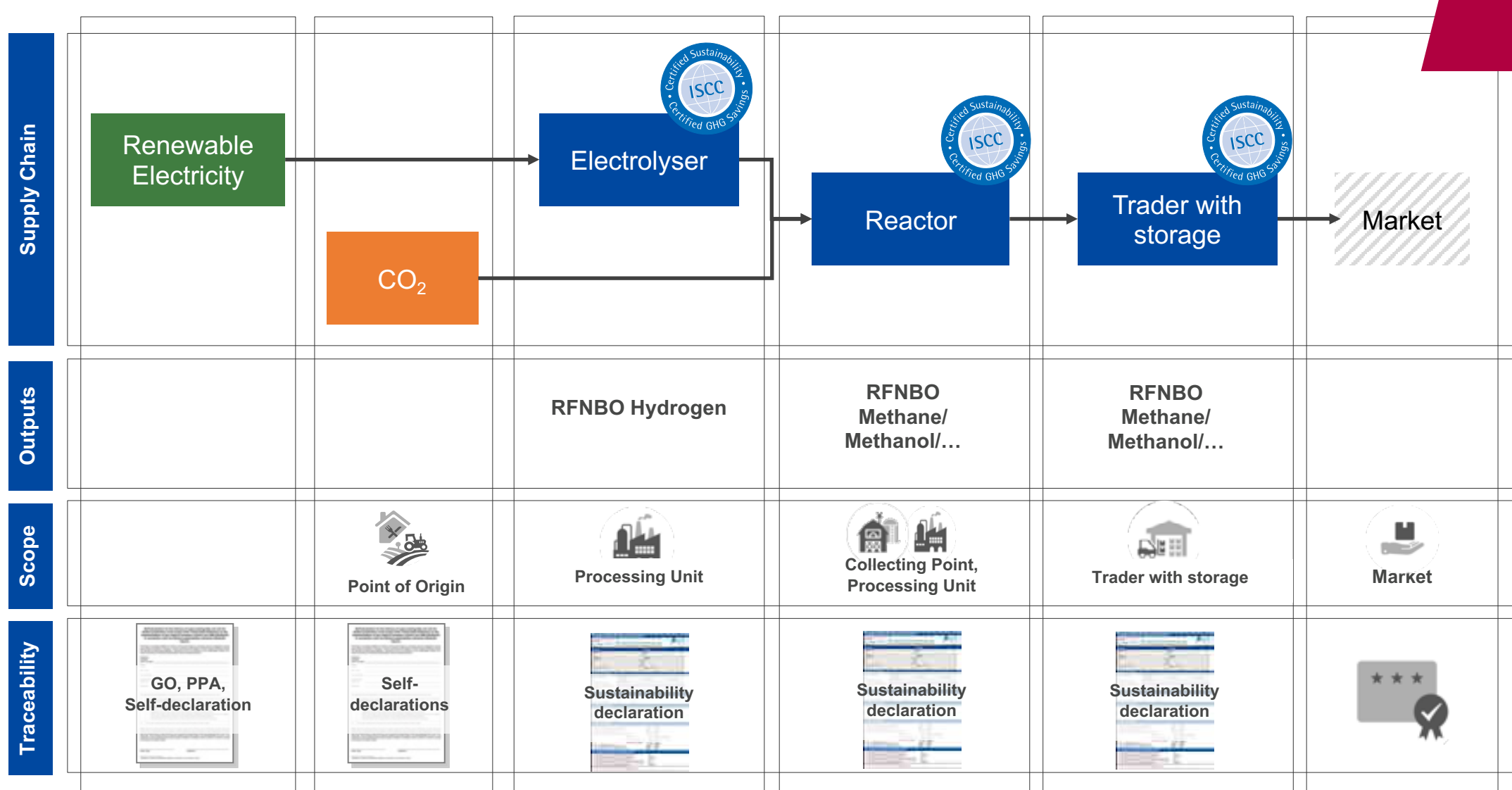
The ISCC RFNBO certification approach covers hydrogen and any derivatives. It will be applicable in RED II regulated and other markets



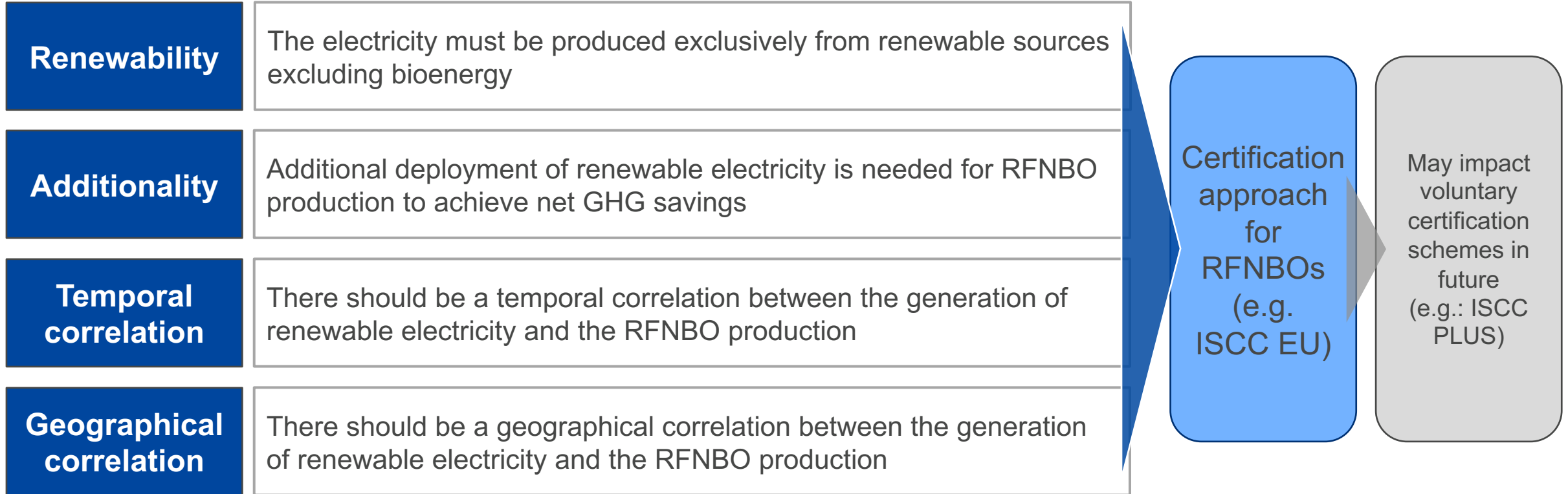
Example

An exemplary supply chain for RFNBO production. Hydrogen may be used directly as fuel or serve as an intermediate for other RFNBOs.

ISCC approach to cover a RFNBO supply chains by certification

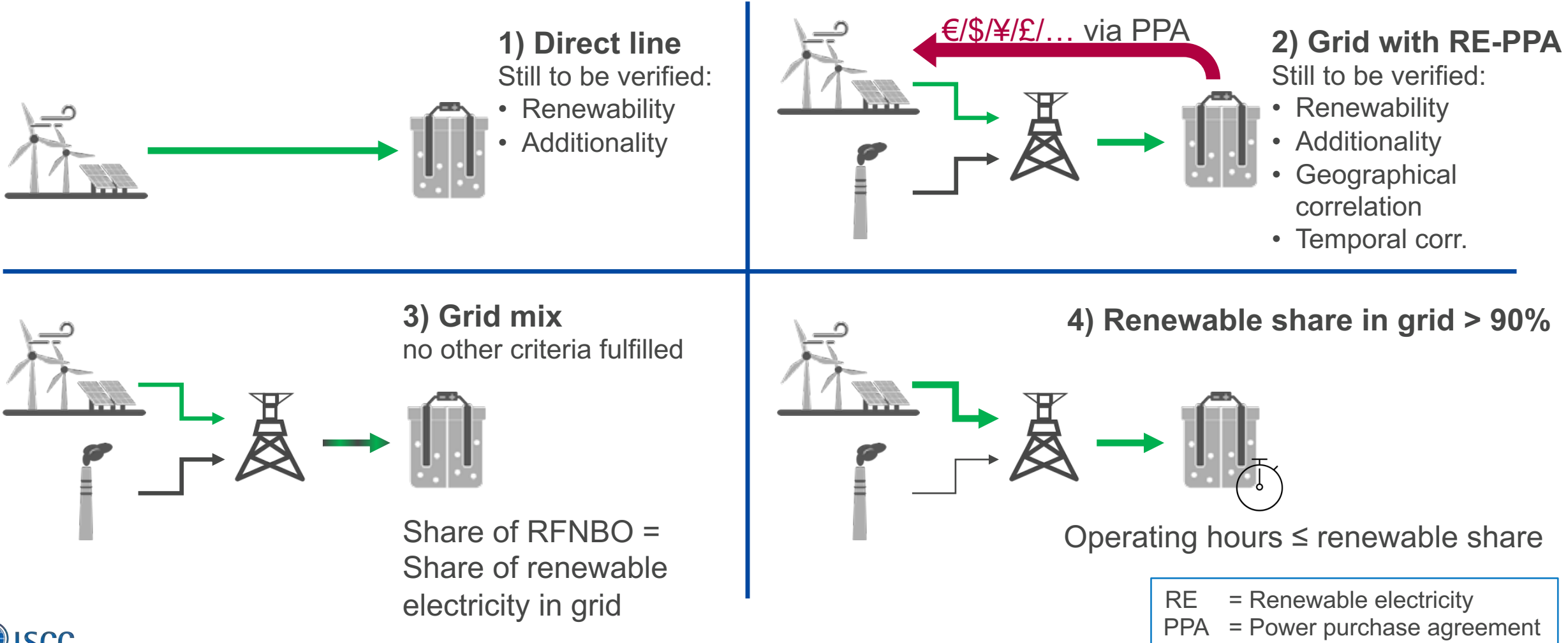


The criteria for renewable electricity for RFNBOs follow four principles



Source: Draft delegated regulation on establishing a Union methodology setting out detailed rules for the production of renewable liquid and gaseous transport fuels of non-biological origin

Supply options for renewable electricity for RFNBO production



Sustainability declarations ensure traceability of RFNBOs. Mass balance approach is applicable for RFNBOs

Traceability

- Every certified element in a RFNBO supply chain issues a sustainability declaration for amounts of outgoing sustainable material
- Sustainability declarations contain
 - General information on the supplier and recipient (e.g. name and address, place of dispatch and receipt)
 - Product specific information (e.g. country of origin of renewable energy, relevant GHG information)

Chain of Custody

- The mass balance approach is applicable for RFNBO supply chains
- "Proportional approach (or stoichiometric approach)" to be applied for allocation of sustainability and GHG characteristics
 - Sustainable share to be attributed to all process products in the same ratio in which products are generated per unit of consumed electricity



RFNBOs certification at ISCC: Next steps

- ISCC certification of RFNBOs is **already possible today** (under ISCC PLUS scheme)
- Draft **RFNBOs' ISCC EU System Documents** are already available and ready to be submitted once the EU legislation has been finalised
- ISCC has developed a dedicated **ISCC RFNBOs Training** (dates will be announced in due time)
 - The topic is also covered in the **ISCC PLUS** and **ISCC CORSIA** training



Thank you!

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