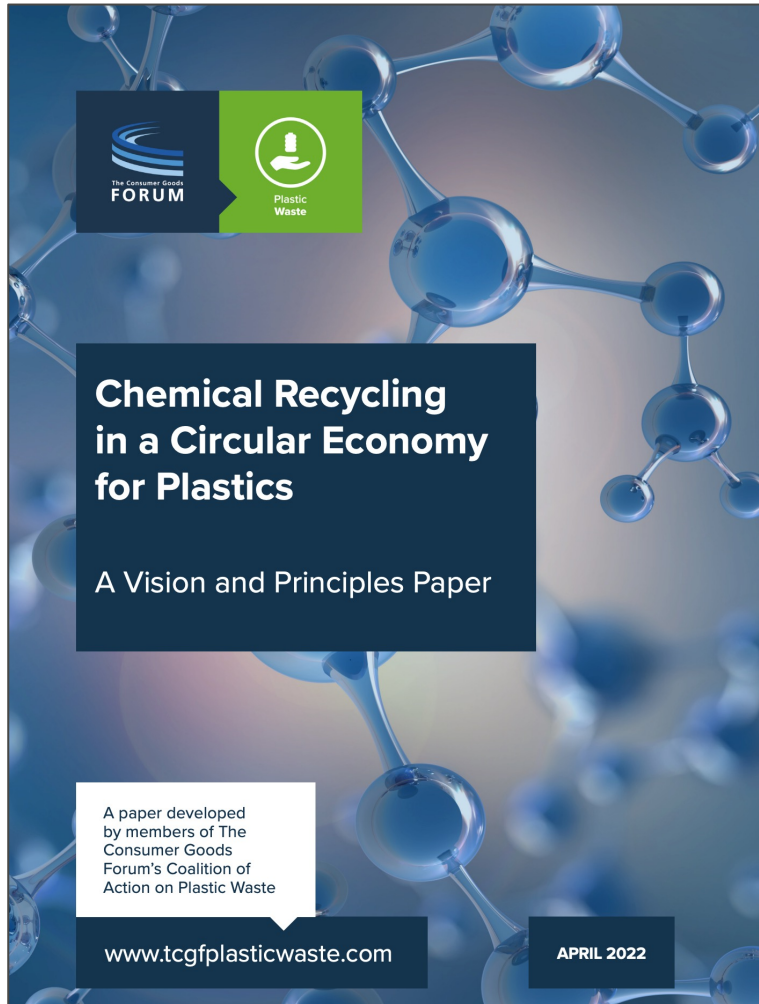


Recent Developments and Market Expansion of ISCC PLUS

ISCC Technical Stakeholder Meeting Circular Economy and Bioeconomy – 14 June 2022
Dr Stefan Gärtner – Meo Carbon Solutions GmbH

Excluding the sustainable share of energetically used outputs from attribution is requested by market participants and regulators (in Europe)

EXAMPLES



Attribution options under ISCC PLUS – Status quo

Free attribution and other attribution options already established in ISCC PLUS

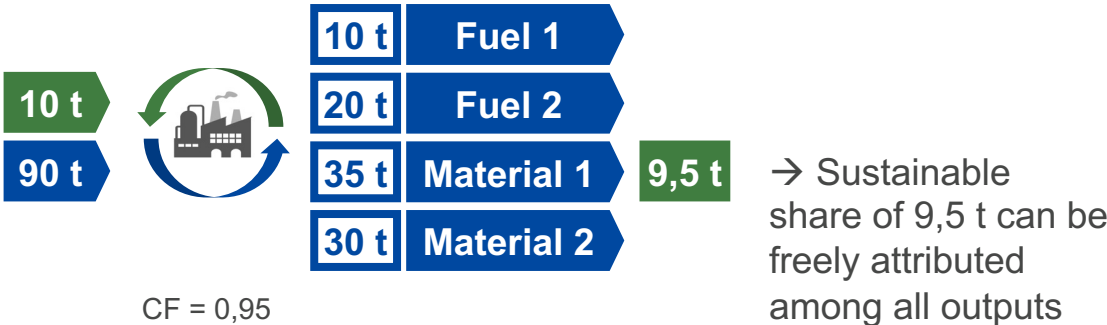
- ISCC PLUS system document V3.3: „In general, ISCC PLUS allows the free attribution for the determination of the sustainable share of input material to the output material. Free attribution means that the sustainable share can be attributed to one or several output materials.“
- Use of conversion factors required.
- Could already be further specified and handled in a more restrictive way, i.e. by excluding fuels in the calculation of sustainable shares, respective information can be included on the Sustainability Declaration. (see footnote 9 in ISCC PLUS system document V3.3)

ISCC PLUS will additionally offer next to the established free attribution option a separate energy excluded attribution option

Proposal name.
Suggestions for
alternative wording
very appreciated

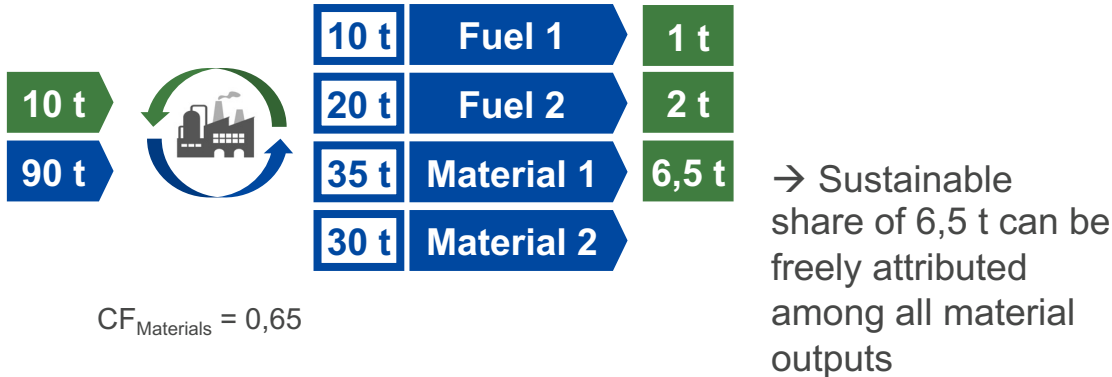
Free attribution

- Free attribution: Reattribution of sustainable share from energetically used outputs to material outputs possible
- Process losses (e.g. energetically used inputs) need to be considered for calculation of conversion factor



Energy excluded attribution

- Proportional attribution of sustainable share to outputs, which are used energetically (consumed internally and sold as fuels) according to mass or energetic content
- This sustainable share attributed to energetically used outputs cannot be reattributed to material outputs*
- Remaining sustainable share can be attributed freely among all material outputs

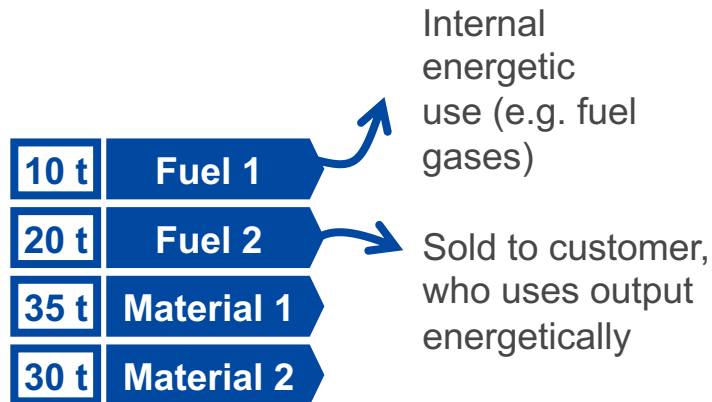


*In case of simultaneous ISCC EU and PLUS certification: attributed volumes to sold fuels can be used under ISSC EU depending on pending co-processing DA

Proposed solutions of implementation and audit challenges of attribution option “energy excluded” will be tested in pilots

Challenge

Determination type of use of output (fuel or material)



Change of attribution options for individual client requests

Proposal for implementation and audit

Verification steps during audit at ISCC system user

Determination, if any output is used energetically. If yes:

1. Identification of outputs, which are internally energetically used
 2. List of sales (output, quantity & customer) and determination of type of use (fuel or material) for each sale:
 - i. Prove of material use for each sale by ISCC system user
 - ii. Provision of default usage for each output by ISCC system user (e.g. country specific split of output usage from market analyses)
 - iii. Consideration as energetic use, if i. and ii. cannot be provided
- Separate conversion factors for each attribution option
 - Establishment of specific conversion factor in mass balance system for each client request
 - Calculation of needed sustainable input for respective quantity of requested output via conversion factor of chosen attribution option

Implementation of separate attribution options in ISCC PLUS

Mass Balancing Option	Approach	Principle
1 Attribution determined by mass	Attribution approaches	Two attribution options: 1. Free attribution to one or several outputs 2. Energy excluded attribution to material outputs
2 Attribution determined by energy		
3 Trace-the-Atom	Molecular approach	Determination based on chemical reaction
4 $^{12}\text{C}/^{14}\text{C}$ Analysis	Measurement	Measurement of sustainable share

- Integration of energy excluded attribution next to established free attribution option
- Attribution option is a mandatory information on sustainability declarations
 - ☐ Free attribution
 - ☐ Energy excluded attribution
- Energy excluded attribution option need to be used in the whole supply chain for final claim to the customer

The planned update of the ISCC system document will further specify the usage of CO₂

See also first information via Email in ISCC system update on 23 March 2022

CO₂ does not contain usable energy

- Energy needed to drive production processes comes from other reactants / process inputs
- Additional requirements depending on production setup need to be met:

i. CO₂ and hydrogen as reactant:

Hydrogen needs to be ISCC compliant (bio, (bio-)circular or renewable hydrogen)



ii. CO₂ and other materials as reactants:

- At least one other relevant process input besides CO₂ need to be ISCC compliant.
- Only the outputs of the process can get ISCC PLUS certified, which contain the carbon derived from CO₂ and / or other ISCC compliant inputs.



Draft delegated Act for RED II

COMMISSION DELEGATED REGULATION (EU) .../...

of **XXX**

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

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources², and in particular Article 27(3), seventh subparagraph thereof,

Whereas:

- (1) Renewable liquid and gaseous transport fuels of non-biological origin are important for increasing the share of renewable energy in sectors that are expected to rely on gaseous and liquid fuels in the long term, such as maritime and aviation. Directive

Delegated Regulation
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

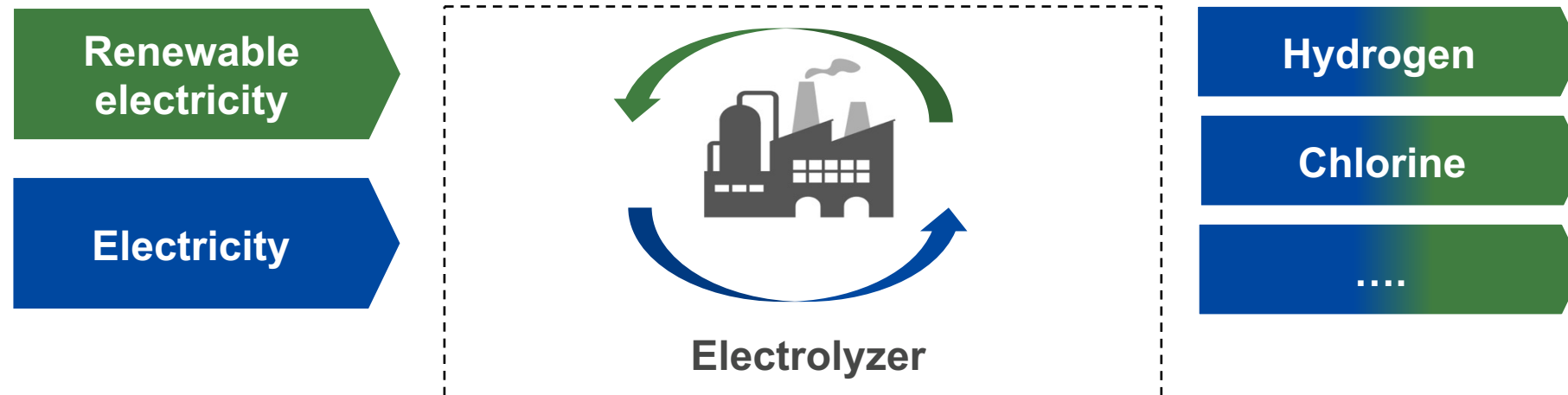
greenhouse gas emission savings. It measures for an increase of fossil electricity generation are prevented by an increase in the production of renewable electricity. Given the enormous amount of additional renewable electricity generation needed to progress in the decarbonisation of current fossil electricity production, this can only be ensured by including strict criteria for additionality in this methodology. Directive (EU) 2018/2001 sets out the overall framework for stepping up the share of energy from renewable sources, including renewable electricity, and its amendment put forward an EU-level target of at least 45% for 2030.

- (3) Renewable hydrogen will contribute towards reducing greenhouse gas emissions in the Union only if it is avoided that incentives for the production of more fossil electricity

² OJ L 328, 21.12.2018, p. 82.

- Out for public consultation since 20.05.2022 ([Link](#))
- Four criteria for renewable electricity:
 - Renewability
 - Additionality (starting from 2027)
 - Temporal correlation (until 2027 monthly basis, then hourly)
 - Geographical correlation
- For hydrogen and derivatives
- Implementation via voluntary schemes in EU and third countries

The alkaline electrolysis of water for e.g. hydrogen production can be certified under ISCC PLUS. Proportional attribution required, free attribution is not allowed.



- For the electrolysis, mass balancing is limited to a **“proportional approach”** or **“stoichiometric approach”**
- Sustainable share must be attributed to all process products in the same ratio in which these products are generated per unit of consumed electricity
- **“Re-attribution” or “shift” of attributed sustainable share is not allowed**

ISCC is increasingly contacted on aspects related to GHG/LCA claims

- The main challenge for acceptance is lack of harmonisation in approaches

- **How it works currently under ISCC:**

- **ISCC PLUS System Document** points out differences to ISCC EU methodology (e.g. cradle-to-grave acc. to ISO)
- Individual GHG emission values per production step based on **actual data** or **default values** from REDII

- **Today GHG emission calculations in the chemical industry show significant differences:**

- In methodologies (e.g. ISO 14064/67, GHG Protocol, REDII, PAS..)
- And system boundaries (mass balance attribution, allocation, primary data vs. secondary data, savings, avoided emissions, potential carbon credits/ offsets, ...)
- It is challenging to apply a minimum saving target among non-comparable values

- **Way forward:**

- ISCCs approach is to build on existing calculation standards
- Currently setting up pilots to address open questions
- Derive general and reasonable requirements to be applied for all interested companies



Many thanks for your attention!

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