ISCC
International Sustainability & Carbon Certification

ISCC EU 202-6
Renewable Fuels of Non-Biological Origin (RFNBOs) and Recycled Carbon Fuels (RCFs)

Document Title: ISCC EU 202-6 RENEWABLE FUELS OF NON-BIOLOGICAL ORIGIN (RFNBOs) AND RECYCLED CARBON FUELS (RCFs)

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Content

1 Introduction

E-fuels as alternative to fossil fuels

E-fuels – energy carriers derived from renewable electricity – are expected to play an essential role in moving towards a fully renewable energy system. E-fuels will be particularly important for decarbonizing sectors that are expected to rely on liquid fuels in the long term, such as maritime and aviation, in that they complement direct electrification as drop-in alternatives to fossil fuels.

The RED II/RED III and RFNBOs

The Renewable Energy Directive (EU) 2018/2001 (recast) (hereafter RED II) establishes the overall framework for the production and promotion of energy from renewable sources, including in the transport sector. The RED II specifies that so-called renewable liquid and gaseous transport fuels of non-biological origin (hereafter RFNBOs) can be used to contribute to the overall target of 14% for the share of renewable energy in the transport sector in EU Member States. The amendment of the RED II[1] (additionally sets an industry sub-target for hydrogen meeting RFNBO criteria used for energy and non-energy purposes.

The RED II and RCFs

Further, the RED II defines the fuel category 'Recycled Carbon Fuels' (hereafter RCFs) which in their nature are not made from renewable resources and, thus, do not contribute to the main target of the renewable energy share of the gross final energy consumption in the Union. However, Member States may decide to allow the accounting of RCFs towards the quota of renewable energy in the transport sector. This reflects the benefit that RCFs, although not renewable, can contribute to reduce GHG emissions by adding another lifecycle to the carbon that would otherwise end up in the atmosphere directly.

GHG emissions savings

To ensure that RFNBOs and RCFs contribute to a reduction in greenhouse gas emissions, the RED II requires them to achieve at least a 70% GHG emissions saving threshold (via avoided emissions) in comparison to the RED II fossil reference.

Renewable electricity

The RED II also specifies that the electricity used for RFNBO production must be from renewable sources, e.g. wind, solar or water but not from biomass.

2 Scope and Normative References

This document specifies the certification requirements to produce RFNBOs and RCFs under the ISCC EU system. It is valid in addition to the other ISCC EU system documents.

Delegated Acts

In the Delegated Act based on Art. 27(3) RED II (Commission Delegated Regulation EU 2023/1184) on the rules for the production of renewable liquid and gaseous transport fuels of non-biological origin (hereafter Delegated Act

[1] *Directive (EU) 2023/2413 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards to the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 (hereafter referred to as "revised RED II". The revised RED II is also known as RED III).)*

on RFNBOs)[2], the EU Commission lays out rules and guidelines intending to ensure that the electricity used to produce the RFNBOs can be considered fully renewable.

The Delegated Act based on Article 28 (5) RED II specifies a methodology for assessing greenhouse gas emissions savings from renewable liquid and gaseous transport fuels of non-biological origin and from recycled carbon fuels.[3] The specific GHG requirements determine the emissions for RFNBOs and RCFs are laid down in ISCC EU Document 205-1 "Renewable Fuels of Non-Biological Origin and Recycled Carbon Fuels – Greenhouse Gas

Emissions". Additionally, guidance published by the European Commission in the "Q&A for the certification of RFNBOs and RCF"[4] was also considered for the development of this System Document.

Definitions of RFNBOs and RCFs

In the revised RED II, RFNBOs are defined as: "renewable fuels of non-biological origin" means liquid and gaseous fuels the energy content of which is derived from renewable sources other than biomass.[5]

RCFs[6] are defined as liquid and gaseous fuels that are produced from liquid or solid waste streams of non-renewable origin which are not suitable for material recovery in accordance with Article 4 of Directive 2008/98/EC[7], or from waste processing gas and exhaust gas of non-renewable origin which are produced as an unavoidable and unintentional consequence of the production process in industrial installations.

The Annex in this document contains further particular relevant definitions of the RED II and the Delegated Act on RFNBOs.

3 Basics for the certification of RFNBOs and RCFs

RFNBOs

The RED II defines RFNBOs as "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".

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[2] *Commission 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. The delegated regulation was adopted on 10 February 2023. The document has been published on the Official Journal of the European Union on 20 June 2023 (Volume 66).*

[3] *Commission Delegated Regulation (EU) 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. The delegated regulation was adopted on 13 February 2023. The publication in the Official Journal of the European Union was pending at the time the ISCC EU Document 202-6 was created*

[4] *Q&A for the certification of RFNBOs and RCF, published on March 14th 2024, in the Voluntary Schemes webpage: https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/voluntary-schemes_en, In the following referred to as Q&A RFNBOs*

[5] *Art. 1(1g) revised RED II*

[6] *Art. 2(35) RED II*

[7] *Directive 2008/98/EC on waste and repealing certain directives*

Renewable energy sources

Following the definition of renewable energy in the RED II, this means that a RFNBO is produced using primarily electricity from wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, and hydropower. By contrast, according to the definition of 'installation generating renewable electricity' (see Annex I) given in the DA on RFNBOs, RFNBOs fully renewable electricity cannot be sourced from installations using energy derived from biogenic sources such as biomass, landfill gas, sewage treatment plant gas or biogas.

No competition with food or feed

As the production of RFNBOs is not associated with the cultivation of biomass, it does not generally compete with food or feed production.

Renewable hydrogen

A prominent example for a RFNBO is renewable hydrogen, derived from renewable electricity using electrolysis. The Delegated Act on RFNBOs explicitly states that, in practice, the energy content of nearly all RFNBOs is based on renewable hydrogen produced via electrolysis.

Exemplary supply chain

Figure 1 provides an overview over an exemplary supply chain for RFNBO production and their potential markets and end-uses.

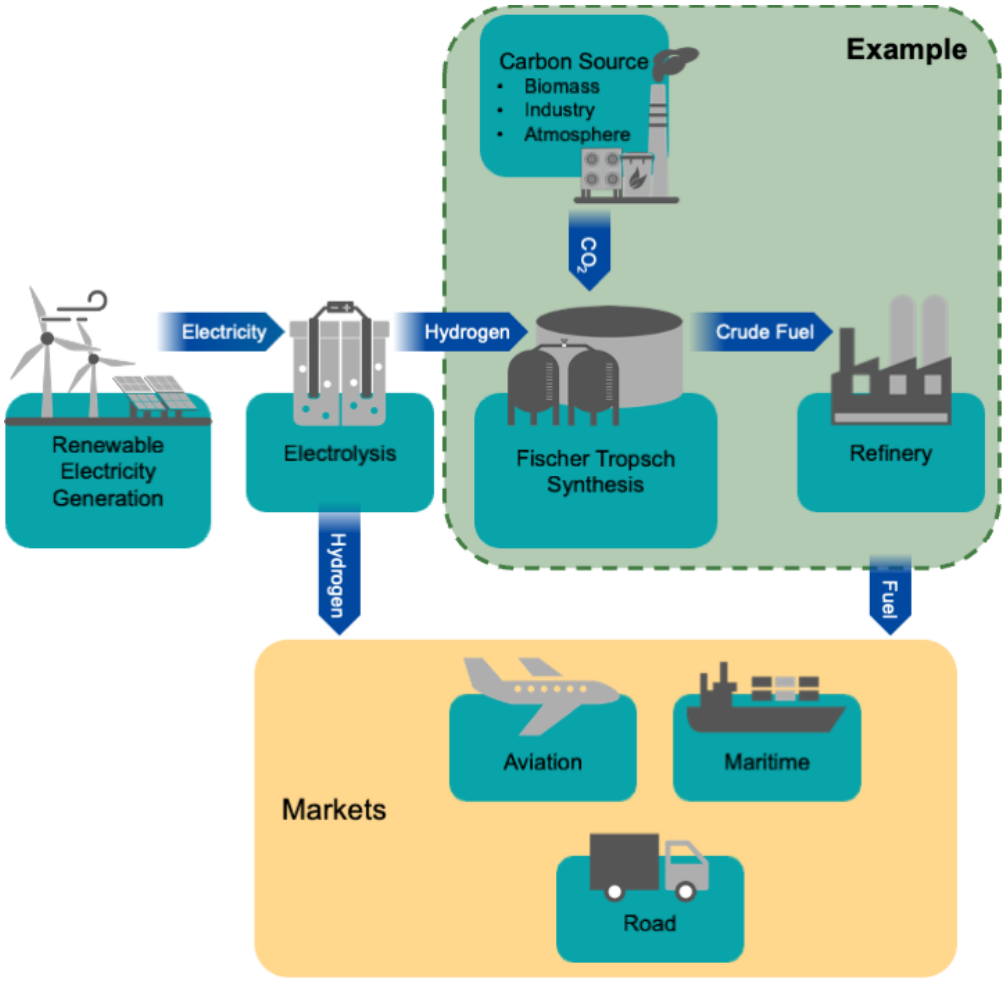

Figure 1: An exemplary supply chain for RFNBO production. Hydrogen may be used directly as fuel or serve as an intermediate for other RFNBOs.

RFNBO production steps

The first element is generally an installation generating renewable electricity, followed by an electrolyser producing renewable hydrogen from that electricity. The renewable hydrogen can then either be used directly (e.g. the mobility, industrial or building sectors) or used as an intermediate, by reacting it with other raw materials such as carbon dioxide (CO_2) (e.g. renewable hydrogen and CO_2 reacting to methane), other carbon sources like carbon monoxide (CO), or nitrogen (N_2) (e.g. renewable hydrogen and N_2 reacting to ammonia) into hydrogen derivatives.

RCFs

RCFs are defined in the RED II as liquid and gaseous fuels that are produced from liquid or solid waste streams of non-renewable origin which are not suitable for material recovery in accordance with Article 4 of Directive 2008/98/EC, or from waste processing gas and exhaust gas of non-renewable origin which are produced as an unavoidable and unintentional consequence of the production process in industrial installations. As described in the Annex of the Delegated Act on the GHG calculation methodology for RFNBOs and RCFs, the amount of RCFs that is created in a process is determined by the energy inputs that comply with the definition above.

No competition with food or feed

Equal to RFNBOs, the production of RCFs does not involve cultivation of biomass and, therefore, it does not generally compete with food or feed production.

CO_2 sources

If CO_2 is used as a carbon source for either RFNBOs or RCFs (e.g. to react with renewable hydrogen to a hydrocarbon RFNBO), three different CO_2 types of origin can be distinguished. The CO_2 can come from waste fossil sources (for instance waste flue gases from industrial production and combustion processes), from biological sources (for instance alcohol fermentation or anaerobic digestion) or from atmospheric or naturally- occurring/geothermal sources.

No deliberate production of CO_2

In any case, the CO_2 must not be deliberately produced for the purpose of introducing it into an RFNBO or RCF production process. A fuel would be considered as a fossil fuel if the CO_2 was generated from fossil energy sources exclusively for the purpose of using it as input to produce a transport fuel. Similarly, the fuel would be considered as a biofuel, and not an RFNBO or RCF, if the CO_2 was generated from biomass specifically for the purpose of using it as input to produce a transport fuel.

Fundamentals of the ISCC system

The ISCC EU system documents lay down the general rules regarding the basic audit and certification processes, risk management procedures as well as requirements for traceability and chain of custody and greenhouse gas (GHG) emissions calculation and verification under the ISCC EU system. The specific GHG calculation requirements for RFNBOs and RCFs are laid down in ISCC EU Document 205-1 “Renewable Fuels of Non-Biological Origin and Recycled Carbon Fuels – Greenhouse Gas Emissions”.

Obligation for certification

Under ISCC, as a basic principle, all economic operators that handle sustainable material[8] (e.g. produce or generate, collect, process, store or trade) must be covered by an ISCC certification. The electrolyser and all subsequent elements in the downstream supply chain therefore must be certified individually.

Coverage of RE installations

While the installation generating the renewable electricity does not have to be certified individually, the RFNBO producer needs to demonstrate to the auditor that the renewable electricity sourced from that installation fulfils the requirements for counting sourced electricity as fully renewable as laid out in chapter 4.

Supply chain certification coverage

Figure 2 describes how different elements in a simplified RFNBO supply chain are covered by ISCC certification. Requirements regarding traceability and chain of custody are covered in detail in chapter 5.

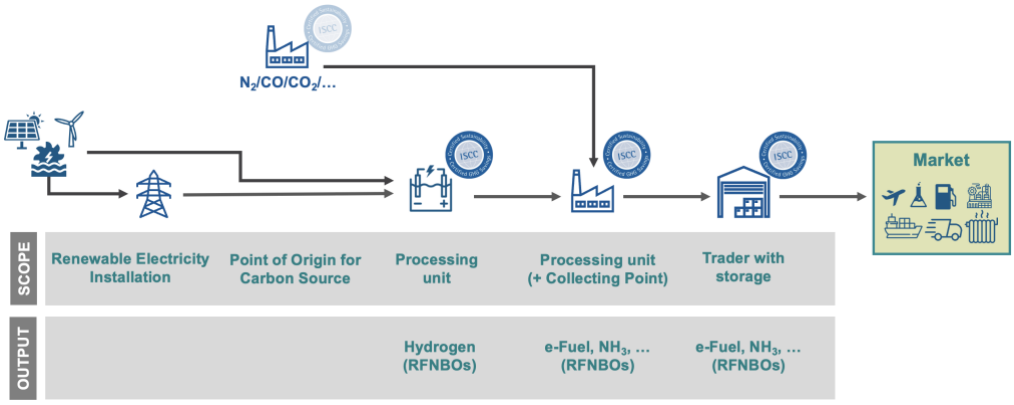

Figure 2: Simplified example of how a RFNBO supply chain would be covered by ISCC certification.

4 Rules for Counting Electricity as (Fully) Renewable

Renewable electricity

The RED II requires that to ensure that RFNBOs contribute to a reduction in greenhouse gas emissions, the electricity used for RFNBOs production has to be of renewable origin. In line with the methodology laid out in the RED II and the Delegated Act on RFNBOs, this chapter provides the rules for counting the electricity used for the production of RFNBOs as renewable.

Eligible renewable energy sources

As a general rule, electricity sourced from installations generating renewable electricity for the production of RFNBOs may be counted as renewable only if it is generated from wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, and hydropower. This is in line with the RED II definition of renewable energy, excluding energy from biogenic sources. According to the Delegated Act on

[8] *In the RFNBOs context, sustainable material may also refer to (fully) renewable electricity.*

RFNBOs, storage units cannot be considered as installations generating renewable electricity. Electricity is sourced from installation generating renewable electricity when the approaches described in chapter 4.1, 4.2.2, 4.2.3 and 4.2.4 are used. In contrast, if the grid mix determines the share of renewable electricity, as described below[9] and in chapter 4.2.1, biogenic energy is included following the definition in the Delegated Act on RFNBOs Article 4(1) subparagraph 2.

Use of equivalent concepts

In this chapter, following the terminology employed in the RED II and the Delegated Act on RFNBOs, terms such as 'bidding zone', 'imbalance settlement period' or 'downward redispatching' are used. Definitions of these terms can be found in the Annex of this document. As a basic principle, in scenarios where these exact terms do not exist or do not apply (e.g. production in non-EU countries), equivalent concepts should be used. These equivalent terms should reflect the nature of the electricity system in the given scenario or country (e.g. an equivalent term for 'bidding zone' should take into account the respective electricity market design, such as a nodal instead of a zonal design). Wherever guarantees of origin (hereafter GoOs) are mentioned in the following also equivalent documents (such as renewable energy guarantees of origin in the UK or renewable energy certificates in the US, Canada, Australia, and other countries) can be used. For further guidance on Power Purchase Agreements and guarantees of origin please see Annex II and for further guidance on bidding zone equivalents and implementation of rules on curtailment please see Annex III.

Average share of renewable electricity

Electricity used to produce RFNBO can be considered fully renewable if the respective requirements set by the RED II and the Delegated Acts on RFNBOs are met. These requirements are subject of this chapter. If these requirements are not met the renewable share of electricity in the grid can still be used for RFNBO production. Provided sourcing of renewable electricity according to each option (see chapter 4.4) is duly documented, RFNBOs producers may combine those options. While fully renewable electricity can be accounted with zero emissions, electricity sourced from the grid without meeting the requirements for fully renewable electricity will not be accounted with zero emissions. This is further described in the ISCC EU System Document 205-1.

Proof of average RE share

If electricity is sourced from the grid and the RFNBO producer wants to claim a share of this electricity as renewable based on the share of renewable electricity in the grid, they shall demonstrate to the auditor the average share of electricity from renewable sources in the country where the installation producing RFNBOs is located, as measured two years before the year in question (the year in which the production of RFNBOs takes place). This shall be done using data from official sources (e.g. via statistics provided by Eurostat SHARES, or by the respective country's energy office) which are calculated by dividing the gross final consumption of electricity from renewable

[9] *See paragraph "Average share of renewable electricity".*

sources in the country, calculated by analogy to the rules set out in Article 7(2) of the RED II, by the gross electricity production from all energy sources as defined in Annex B to Regulation (EC) 1099/2008, except from water previously pumped uphill (excluded from both the numerator and the denominator), plus imports minus exports of electricity to the country.

Cancellation of Guarantees of Origin

In countries where GoOs are available the RFNBO producer shall demonstrate to the auditor that GoOs equivalent to the amount of electricity sourced as renewable according to this option are cancelled. This GoOs can either be purchased and cancelled by the RFNBO producer or the RFNBO producer can demonstrate to the auditor that the cancellation is taken care of by a competent body designated by the Member State.

Fully renewable electricity

Electricity is considered as being fully renewable if the renewable properties can be demonstrated according to the rules set out in the RED II and the Delegated Act on RFNBOs.

Different sourcing scenarios

The rules under which electricity can be considered fully renewable differ for different electricity sourcing scenarios. A basic distinction is made as to whether the electricity is obtained via a direct connection to an installation generating renewable electricity or whether the electricity is obtained via the grid. The following five scenarios for sourcing renewable electricity for the production of RFNBOs are distinguished:

a) Electricity from directly connected installations

b) Electricity from a grid with a renewable energy share exceeding 90%

c) Electricity via a grid with an emission intensity lower than 18 gCO_2eq/MJ with further requirements

d) Electricity from the grid avoiding or reducing the need of downward redispatching of installations generating renewable electricity

e) Electricity via the grid with further requirements

Figure 3 depicts the different scenarios covered by the RED II and the Delegated Act on RFNBOs.

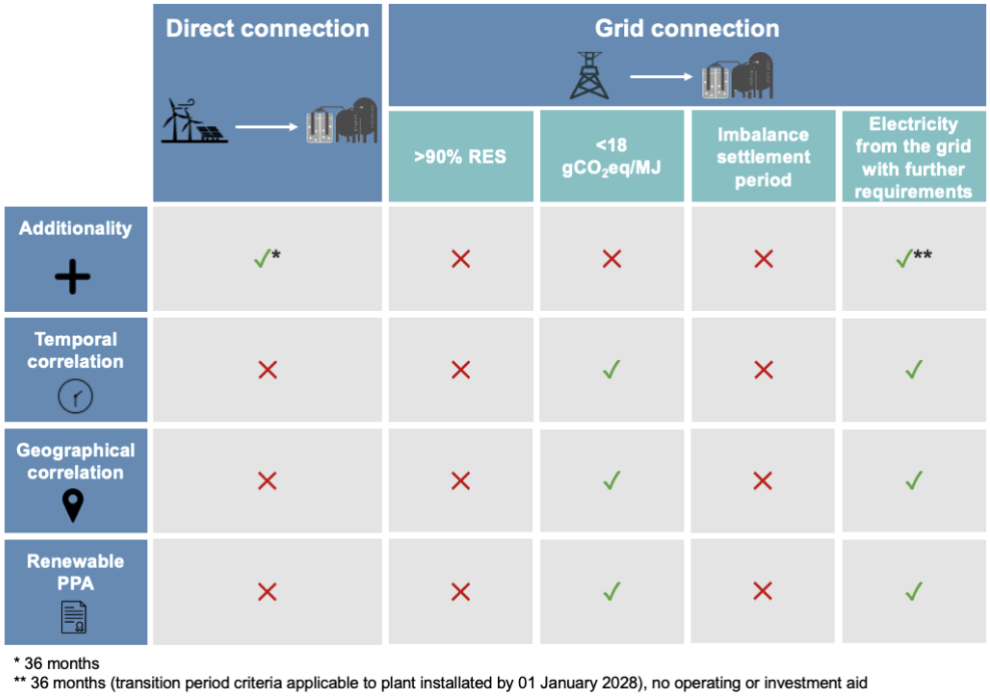

Figure 3: Overview of the requirements depending on the type of electricity connection.

Different requirements

Depending on the sourcing option, different requirements exist for counting the obtained electricity as fully renewable, as laid out in the following subchapters. RFNBO producers are allowed to source renewable (grid share option – see fourth paragraph of this chapter) and fully renewable electricity at the same time. Also sourcing of fully renewable electricity via different options is possible. In all cases, the respective requirements apply, and the amounts of electricity sourced via each option need to be documented separately (see chapter 4.4).

4.1 Electricity from directly connected installations

To count electricity that is obtained via a direct connection to an installation generating renewable electricity as fully renewable, the RFNBO producer shall provide evidence on the following:

a) The electricity is supplied

> by an installation generating renewable electricity via a direct line, or

> by an installation generating renewable electricity within the installation (site) that is producing RFNBOs;

b) The installation generating renewable electricity

> came into operation not earlier than 36 months before the installation producing RFNBOs, and

> where additional production capacity is added to an existing installation producing RFNBOs, the added capacity shall be

considered to be part of the existing installation, provided that the capacity is added at the same site and the addition takes place no later than 36 months after the initial installation came into operation;

c) The installation generating renewable electricity

> is not connected to the grid, or

> is connected to the grid but a smart metering system that measures all electricity flows from the grid shows that no electricity has been taken from the grid to produce RFNBOs.

Existence of direct line

During the audit, auditors must check the existence of a direct line between the installation generating renewable electricity and the installation producing the RFNBO.

Proof of start of operation

The RFNBO producer shall demonstrate through appropriate documentation (e.g. document indicating the date of commissioning) that the installation generating renewable electricity came into operation not earlier than 36 months before the installation producing the RFNBO. Where additional production capacity is added to an existing installation producing RFNBOs, the RFNBO producer shall provide appropriate documentation that the added capacity came into operation no later than 36 months after the initial operation.

Check of smart metering system

Where a smart metering system as described above is used, the auditor shall verify that the system is correctly calibrated, measures all electricity flows and that no electricity has been taken from the grid to produce the RFNBOs.

Guarantees of origin or equivalent

Where available, the electricity supplied via a direct connection should come with GoO to reduce the risk that any given unit of renewable electricity is not counted more than once.

Cancellation of guarantees of origin

If GoO are issued for electricity generated in the directly connected installation it must be ensured that all GoO connected to the amounts of electricity consumed in the installation producing RFNBOs are cancelled. Appropriate documentation on the cancellation of GoO must be made available to the auditor.

If no GoO were issued for the electricity in the directly connected installation, this has to be confirmed during the audit.

More information on GoO and PPA can be found in Annex II of this document.

4.2 Electricity from the grid

Electricity via grid

In many cases, an installation producing RFNBOs will obtain the required electricity from or via the grid. Four different scenarios of receiving electricity from or via the grid that may qualify as fully renewable can be distinguished:

1. Electricity from a grid with a renewable energy share exceeding 90% (chapter 4.2.1)
2. Electricity from a grid with an emission intensity lower than 18 gCO_2eq/MJ with further requirements (chapter 4.2.2)
3. Electricity from the grid avoiding or reducing the need of downward redispatching of installations generating renewable electricity (chapter 4.2.3)
4. Electricity from the grid with further requirements (chapter 4.2.4)

4.2.1 Electricity from a grid with renewable energy share exceeding 90%

Grid with high RE share

The RFNBO producer may count electricity taken from the grid as fully renewable if

a) the installation producing RFNBOs is located in a bidding zone where the average proportion of renewable electricity exceeded 90% in the previous calendar year, and

b) the number of full load hours of RFNBOs production is limited to the share of renewable electricity in the bidding zone (i.e. the installation producing RFNBOs can be operated for as many hours per year as corresponds to the respective renewable energy share). In this regard, RFNBOs produced outside of the maximum full load hours limit will be counted as non-renewable.

Calculation of average RE share

The average share of renewable electricity shall be determined by dividing the gross final consumption of electricity from renewable sources in the bidding zone[10] by the gross electricity production from all energy sources[11], except from water previously pumped uphill (i.e. pumped storage), plus imports minus exports of electricity to the bidding zone. To identify the bidding zone, information on the location of the RFNBO producing installation from official sources shall be used. Figure 4 may be considered approximate guidance.

Continuation of high RE share

Once the average share of renewable electricity exceeds 90% in a calendar year, it shall be considered to be higher than 90% for the subsequent five calendar years.

Proof of high RE share

The RFNBO producer shall demonstrate to the auditor that the average proportion of renewable electricity in the bidding zone where the installation producing RFNBOs is located exceeded 90% in at least one year of the last six preceding calendar years. In the case bidding zones are equivalent to the country, statistic data provided by Eurostat (Eurostat SHARES[12]) shall be used. Where bidding zones are not identical to countries, data from official

[10] *Calculated by analogy to the rules set out in Article 7(2) of RED II*

[11] *Energy sources as defined in Annex B to Regulation (EC) 1099/2008 Regulation of the European Parliament and of the Council of 22 October 2008 on energy statistics*

[12] *https://ec.europa.eu/eurostat/web/energy/data/shares*

national statistics have to be used that have been derived in line with the methodology applied for determining the RES-E share in the SHARES tool. In the case of non-EU countries, data published by IEA (International Energy Agency) shall be used. In the case IEA data are not available, data from national statistical institutes may be used. Figure 4 shows a recent bidding zone configuration in Europe.

Documentation of operating hours

To demonstrate to the auditor that the permissible annual operating hours have not been exceeded, the mandatory documentation on the produced amounts of RFNBO (see 4.4) can be used. If electricity is sourced from the grid during the remaining hours, without demonstrating that this electricity can count as fully renewable according to the options described in chapters 4.2.2, 4.2.3 or 4.2.4, this electricity shall be considered non-renewable.

Cancellation of guarantees of origin

In countries where GoOs are available RFNBO producer shall demonstrate to the auditor that GoOs equivalent to the amount of electricity sourced as fully renewable according to this option are cancelled. For this GoOs can either be purchased and cancelled by the RFNBO producer or the RFNBO producer can demonstrate to the auditor that the cancellation is taken care of by a competent body designated by the Member State.

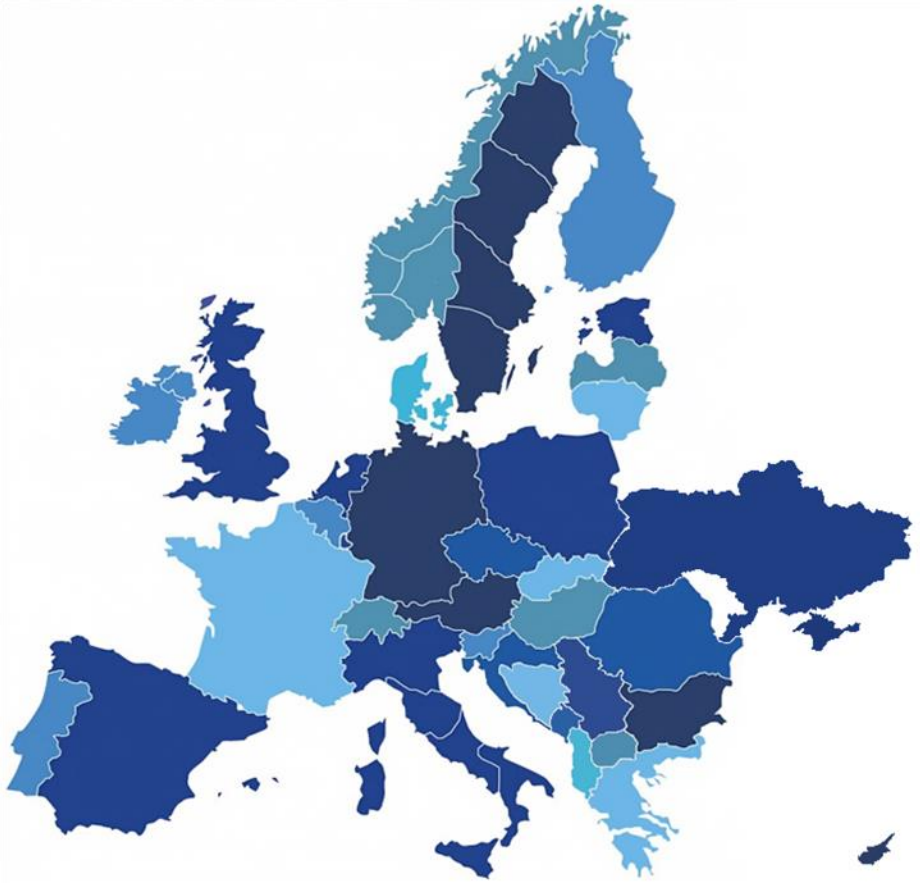

Figure 1 Overview of the bidding zone configuration in Europe in 2022. A more detailed version can for example be found on the website of ENTSO-E.[13]

4.2.2 Electricity via a grid with an emission intensity lower than 18 gCO_2eq/MJ with further requirements

Fuel producers may count electricity sourced via the grid as fully renewable if the installation producing RFNBO is located in a bidding zone where the emission intensity of electricity is lower than 18 gCO_2eq/MJ, provided that the following criteria are met:

a) the fuel producers have concluded directly, or via intermediaries, one or more renewables power purchase agreements (PPAs) with economic operators producing renewable electricity in one or more installations generating renewable electricity for an amount that is at least equivalent to the amount of electricity that is claimed as fully renewable, and the electricity claimed is effectively produced in this or these installations;

b) the conditions on temporal and geographical correlation in accordance with chapters 4.3.3 and 4.3.4 are met.

Emission intensity of electricity

The emission intensity of electricity shall be determined following the approach for calculating the average carbon intensity of grid electricity in the methodology for determining GHG savings based on latest available data (as laid down in Annex II of ISCC EU System Document 205-1).

Continued low emission intensity

Once the emission intensity of electricity is lower than 18 gCO_2eq/MJ in a calendar year, the average emission intensity of electricity shall be continued to be considered lower than 18 gCO_2eq/MJ for the subsequent five calendar years.

The RFNBO producer shall demonstrate to the auditor that the emission intensity of the electricity in the bidding zone where the installation producing RFNBOs is located has been lower than 18 gCO_2eq/MJ in at least one calendar year of the last six preceding calendar years.

Guarantees of origin or equivalent

Where available, the electricity supplied under the PPA(s) should come with GoO to reduce the risk that any given unit of renewable electricity is counted more than once.

Cancellation of guarantees of origin

If GoOs are issued for electricity generated in the installation(s) covered by the PPA(s) it must be ensured that all GoOs connected to the amounts of electricity consumed in the installation producing RFNBOs are cancelled. Appropriate documentation on the cancellation of GoO must be made available to the auditor.

If no GoOs were issued for the electricity in the installation(s) covered by PPA, this has to be confirmed during the audit.

[13] *Source: entsoe.eu/data/energy-identification-codes-eic/eic-area-codes-map/*

Intermediaries between the RFNBOs producer and the renewable electricity producer may be contracting parties (e.g. intermediaries can represent the renewable electricity producer). However, a direct relation between the renewable electricity producer and the RFNBOs producer shall be maintained and demonstrated, e.g. the contract between the RFNBOs and the intermediary shall mention the same installation(s) producing renewable electricity reported in the contract(s) between the intermediary and the renewable electricity producer.

More information on GoO and PPA can be found in Annex II of this document.

4.2.3 Electricity from the grid avoiding or reducing the need of downward redispatching of installations generating renewable electricity

Electricity taken from the grid that is used to produce RFNBOs may also be counted as fully renewable if the electricity is consumed during an imbalance settlement period during which the fuel producer can demonstrate, based on evidence from the national transmission system operator, that:

a) power-generating installations using renewable energy sources were redispatched downwards in accordance with Article 13 of Regulation (EU) 2019/943 (Internal market for electricity), and

b) the electricity consumed for the production of RFNBOs reduced the need for redispatching by a corresponding amount.

Evidence

The evidence from the national transmission system operator, demonstrating the compliance with the two criteria above must be made available to the auditor for all amounts of electricity claimed as fully renewable in accordance with this chapter. This evidence must include a confirmation from the national transmission system operator that the amount of electricity is not claimed by any other party.

Cancellation of guarantees of origin

Where GoOs are available RFNBO producer shall demonstrate to the auditor that GoOs equivalent to the amount of electricity sourced as fully renewable according to this option are cancelled. For this GoOs can either be purchased and cancelled by the RFNBO producer or the RFNBO producer can demonstrated to the auditor that the cancellation is taken care of by a competent body designated by the Member State.

4.2.4 Electricity via the grid with further requirements

Where the conditions in chapters 4.2.1, 4.2.2 and 4.2.3 are not met, RFNBOs producers may count electricity taken from the grid as fully renewable if it complies with the conditions on additionality (4.3.1), geographical correlation (4.3.2) and temporal correlation (4.3.3).

Electricity via PPA can be directly sourced from the RES producer or via intermediaries. In the latter case, a direct relation between the renewable

electricity producer and the RFNBOs producer shall be maintained and demonstrated.

More information on GoO and PPA can be found in Annex II of this document.

4.3 Criteria for counting electricity from grid with further requirements

When the conditions laid down in chapters 4.2.1, 4.2.2 and 4.2.3 are not met, RFNBOs producers may count electricity as fully renewable if it complies with the conditions on additionality, geographical correlation and temporal correlation.

4.3.1 Additionality

RED II requires additionality

The RED II requires an element of additionality, i.e. that the RFNBO producer is adding to the renewable deployment or to the financing of renewable energy.
The additionality condition shall be considered complied if the fuel producers produce an amount of renewable electricity in their own installation that is at least equivalent to the amount of electricity claimed as fully renewable, or have concluded (directly or via intermediaries) one or more power purchase agreements (PPAs) with one or more installations for an amount or renewable electricity that is at least equivalent to the amount of electricity that is claimed as fully renewable and the electricity claimed is effectively produced in the installation(s).
Furthermore, the following criteria must be met:

a) the installation generating renewable electricity came into operation not earlier than 36 months before the installation producing RFNBO.

b) The installation generating renewable electricity has not received support in the form of operating aid or investment aid, excluding support received by installations before their repowering, financial support for land or for grid connections, support that does not constitute net support, such as support that is fully repaid and support for installations generating renewable electricity that are supplying installations producing RFNBOs used for research, testing and demonstration.

Proof of recent start of operation

The RFNBO producer shall demonstrate through appropriate documentation (e.g. documents indicating the dates of commissioning, GoO issued for electricity generated in the installation in question) that the installation generating renewable electricity came into operation not earlier than 36 months before the installation producing the RFNBO.

Ending of PPA

Where an installation generating renewable electricity complied with the requirements set out in (a) of this paragraph under a renewables PPA with a fuel producer that has ended, it shall be considered to have come into

operation at the same time as the installation producing the RFNBO under a new renewables PPA. In this case, the RFNBO producer shall provide evidence to the auditor that the respective PPA has ended and has complied with the requirements set out in (a) before it ended.

Additional production capacity

In case additional production capacity is added to an existing installation producing RFNBOs at the same site and the added capacity starts operating not later than 36 months after the initial installation came into operation, the added capacity is considered to have come into operation at the same time as the initial installation. The RFNBO producer shall demonstrate to the auditor the date on which the additional production capacity at the site came into operation.

Support for RE installations

For installations producing RFNBOs that are not used for research, testing and demonstration purposes compliance with the requirement under (b) of this paragraph shall be demonstrated to the auditor via appropriate documentation, e.g. via a statement included in GoO.

Research, testing and demonstration

However, if the installation producing RFNBOs is used for research, testing and demonstration, the PPA(s) may also cover installations producing renewable electricity that have received support in the form of operating aid or investment aid. Evidence that the installation producing RFNBOs is used for research, testing, and demonstration purposes has to be provided to the auditor.

Guarantees of origin or equivalent

Where available, the electricity supplied from own installations or installations under PPA(s) should come with GoO to reduce the risk that any given unit of renewable electricity is counted more than once.

Cancellation of guarantees of origin

If GoO is issued for electricity generated in own installation or in installations under PPA(s) it must be ensured that all GoO connected to the amounts of electricity consumed in the installation producing RFNBOs are cancelled. Appropriate documentation on the cancellation of GoO must be made available to the auditor.

If no GoO was issued for the electricity sourced from the grid with further requirements, this has to be confirmed during the audit.

Transition phase

The criteria on additionality under (a) and (b) do not apply until 01 January 2038 to installations producing RFNBOs that come into operation before 01 January 2028. This exemption does not apply to capacity added to existing RFNBO production installations after 01 January 2028.

More information on GoO and PPA can be found in Annex II of this document.

4.3.2 Temporal correlation

RED II requires temporal correlation

The RED II requires a temporal correlation between the generation of electricity that is claimed as fully renewable and the use of it for RFNBO

production. For electricity supplied with a direct connection, for electricity taken from a grid with a share of renewable electricity exceeding 90% (see 4.2.1), and for electricity taken from the grid avoiding or reducing the need of downward redispatching of installations generating renewable electricity (see 4.2.3) temporal correlation is considered to be met. For electricity sourced from indirectly connected installations (see 4.2.2 and 4.2.4) the requirement for temporal correlation is considered to be met if one of the following cases applies:

Before 31 December 2029

a) Until 31 December 2029 the temporal correlation condition shall be considered complied with if the RFNBO is produced during the same calendar month as the renewable electricity produced in own installations or in installations under renewable PPA(s) or from renewable electricity from a new storage[14] asset that is located behind the same network connection point as the electrolyser or the installation generating renewable electricity, that has been charged during the same calendar month in which the electricity has been produced in own installations or in installations under renewables PPA(s).

From 01 January 2030

b) From 1 January 2030[15], the temporal correlation condition shall be considered complied with if the RFNBO is produced during the same one-hour period as the renewable electricity produced in own installations or in installations under renewable PPA(s) or from renewable electricity from a new storage asset[13] that is located behind the same network connection point as the electrolyser or the installation generating renewable electricity, that has been charged during the same one-hour period in which the electricity has been produced in own installations or in installations under renewables PPA(s).

c) The temporal correlation condition shall always be considered complied with if the RFNBO is produced during a one-hour period where the clearing price of electricity resulting from single day-ahead market coupling in the bidding zone, as referred to in Article 39 (2), point (a) of Regulation (EU) 2015/1222[16], is lower or equal to EUR 20 per MWh or lower than 0,36 times the price of an allowance to emit one tonne of CO_2 equivalent during the relevant period for the purpose of meeting the requirements for an emission trading scheme of Directive 2003/87/EC[17]. This rule concerning the clearing price can be

[14] *Storage assets are storage assets that came into operation not earlier than 36 months before the installation producing RFNBOs.*

[15] *According to Art. 6, 2nd paragraph of DA on RFNBOs, Member States may apply the rules set out in this paragraph from 1 July 2027 for RFNBO produced in their territory. In this case, compliance with the national law will be verified during the audit.*

[16] *Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management*

[17] *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC*

applied only if the price for electricity is established in a functioning market and if the price of an allowance to emit one tonne of CO_2 equivalent is established in a functioning market. The closing price of the previous trading day for December for the ongoing year (Source: ICE Index or EEX) should be applied for the implementation of this provision.

Documentation of electricity

Thus, the documentation of generated and consumed electricity for the production of RFNBOs needs to be available on an hourly basis where relevant – even before 01 January 2030. Chapter 4.4 goes into further detail on the data that will need to be documented.

4.3.3 Geographical correlation

RED II requires geographical correlation

The RED II also requires a geographical correlation between generation of electricity that is claimed as fully renewable and the use of it for RFNBO production. For electricity supplied with a direct connection (see 4.1), for electricity taken from a grid with a share of renewable electricity exceeding 90% (see 4.2.1), and for electricity taken from the grid avoiding or reducing the need of downward redispatching of installations generating renewable electricity (see 4.2.3) geographical correlation is considered to be met. For electricity sourced from indirectly connected installations (see 4.2.2 and 4.2.4) the geographical correlation condition is considered compiled with if at least one of the following criteria related to the location of the RFNBO installation is met:

a) the own installation generating renewable electricity or the installation generating renewable electricity under a renewables PPA is located, or was located at the time when it came into operation, in the same bidding zone as the electrolyser;

b) the own installation generating renewable electricity or the installation generating renewable electricity under a renewables PPA is located in an interconnected bidding zone, including in another Member State, and electricity prices in the relevant time period on the day-ahead market referred to in chapter 4.3.2 in the interconnected bidding zone is equal or higher than in the bidding zone where the RFNBO is produced;

c) the own installation generating renewable electricity or the installation generating renewable electricity under the renewable PPA is located in an offshore bidding zone that is interconnected with the bidding zone where the electrolyser is located.

The RFNBO producer shall demonstrate the compliance with the geographical correlation condition to the auditor through appropriate documentation of the location(s) of the renewable electricity generating installation(s) and the location of the installation producing RFNBOs. Where geographical correlation is claimed to be complied with by means of subparagraph (b) the

day-ahead prices at the relevant times of the involved bidding zones must be demonstrated to the auditor through appropriate documentation.

Member States may introduce additional criteria on geographical correlation to ensure compatibility of capacity additions with the national planning of the hydrogen and electricity grid. In this case, compliance with the national law will be verified during the audit.

More information on GoO and PPA can be found in Annex II of this document.

4.4 Documentation of renewable electricity and RFNBO production

Hourly documentation

The RFNBO producer must document the following information for each hour, where relevant:

a) The amount of electricity used to produce RFNBOs. This information must be further detailed as follows:
   i. the amount of electricity sourced from the grid that does not count as fully renewable as well as the proportion of renewable electricity;
   ii. the amount of electricity that counts as fully renewable because it has been obtained from a direct connection to an installation generating renewable electricity as set out in chapter 4.1;
   iii. the amount of electricity sourced from the grid that counts as fully renewable as the renewable energy share is exceeding 90% (see chapter 4.2.1);
   iv. the amount of electricity that counts as fully renewable in accordance with the criteria for a grid with an emission intensity lower than 18 gCO_2eq/MJ (see chapter 4.2.2);
   v. the amount of electricity that counts as fully renewable in accordance with the criteria set out in chapter 4.2.3 for electricity from the grid avoiding or reducing the need of downward redispatching of installations generating renewable electricity;
   vi. the amount of electricity that counts as fully renewable in accordance with the criteria set out in chapter 4.2.4 (further requirements for electricity taken from the grid).

b) The amount of renewable electricity generated by all directly or indirectly connected installations (including on-site) regardless of whether the renewable electricity is used to produce RFNBOs or for other purposes.

c) The amounts of produced RFNBOs and the amounts of any other products produced that do not qualify as RFNBOs.

Annex IV provides an overview on the requirements to source eligible electricity for RFNBOs production.

5 Rules for eligible inputs for RCFs

Two input categories

Inputs to a fuel production process that would qualify a share or all of the output as RCFs need to comply with criteria that can be derived from the definition of RCFs. Two distinct input categories are named in the RED II:

a) liquid or solid waste streams of non-renewable origin which are not suitable for material recovery in accordance with Article 4 of Directive 2008/98/EC, or
b) waste processing gas and exhaust gas of non-renewable origin which are produced as an unavoidable and unintentional consequence of the production process in industrial installations.

To qualify an input as liquid or solid waste that is eligible as input for RCF production according to (a) the RCF producer must demonstrate to the auditor that the material is a waste and not suitable for material recovery. To verify that the material can be considered a waste the requirements laid down in ISCC EU System Document 202-5 “Waste and Residues” shall be applied. In particular, Chapter 3 reports the definition of waste and waste hierarchy and according to Directive 2008/98/EC (Article 3(1) and Article 4, respectively). The document additionally provides information about the verification process (Chapter 5). The RCF producer must demonstrate, through appropriate documentation, that the waste cannot be used for material recovery (e.g. recent peer reviewed research showing that material recovery is not done on a commercial level for the input in question).

To qualify an input as waste processing gas and/or exhaust gas that is eligible as input for RCF production according to (b) the RCF producer must demonstrate to the auditor that the gas is either a waste (according to the ISCC EU System Document 202-5 “Waste and Residues”) or would otherwise be exhausted into the atmosphere, is not produced intentionally, and cannot be avoided in the production process it stems from.

6 Traceability and Chain of Custody

Traceability in RFNBOs supply chains

The traceability of RFNBOs starts at the producer of the renewable electricity and covers the entire downstream supply chain. Traceability is achieved by applying an appropriate chain of custody method (e.g. mass balance or physical segregation) as well as relevant documentation. This includes Self-declarations and Sustainability Declarations, assuring that all relevant information, such as the country of origin (i.e. the country where the renewable electricity was generated), the amount and the respective GHG emissions of a material can be clearly identified at each level of the supply chain. Specifically for self-declaration: In the case of electricity sourced via direct

connection or via PPA, the auditor must verify that the information reported in the issued self-declaration(s) is correct and in line with the information reported in the PPA. Additionally, the auditor will verify that the issued GoOs are cancelled. In the case a self-declaration is issued by a point of origin for carbon sources that can be considered as waste or residues, requirements laid down in the ISCC EU System Document ISCC EU 203 “Traceability and Chain of Custody” for self-declarations and points of origin apply.

RFNBOs Certification covers entire supply chain

The entire supply chain of RFNBOs must be covered by certification. The first element of the supply chain requiring individual certification is the economic operator producing hydrogen out of the renewable electricity (i.e. electrolyser certified under the scope processing unit).

Traceability in RCFs supply chains

The traceability of RCFs starts at the economic operator at which the waste is generated and covers the entire downstream supply chain. This includes Self-declarations and Sustainability Declarations, assuring that all relevant information, such as the amount and nature (liquid or solid waste streams, waste processing gas and exhaust gas) and the respective GHG emissions of a material can be clearly identified at each level of the supply chain. In the case a self-declaration is issued from a point of origin for input(s) that can be considered waste or residues, requirements laid down in the ISCC EU System Document 203 “Traceability and Chain of Custody” apply.

RCFs Certification covers entire supply chain

The entire supply chain of RCFs must be covered by certification. The first element of the supply chain requiring individual certification is the economic operator collecting the RCFs feedstock from the point of origin and becoming the owner of the material. This economic operator is called “collecting point”.

General definitions

The general definitions of supply chain elements are specified in ISCC EU System Document 201 “System Basics”. The general requirements for traceability and chain of custody as well as general and specific audit requirements for the individual supply chain elements are specified in ISCC EU System Document 203 “Traceability and Chain of Custody”.

Forwarding of sustainability information

The obligation for certification according to this standard starts with the economic operator producing hydrogen (processing unit) out of the renewable electricity or the collecting point of the RCFs feedstock. The producer of the renewable electricity shall provide a signed self-declaration to the certified hydrogen producer. The point of origin of the RCFs feedstock shall provide a signed self-declaration to the collecting point. All further certified elements of RFNBOs and RCFs supply chain issue sustainability declarations when they forward the sustainable material through the supply chain. Under ISCC, the identification and tracking of the origin, processing history distribution and location of materials can be done “step-by-step” through the entire supply chain.

Information on Sustainability Declarations

The following general and product related information must be available on Sustainability Declarations for all incoming sustainable material as well as on

the Sustainability Declarations issued by the certified party for all sustainable output material.

General information

> Name and address of the supplier

> Name and address of the recipient

> Related contract number

> Date of dispatch of the sustainable material

> Address of dispatch/shipping point of the sustainable material (e.g. processing unit, storage facility, hydrogen terminal, hydrogen entry point) (applicable if different from the address of the supplier)

> Address of receipt/receiving point of the sustainable material (e.g. processing unit, storage facility, hydrogen terminal, hydrogen exit point) (applicable if different from the address of the recipient)

> Name of the certification system and certificate number of the supplier

> Date of the issuance of the Sustainability Declaration

> Unique number of the Sustainability Declaration

Product related information:

> Type of product (e.g. hydrogen, methane, methanol, ammonia, etc); the product group has to be reflected

> Raw material: Renewable electricity

> Country of origin of the renewable electricity: Country where renewable electricity was produced

> Scope of certification of the renewable electricity:

  - Statement: “The renewability of the electricity was verified according to Art. 3 and 4 of the Delegated Act on RFNBOs

> Quantity of delivered sustainable product in MWh (based on LHV), metric tons or m³ at 15°C

> Statement(s) “ISCC Compliant” and/or “EU RED Compliant” (if applicable, please see ISCC Document 203 for further information)

GHG emission information Please see ISCC EU System Documents 205 “Greenhouse Gas Emissions” and 205-1 “Renewable Fuels of non-biological Origin (RFNBO) and Recycled Carbon Fuels: Greenhouse Gas Emissions” for further information.[18]

[18] *In general, the application of default and disaggregated default values is possible under ISCC EU. Should such values become available for RFNBOs they could be applied under this standard*

> Statement of an actual value in kg CO_2eq per unit of product. For e_{td} (transport and distribution) the means of transport and the transportation distance from the supplier to the recipient have to be included on the Sustainability Declaration

The following calculation formula elements have to be reported separately:

- e_i: Emissions from the supply of inputs (i.e. production of renewable electricity)
- e_p: Emissions from processing
- e_{td}: Emissions from transport and distribution
- e_{ccs}: Emission savings from carbon capture and geological storage

If the processing unit produces final RFNBO the following information has to be added to the Sustainability Declaration (i.e. Proof of Sustainability/PoS):

> GHG emissions of the RFNBO in g CO_2eq/MJ

> The relevant fossil fuel comparator in g CO_2eq/MJ

> GHG emission savings (in per cent) compared to the relevant fossil fuel

> e_u: Emissions from combusting the fuel in its end-use the fuel in use

Mass balance applicable

For RFNBOs the mass balance approach is applicable along the entire supply chain. Renewable hydrogen is produced through the electrolysis process by using renewable electricity. In the electrolysis process not only hydrogen but also other outputs are produced, depending on the type of electrolysis. One example for an additional output is oxygen (O_2).

Proportional allocation of sustainability characteristics

For processes in which electricity enables chemical reactions and is used to produce one or several products, the allocation of sustainability and GHG emission saving characteristics is limited to a “proportional approach” or “stoichiometric approach”. This means that the sustainable share must be attributed to all process products in the same ratio in which these products are generated per unit of consumed electricity. A re-attribution or shift of the attributed sustainable share from one product of the process to another is not allowed. For example, in case of a water electrolysis processing unit in which renewable electricity and water are used to produce hydrogen as the main product, the process yields equivalent amounts of hydrogen and oxygen (for every two moles of hydrogen produced, one mole of oxygen is also produced). In this case it is not allowed to attribute or transfer sustainable characteristics from e.g. oxygen to hydrogen or vice versa. Please see ISCC EU System Document 203 “Traceability and Chain of Custody” for the general mass balance requirements.

Annex I: Definitions

Relevant definitions

For the purposes of this document the definitions of the Delegated Act on RFNBOs and the RED II apply. This Annex contains a list of particularly relevant definitions. See the Delegated Act on RFNBOs and the RED II for a complete list of definitions.

Relevant definitions of Art. 2 of the Delegated Act

1) 'bidding zone' means bidding zone as defined in Article 2, point (65), of Regulation (EU) 2019/943 of the European Parliament and of the Council[19] for Member States, or an equivalent concept for third countries;

2) 'direct line' means direct line as defined in Article 2, point (41), of Directive 2019/944 of the European Parliament and of the Council[20]

3) 'installation generating renewable electricity' means individual units, or groups of units, producing electricity in one or several locations from the same or from different renewable sources, as defined in Article 2 (1) of RED II, excluding units producing electricity from biomass and storage units;

4) 'fuel producer' means an economic operator that produces renewable liquid and gaseous transport fuel of non-biological origin;

5) 'come into operation' means starting production of renewable liquid and gaseous transport fuels of non-biological origin or renewable electricity for the first time or following a repowering as defined under Article 2, point (10) of RED II requiring investments exceeding 30% of the investment that would be needed to build a similar new installation;

6) 'smart metering system' means smart metering system as defined in Article 2(23) of Directive 2019/944[21];

7) 'imbalance settlement period' means imbalance settlement period as defined in Article 2, point (15), of Regulation (EU) 2019/943[22] within the Union, or an equivalent concept for third countries

[19] *Art. 2(65) of Regulation (EU) 2019/943 of the internal market for electricity: 'bidding zone' means the largest geographical area within which market participants are able to exchange energy without capacity allocation*

[20] *Art. 2(41) of Directive 2019/944 on common rules for the internal market for electricity and amending Directive 2012/27/EU: 'direct line' means either an electricity line linking an isolated generation site with an isolated customer or an electricity line linking a producer and an electricity supply undertaking to supply directly their own premises, subsidiaries and customers*

[21] *Art. 2(23) of Directive 2019/944: 'smart metering system' means an electronic system that is capable of measuring electricity fed into the grid or electricity consumed from the grid, providing more information than a conventional meter, and that is capable of transmitting and receiving data for information, monitoring and control purposes, using a form of electronic communication*

[22] *Art. 2(15) of Directive 2019/944: 'imbalance settlement period' means the time unit for which the imbalance of the balance responsible parties is calculated*

Relevant definitions of Art. 2 of the RED II/RED III

1) ‘energy from renewable sources’ or ‘renewable energy’ means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas;

10) ‘repowering’ means renewing power plants that produce renewable energy, including the full or partial replacement of installations or operation systems and equipment for the purposes of replacing capacity or increasing the efficiency or capacity of the installation;

12) ‘guarantee of origin’ means an electronic document which has the sole function of providing evidence to a final customer that a given share or quantity of energy was produced from renewable sources;

17) ‘renewables power purchase agreement’ means a contract under which a natural or legal person agrees to purchase renewable electricity directly from an electricity producer;

35) ‘recycled carbon fuels’ means liquid and gaseous fuels that are produced from liquid or solid waste streams of non-renewable origin which are not suitable for material recovery in accordance with Article 4 of Directive 2008/98/EC, or from waste processing gas and exhaust gas of non-renewable origin which are produced as an unavoidable and unintentional consequence of the production process in industrial installations;

36) ‘renewable fuels of non-biological origin’ means liquid and gaseous fuels the energy content of which is derived from renewable sources other than biomass.

Annex II: Power Purchase Agreement and Guarantees of Origin (GoO)

In the context of RFNBOs a PPA provides a clear link between a RFNBO producer and one or more installations generating renewable electricity if the link is not otherwise given (e.g., direct connection). The basis for the minimum requirements for a PPA derives from the PPA definition laid down in the RED II (Article 2(17), and Annex I this document). Intermediaries between the RFNBOs producer and the renewable electricity producer may be contracting parties (e.g. intermediaries can represent the renewable electricity producer). However, a direct relation between the renewable electricity producer and the RFNBOs producer shall be maintained and demonstrated, e.g. the contract between the RFNBOs and the intermediary shall mention the same installation(s) producing renewable electricity reported in the contract(s) between the intermediary and the renewable electricity producer.

Guarantee of Origin (GoO) is defined as in Article 2(12) of the RED II and represent a tool that is applied within the territories of the European Union. Issued GoO must meet the requirements laid down in Article 19 RED II (this Article applies only in the EU territories) and furthermore carry the same attributes as the physical installation producing the electricity, including, *inter alia*, the location of the installation, the age of the installation, and the time of the production. GoOs must have issued for the installations covered by PPAs. The renewable electricity producers not allowed to sell or transfer the associated GoOs to any other entity than the operator of the electrolyser under the PPA.[23] As already pointed out in the document, to avoid double counting, if GoO are issued for renewable electricity sourced by the RFNBO producer it must be ensured that all GoO connected to the amounts of electricity consumed in the installation producing RFNBOs are cancelled. The cancellation can be performed, for instance, by competent authorities designated by the Member State or by the RFNBOs producer.

A GoO shall be of the standard size of 1 MWh and be valid for 12 months after the production of the relevant energy unit.

A GoO shall specify at least:

1. The energy source from which the energy was produced and the start and end dates of production;
2. The identity, location, type and capacity of the installation where the energy was produced;
3. Whether the installation has benefited from investment support and whether the unit of energy has benefited in any other way from a national support scheme, and the type of support scheme;
4. The date on which the installation became operational;
5. The date and country of issue and a unique identification number.

In the case electricity production occurs outside of the European Union territories and thus GoGs are not available, alternative Energy Attribute Certificates (EACs) can be used. Here, relevant examples include Renewable Energy Certificates (RECs) in North America, Renewable Energy Guarantees of Origin (REGO) in the UK, International RECs (I-RECs) and Tradable Instruments for Global Renewables (TIGRs) across in many other countries in the World (Latin America, Africa, Asia). Any other EACs shall ensure the same degree of robustness.

The EACs shall report the same minimum amount of information provided for GoOs (Article 19 RED II).

In the case neither GoOs nor EACs are available, the RFNBOs producer shall be in the position to demonstrate:

[23] T*o enforce this, the Member State may decide to immediately cancel the associated electricity GoOs.*

1. The energy source from which the energy was produced and the start and end dates of production;
2. The identity, location, type and capacity of the installation where the energy was produced;
3. Whether the installation has benefited from investment support and whether the unit of energy has benefited in any other way from a national support scheme, and the type of support scheme;
4. The date on which the installation became operational;
5. The amount of electricity delivered to the RFNBOs production plant;
6. The date when the electricity has been delivered to the RFNBOs production plant;
7. The date when the electricity has been used by the RFNBOs production plant.

The requirements on GoOs also apply in cases where the conclusion of a renewables PPA is not required.

Annex III: Implementation of bidding zone concept and curtailment in non-EU countries

The provisions implemented in this document and based on the Commission Delegated Regulations 2023/1184 and 2023/1185 (RFNBOs Delegated Acts) refer to concepts and definitions set out in the European Union electricity market. However, given the fact that those provisions apply regardless of whether RFNBOs are produced inside or outside the territory of the European Union, ISCC provides guidelines on how to implement and apply key-concepts in non-EU countries.

Implementation of the bidding zone concept

As described, the RED II employs the term “bidding zone” to outline specific requirements with respect to electricity requirements and RFNBOs production (see chapters 4.2.1, 4.2.2, 4.3.2, and 4.3.3). The term “bidding zone” is defined in the Article 2(41) of Regulation (EU) 2019/943 of the European Parliament and of the Council Member States as “the largest geographical area within which market participants are able to exchange energy without capacity allocation“. Further related definitions can be sourced in Article 2 of the same Regulation. As a basic principle, in scenarios where these exact terms do not exist or do not apply (e.g. non-EU countries), equivalent and most similar concepts should be used.

In order to assess whether a certain geographical zone should be considered a bidding zone equivalent, an approach following the criteria and rationale laid down in the Regulation (EU) 2019/943 should be followed. At first, if rules requiring the establishment of hourly price for electricity grid within a geographical area are in place, the above area can be considered a bidding zone equivalent. In the case those rules are not present, the physical

characteristics of the network shall be considered, namely if the electricity network is integrated or several separated networks are present. If there several networks are present, each network should be considered as a bidding zone for the purpose of the implementation of the methodology.
If the electricity network of the country is integrated and there are no geographically differentiated electricity prices, the whole country may be considered as one bidding zone for the purpose of the implementation of the RFNBO delegated act.

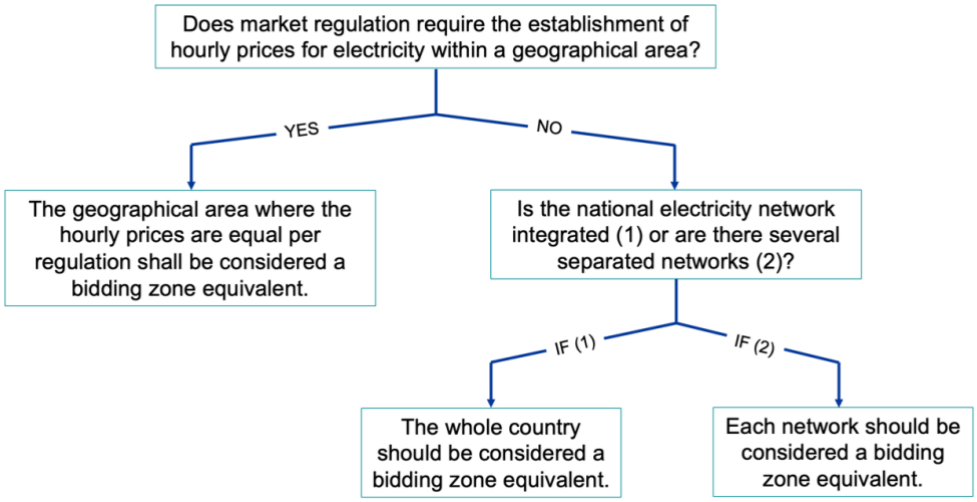

Figure 5 Guidance tree for bidding zone equivalent concept in non-EU countries

Please note that the result of the guidance tree does not represent an official classification of bidding zone equivalent in non-EU countries. On the base of the provided data and info by the system user, the auditor shall take the decision whether a certain geographical zone should be considered a bidding zone equivalent or not.

Implementation of rules on curtailment

Chapter 4.2.3 lays down the requirements for system users to source fully renewable electricity through avoiding or reducing the need of downward redispatching of installations generating renewable electricity. Implementation of those requirements in third countries will require that:

(1) a national or regional entity with the equivalent tasks of a National Transmission Operator is in place (Directive (EU) 2019/944 of the European Parliament and of the Council);

(2) requirements and rules for redispatching downwards are equivalent to the ones defined in Article 13 of Regulation (EU) 2019/943.

Annex IV: Requirements to verify eligible electricity sourcing

Please note that the following table does not replace the ISCC Audit Procedure: auditor are indeed required to use ISCC Audit Procedures during audit.

Requirement	Verification guidance (examples)
GENERAL REQUIREMENTS	
Proof that the electricity used to produce RFNBOs is measured independently from any amount of electricity used for different purposes.	Layout plans that include electrical connections and metering systems.
Verify that relevant data pertaining to the amount of electricity that is used to produce RFNBOs are measured and documented with (at least) hourly resolution. In particular, the following: ▪ amount sourced from the grid that does not count as fully renewable as well as the proportion of renewable electricity in the grid; ▪ amount sourced as fully renewable via eligible direct connections or from eligible on-site electricity generating installations; ▪ amount sourced as fully renewable because the criteria for electricity from grids with a renewable energy share exceeding 90%; ▪ amount sourced as fully renewable because the criteria for electricity from grids with emission intensities lower than 18 gCO_2eq/MJ; ▪ amount sourced as fully renewable because the criteria on additionality, temporal correlation and geographical correlation; ▪ amount of renewable electricity generated by the installations generating renewable electricity, regardless of whether they are directly connected to an electrolyser and regardless of whether the renewable electricity is used for the production of RFNBO or for other purposes.	Electricity metering system, internal company documentation system.
Verify that the relevant data referred to: ▪ amount of renewable electricity generated by all directly connected installations (including on-site),	Electricity metering system, internal company documentation system.

▪ amount of electricity generated by all installations that are covered by PPA(s) concluded by the RFNBO producer, ▪ amount of electricity generated by installations owned by the RFNBO producer regardless of whether the renewable electricity is used to produce RFNBOs or for other purposes, are measured and documented with (at least) hourly resolution.	
Verify that the relevant data referred to: ▪ the amount of RFNBOs produced, and ▪ the amount of any other products produced that do not qualify as RFNBOs are measured and documented with (at least) hourly resolution.	Internal company documentation system.
PARTIALLY RENEWABLE ELECTRICITY	
Evidence showing the average share of electricity from renewable sources in the country the RFNBO producing installation is located in, as measured two years before the year in question.	Statistics about the share of renewable electricity in the grid drawn from reliable sources (e.g., country's energy office, grid operator, Eurostat SHARES).
FULLY RENEWABLE ELECTRICITY	
1. DIRECT CONNECTION	
Verify that a direct line/connection between the RES producer and the RFNBOs production plant is in place.	On-site audit, layout plans showing electrical connections.
a) Ensure that the electricity producing installation not connected to the grid or b) ensure that no electricity from the grid is counted as if it were coming from the direct connection.	a) Verify that no connection with the grid is in place (via on-site audit, layout plans showing electrical connections and metering systems). b) Verify that there is a correctly calibrated – smart metering system in place that ensures no electricity flows from the grid to the RFNBOs producing installation were counted as having come via the direct line (via on-site audit, layout plans showing electrical connections and metering systems).

Ensure that the energy source used to produce electricity is renewable, not of biological origin, and not from a storage unit.	On-site visit, satellite imagery (e.g. remote sensing), GoOs or similar (EACs) if available.
Ensure that the installation generating electricity came into operation not earlier than 36 months before the installation producing RFNBOs.	Commissioning documents or operation permits for installation(s) generating electricity.
In case additional production capacity was added to an existing installation producing RFNBOs: Ensured that the additional production capacity was added a at the same site and took place no later than 36 months after the initial installation came into operation.	Commissioning documents or operation permits for installation(s) producing RFNBOs.
2. ELECTRICITY FROM A GRID WITH RENEWABLE ENERGY SHARE EXCEEDING 90%	
Ensure that the RFNBOs production plant is located in a bidding zone where the proportion of renewable electricity exceeds 90% in the previous calendar year.	Statistics about the share of renewable electricity in the bidding zone drawn from reliable sources (e.g. ENTSO-E website, Eurostat SHARES, official national statistics).
In the case the concept of bidding zone equivalent (outiside of the EU territories) is used, ensure that the methodology is properly followed.	Electricity data from the relevant grid operator (establishment of an hourly price for electricity in the selected geographical area, physical characteristics of the network).
Ensure that the number of full load hours of RFNBOs production is limited to the share of renewable electricity in the bidding zone.	Statistics about the share of renewable electricity in the bidding zone drawn from reliable sources (e.g. ENTSO-E website). Internal documentation about use of the eligible electricity for RFNBOs production (e.g. via metering system), amounts of produced RFNBOs and the amounts of any other products produced that do not qualify as RFNBOs (documentation of operating hours).
Ensure that if GoOs are used, those are in line with the related requirements and canceled once the electricity claimed in those has been used.	Proof of cancellation (either from the electricity producer of from the competent body deisgnated by the Member State).
3. ELECTRICITY VIA A GRID WITH AN EMISSION INTENSITY LOWER THAN 18 gCO_2EQ/MJ	
Ensure that the RFNBOs production plant is located in a bidding zone where where the emission intensity of electricity is lower than 18 gCO_2eq/MJ in at least one calendar year of the last six preceding calendar years.	GoOs document. Verify that either the correct value for EU Member State is correctly used (up-to-date values from reliable source, e.g. the Annex of the Commission Implementing Regulation 2023/1185) or the calculation emthodology has been correctly performed.

Ensure that the sourced electricity is substantiated by PPAs. Verify if PPAs with renewable electricity installations cover at least the amount of electricity counted as fully renewable and that these are valid for the period during which the respective amount of electricity is sourced.	PPAs, internal documentation.
Verify that the criteria on geographical correlation have been met.	See the section "Geographical Correlation".
Verify that the criteria on temporal correlation have been met.	See the section "Temporal Correlation".
Ensure that if GoOs are used, those are in line with the related requirements and canceled once the electricity claimed in those has been used.	GoOs documents and their Proof of cancellation (either from the electricity producer of from the competent body deisgnated by the Member State).
4. ELECTRICITY FROM THE GRID AVOIDING OR REDUCING THE NEED OF DOWNWARD REDISPATCHING OF INSTALLATIONS GENERATING RENEWABLE ELECTRICITY	
Ensure that power-generating installations using renewable energy sources were redispatched downwards.	Evidence from the national transmission system operator.
Verify that the electricity consumed for the production of RFNBOs reduced the need for redispatching by a corresponding amount.	Evidence from the national transmission system operator.
5. ELECTRICITY VIA THE GRID WITH FURTHER REQUIREMENTS	
Verify that the criteria on geographical correlation have been met.	See the section "*Geographical Correlation*".
Verify that the criteria on temporal correlation have been met.	See the section "*Temporal Correlation*".
Verify that the criteria on additionality have been met.	See the section "*Additionality*".
ADDITIONALITY	
Verify that the electricity sourced is substantiated by PPAs.	PPAs, company metering systems. Check if PPAs with renewable electricity installations covering at least the amount of electricity counted as fully renewable are concluded and that these are valid for the period during which the respective amount of electricity is sourced.
Verify that the electricity is a) produced from eligible sources,	GoOs or similar, PPAs, Self-Declaration.

b) effectively produced in the installations stated in the PPAs.	
Verify if and when capacity has been added to the initial installation producing RFNBOs. Capacity that was added at the same site and not later than 36 months after the initial installation came into operation shall be counted as if it came into operation at the same time as the initial capacity.	Commissioning documents or operation permits for installation(s) producing RFNBOs.
For installations producing RFNBOs that came into operation on or after 01 January 2028 or for any RFNBO production after 01 January 2038: verify that renewable electricity installations have come into operation not earlier than 36 months before the installation producing RFNBOs.	Commissioning documents or operation permits for installation(s) generating electricity, PPAs, GOs or similar.
For installations producing RFNBOs that came into operation on or after 01 January 2028 or for any RFNBO production after 01 January 2038: verify that the renewable electricity installations under PPA(s) have not received support in the form of operating aid or investment aid, excluding support received by installations before the repowering and support that does not constitute net support, such as support that is fully repaid.	Verify that the renewable electricity installations under the PPAs have not received support in the form of operating aid or investment aid (e.g. via statement of competent authority), excluding support received by installations before a repowering (e.g. via document regarding the commissioning or operation permit after the repowering) which required an investment exceeding 30% of the investment that would be needed to build a similar new installation (e.g. via financial assessment report) and support that does not constitute net support, such as support that is fully repaid (e.g. via statement of competent authority).
GEOGRAPHICAL CORRELATION	
Verify if documents are provided that show the location of the installations producing renewable electricity under the PPAs.	PPAs.
Verify if the installation producing renewable electricity is located: a) in the same bidding zone as the installation producing RFNBOs, or b) in an interconnected onshore bidding zone c) in an offshore bidding zone interconnected to the installation producing RFNBOs.	GoOs or similar (e.g. EACs), PPAs, appropriate documentation of the location(s) of the renewable electricity generating installation(s) and the location of the installation producing RFNBOs.
Verify if electricity produced in those installations falling under b) is only	Transparent and region-specific source for electricity prices.

claimed as fully renewable during time periods for which the price for electricity on the day-ahead market is equal or higher in the pricing zone of the electricity producing installation.	
In the case the concept of bidding zone equivalent (outiside of the EU territories) is used, ensure that the proposed methodology is properly followed.	Electricity data from the relevant grid operator (establishment of an hourly price for electricity in the selected geographical area, physical characteristics of the network).
If additional criteria on geographical correlation are mandated from the EU Member State where the RFNBOs producer is located, those must be met accordingly.	Verify compliance with the national law.
TEMPORAL CORRELATION	
Until 31 December 2029: a) verify that RFNBO is produced during the same calendar month as the renewable electricity produced in own installations or in installations under renewable PPA(s). b) In case renewable electricity is drawn from a storage asset, verify that (1) the storage asset is located behind the same network connection point as the installation producing RFNBOs, (2) the storage asset has been charged during the same calendar month in which the electricity under the PPA has been produced.	On-site audit, site layout plans showing electrical connections, metering systems as well as location and connection points of storage asset, GOs or similar, plant production reports, transparent and understandable (online) smart metering tool, company internal documentation system.
From 1 January 2030: a) verify that RFNBO is produced during the same one-hour period as the renewable electricity produced in own installations or in installations under renewable PPA(s). b) In case renewable electricity is drawn from a storage asset, verify that (1) the storage asset is located behind the same network connection point as the installation producing RFNBOs, (2) the storage asset has been charged during the same one-hour period in which the electricity under the PPA has been produced.	On-site audit, site layout plans showing electrical connections, metering systems as well as location and connection points of storage asset, GOs or similar, plant production reports, transparent and understandable (online) smart metering tool, company internal documentation system.
If RFNBOs is produced during a one-hour period where the clearing price of electricity resulting from single day-ahead market coupling in the bidding zone is lower or equal to EUR 20 per	Reliable source of day ahead electricity prices in the bidding zone (e.g. ENTSO-E) and price of an allowance to emit one tonne of CO_2 equivalent.

MWh or lower than 0,36 times the price of an allowance to emit one tonne of CO_2 equivalent during the relevant period, temporal correlation is always met.	
Verify if the EU Member State where the RFNBOs production plant is located has implemented hourly correlation already after 1 July 2027.	Verify compliance with the national law.