Ammonia Europe

Certification Scheme

System Document

Version: 1.0

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History of Changes

Document Version	Date	Description of changes

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1 Introduction

The Ammonia Certification system document governs the Ammonia Europe Certification scheme for renewable and low-carbon ammonia, covering environmental attributes of ammonia: carbon footprint and energy origin.

The objective of the Ammonia Europe certification system is to allow ammonia consumers to be reliably informed about the environmental attributes, namely carbon footprint and origin, of the ammonia supplied.

The certification system allows to certify ammonia from the ammonia production site up to delivery to the consumer of ammonia for further processing. To that end, this certification system builds upon other relevant certification systems covering renewable electricity, hydrogen, natural gas, biomass, and potentially other inputs to produce the ammonia.

The Ammonia Europe Certification Scheme implements a hybrid chain of custody model which relies on Product Certificates for disclosing the attributes of ammonia supplied to a consumer, with implementation of Mass Balance in the supply chain, while allowing ammonia attributes to be alternatively assigned to consumption on a Book&Claim basis under certain conditions.

The way environmental attributes are assessed, documented, and communicated to consumers under the Ammonia Europe Certification Scheme is further defined by the following subsidiary Scheme Documents:

- The document “Ammonia Origin & Carbon Footprint Calculation” defines the rules and requirements regarding the calculation of the carbon footprint and determination of the origin of the ammonia;
- The document “Chain of Custody Requirements” describes the chain of custody requirements to be applied under the Ammonia Europe certification scheme. Chain of custody requirements are those pertaining to controlling and documenting the transfer of product sustainability attributes across the supply chain.

The certification scheme relies on certification of the participating economic operators, essential to ensure the trustworthiness of the claims made. Yearly audits by an accredited certification body provide assurance that the participating ammonia producers and suppliers follow the requirements of the certification system for claiming supply to a consumer of ammonia with specified environmental attributes.

The document “Governance” addresses how the scheme is governed, how it ensures and promotes transparency, the approach to risk management, the scheme’s conflict resolution principles and the procedures in the case of non-conformities and related sanctions.

2 Fundamental Principles

The Ammonia Europe Certification Scheme is based on the following fundamental principles:

Integrity

Ensuring that once all principles are implemented, double counting of ammonia product certificates is effectively avoided, and all stakeholders have the necessary trust to use the certification system.

Transparency

Participation in the ammonia certification system should be based on objective and publicly disclosed criteria to achieve fair and open access to the certification system.

Impartiality

All decisions and sustainability assessments are based on objective evidence and verified through an independent third-party verification process.

Accuracy

The calculation of the greenhouse gas emissions of ammonia is accurate, verifiable, and not misleading. Uncertainties in the calculation process and bias is avoided.

Harmonization

Enhancing the comparability and compatibility of global ammonia certification efforts, through adoption of internationally recognized methodologies and standards where possible and applicable.

Strict oversight

All participants to the certifications scheme as well as the scheme itself is subject to strict and transparent oversight to ensure their compliance with the system rules.

3 Scope

3.1 Sustainability Attributes

The product attributes of ammonia that are covered by the Ammonia Europe certification scheme are:

- **Carbon footprint** as defined by ISO 14067 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification.
- **Origin** based on the origin of the primary energy source from which the energy content of ammonia derives.

3.2 Geographic scope

The Ammonia Europe certification scheme covers ammonia supplied from any country, for consumption in the European Single Market (ESM), i.e. the European Economic Area (EEA) plus Switzerland.

3.3 Technologies and production pathways covered

The Ammonia Europe certification scheme covers at the moment the production of ammonia using hydrogen from water electrolysis, from steam reforming of biomethane, and from steam reforming of natural gas with carbon capture and storage (or usage).

Ultimately, any low-carbon or renewable ammonia production pathway will be covered.

3.4 Applications

The Ammonia Europe certification system is applicable to all applications of ammonia, namely production of fertilizers and use of ammonia as energy carrier or as fuel, or as raw material for other industrial applications.

4 Ammonia Europe Certification Scheme building blocks

The ammonia certification scheme is composed of several building blocks as shown in a simplified way in Figure *1* .

"Governance" defines how the system is controlled and operated, including how its participants are held to account. The governance of the Scheme is introduced in Chapter 7 of this document and further described in the Ammonia Europe Certification Scheme Document "Governance".

The methodology for quantifying the Carbon Footprint and defining ammonia Origin (together the "Product Attributes") is specified in the Ammonia Europe Certification Scheme Document "Ammonia Origin & Carbon Footprint Calculation".

"Chain of Custody" requirements are those pertaining to controlling and documenting the transfer of product sustainability attributes across the supply chain. These are defined in the Ammonia Europe Certification Scheme Document "Chain of Custody Requirements".

Conformity assessments by certification bodies ("Certification") providing assurance that the product attributes are correctly determined and communicated, is addressed in Section 6 and 7, addressing the requirements to be met both by certification bodies involved as well as the economic operators.

The certification scheme actors involved and their roles are defined in section 5 of this document.

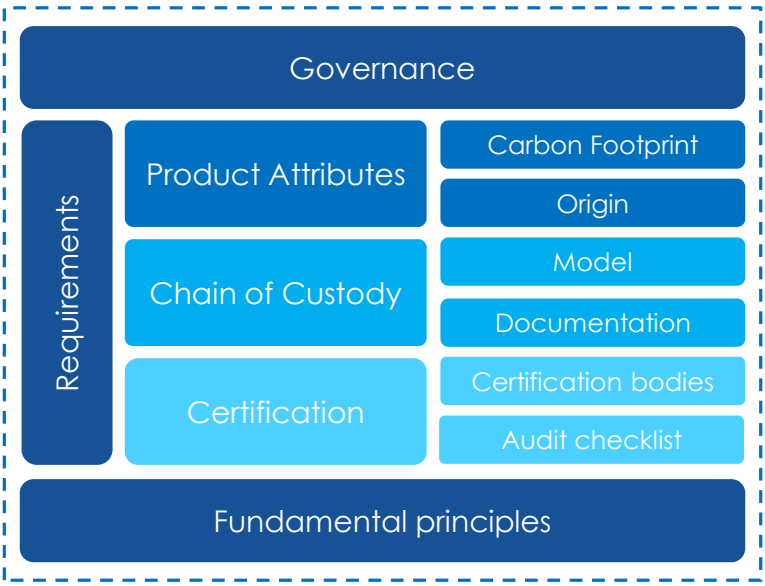

Figure 1: Simplified building blocks of a certification system.

5 Scheme actors and roles

The Ammonia Europe Certification Scheme involves various actors. These actors and their role are summarized in the table below and further illustrated in figure 2.

Table 1 Scheme actors and their role

Actor	Role
Scheme Owner and Operator	Responsible for governing, operating and maintaining the certification scheme
Accreditation Bodies	Responsible to assess and accredit the certification bodies (competence, impartiality and consistent operation)
Certification Bodies	Validates the audit report and advice from the auditor and gives a statement on its decision. Needs to be accredited by an accreditation body
Auditors	Assess the information received from the economic operator and reports whether it meets the scheme requirements. Auditors are part of an accredited Certification Body.
(Economic) operators	Referring to Operators physically handling the product in the supply chain. These include ammonia producers, suppliers, processors, transport and logistics. Every economic operator that 'handles' sustainable material is subject to certification and so is each involved spatial unit of an economic operator.
Consumer	The end-user to which the ammonia is supplied and that will further process it.

The certification scheme is governed by rules defined by the Certification System Document (this document) and its subsidiary documents.

The Scheme Owner & Operator operates the certification system under the oversight of the certification system's governance body, as defined by governance rule. Certification system operation involves:

- maintaining the certification system rules and contractual framework within which the certification bodies, and the economic operators interact amongst themselves and with the certification system operator
- selection and contracting of certification bodies operating under the certification system
- day-to-day certification system operation and oversight
- helpdesk for economic operators and certification bodies
- quality management
- communication with stakeholders
- addressing complaints and non-conformities in operation of the system
- organisation of events (e.g. trainings)

Under the Ammonia Europe certification scheme, each ammonia supplier participating in the scheme maintains its own certificate registry. Producers are responsible for the product certificates' lifecycle (issuing, transfer and retirement) in conjunction with the mass balance-based part of the chain of custody model implemented by each economic operator of the supply chain handling the product.

Certification bodies holding the required accreditations (from their national Accreditation body) are selected (and trained where necessary) by the certification scheme operator to become part of the pool of certification bodies that economic operators can contract for accessing to and maintaining certification under the certification scheme.

Economic operators are the companies along the supply chain relevant for certification. These include ammonia producers, suppliers, processors, transport and logistics. Every economic operator that 'handles' sustainable material is subject to certification by a certification body designated by the Scheme operator and so is each involved spatial unit[1] of an economic operator. This assures that environmental attributes are correctly assigned to the ammonia produced and that the specified Chain of Custody model allowing to assign those attributes to ammonia supplied to a given consumer, is correctly applied.

[1] The term 'spatial unit' refers to a specific site where sustainable material is handled. A spatial unit can be either a stationary or mobile container, a production site, a logistical facility, or a connected transmission infrastructure. A company may have more than one operating sites, and in this case every single unit must be subject to certification.

6 Requirements to be met by certification bodies

In order to be designated by the certification system, certification bodies should meet the following requirements:

- Accreditation by a national accreditation body to ISO 17065[2] and ISO 14065[3]
- Implementation of formal processes for selecting and appointing an audit team in accordance with the required skills

Furthermore, individual auditors must:

- have been trained to ISO 19011[4] and maintained their competence
- be free of conflicts of interest
- have 2 years of experience in LCA and quantification of GHG emissions
- have successfully completed the training for implementing the Ammonia Europe certification system, with a refresher at least every 4 years

[2] ISO 17065 Conformity assessment — Requirements for bodies certifying products, processes and services

[3] ISO 14065 General principles and requirements for bodies validating and verifying environmental information

[4] ISO 19011 Guidelines for auditing management systems

7 Certification of economic operators

Producers and other supply chain operators taking ownership ('custody') of ammonia with specified environmental attributes under this certification system must be certified by a designated certification body and renew their certification every 12 months by means of an audit.

The initial audit of a new participant must always be conducted on-site.

The Audit shall be prepared and performed by the audit team with the aim of providing a reasonable level of assurance that the supply chain operator complies with the relevant requirements of the certification system.

Audit preparation shall include an analysis of risks and a definition of a corresponding plan for gathering and verification of evidence for obtaining the required level of assurance.

Prior to the audit, the auditor shall obtain the following material for verification, as relevant for the type of supply chain operator:

- Amount of product with claimed sustainability attributes processed per month
- Mass balances, including start and end dates
- Contractual specification of inputs
- Product certificates issued/transferred/retired and company registry
- Product attribute declarations
- Calculation of carbon footprint intensity
- Indication of whether another certification system was also applied and corresponding documentation

The audit shall also check that the management system of the supply chain operator is appropriate, checking in particular that the latter:

- appoints and trains competent employees in charge of critical control points
- has contractual agreements ensuring compliance for all relevant outsourced tasks
- conducts internal audits
- has the necessary systems for continuous process traceability.

8 Scheme Governance

The Ammonia Europe Certification Scheme Document “Governance” describes the general principles according to which the Ammonia Europe Certification Scheme is governed. It describes the Scheme Governance Structure and Membership modalities, how the Scheme ensures and promotes Transparency, the approach to Risk Management, the Scheme’s Conflict Resolution principles and the applicable procedures in the case of Non-Conformities are identified and related Sanctions.