

Project Overview Document

Fertiberia - Low carbon fertilizers

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List of Definitions

For a full overview please refer to the Proba Standard. Definitions introduced or clarified for this project are listed below.

Term	Definition
Additionality	The principle that a GHG project must deliver emission reductions that would not have occurred in the absence of the project, beyond a business-as-usual scenario or existing regulatory requirements.
Baseline (scenario)	The hypothetical reference case, and related GHG emission sources, that best represents the conditions most likely to occur in the absence of the proposed GHG project. In this project: conventional grey CAN27 produced via fossil Haber-Bosch and sold into the selling region.
Book-and-claim	A chain-of-custody model in which the environmental attribute is decoupled from the physical product and tracked through documented commercial transactions and registry records, rather than through physical segregation of the product.
Chain of custody (CoC)	The documented model by which the physical flow of product and the associated emission reduction claim are tracked from origin to the final claiming entity. Models include mass balance, book-and-claim, and direct physical traceability.
Conservativeness	The use of conservative assumptions, values, and procedures to ensure that GHG emission reductions are not over-estimated.
Crediting period	The defined period during which a validated project is eligible to generate and issue inset units for the emissions it reduces. It may be renewed subject to full re-validation.
Dynamic baseline	A baseline emission factor that is set as a conservative default based on the best available knowledge at POD submission, and updated when verified buyer-specific or supply-chain-specific values become available and at each crediting-period renewal.
GOR (Guarantee of Origin)	An internal Fertiberia commercial and accounting instrument used to detach the green production attribute from the physical product. It is not a certification scheme and is not the inset unit issued under this project.
Inset unit	The certificate issued under this project. One inset unit represents one tonne of CO ₂ e reduced; inset units are issued, transferred, and retired on the Proba registry.
Insetting	The implementation of GHG reduction interventions within a company's own value chain, allowing a value chain partner to claim Scope 3 reductions on a supply-shed-aligned basis, as distinct from offsetting.
Leakage	The net increase in GHG emissions outside the project boundary that results directly from the project's activities.
PCF	Product Carbon Footprint. The sum of GHG emissions and removals in a product system, expressed as CO ₂ e on a cradle-to-gate basis (ISO 14067).

Term	Definition
Permanence	The assurance that the reductions achieved will remain effective and will not be reversed over time. For avoided-emission projects such as this one, reductions are one-time and not subject to reversal.
Sourcing region	The spatial-boundary term of PM.0002: a geographically distinct area characterised by common environmental, climatic, and land-use conditions, within which the intervention is quantified at an aggregated level (as distinct from the Land Management Unit level).
Supply shed	A geographically distinct sourcing area from which a buyer procures agricultural commodities, within which fertilizer sales and crop sourcing are aligned for book-and-claim inseting.
Uncertainty penalty	A fixed 5% deduction applied to the estimated reductions of sourcing-region projects (PM.0002 section 2.3), accounting for the higher uncertainty associated with aggregated data and the absence of field-level monitoring.

List of Abbreviations

Abbreviation	Definition
AR6	IPCC Sixth Assessment Report Global Warming Potential values (CO ₂ = 1; CH ₄ = 29.8; N ₂ O = 273)
CAN27	Calcium Ammonium Nitrate 27%
CBAM	Carbon Border Adjustment Mechanism
CoC	Chain of Custody
EF	Emission Factor
ERP	Enterprise Resource Planning (system)
ETS	(EU) Emissions Trading System
GHG	Greenhouse Gas
GOR	Guarantee of Origin (internal Fertiberia instrument)
ISO	International Organization for Standardization
LP	Leakage Penalty
MRV	Monitoring, Reporting, and Verification
N	Nitrogen
PCF	Product Carbon Footprint
PM.0002	Proba methodology: Adoption of low-emission fertilizer strategies to transition to low-carbon agriculture, v1.0
POD	Project Overview Document
SBTi	Science Based Targets initiative
SDG	Sustainable Development Goal
SSR	GHG Sources, Sinks, and Reservoirs
UP	Uncertainty Penalty
VVB	Validation and Verification Body

1. Project Description

1.1 Summary of the Project

Fertiberia is a European leader in sustainable fertilization, pioneering the transition to low-carbon fertilizer production through investments in green hydrogen and low-carbon ammonia, which form the basis of its Impact Zero product line. This project quantifies the climate benefit of that transition under Proba methodology PM.0002 v1.0.

The project is the production and sale of low-carbon Calcium Ammonium Nitrate 27% (CAN27) into European Union selling regions, quantified at the sourcing-region level under PM.0002, displacing conventional grey CAN27. The reduction is the difference between the regional baseline PCF for grey CAN27 and the verified project PCF of Fertiberia's low-carbon CAN27, applied to the nitrogen deployed in the selling region. The initial focus is France; the POD is written generically for EU member-state selling regions so that expansion into further EU regions does not require re-validation. France is therefore an example selling region rather than the defining one; the actual selling region of each period is evidenced in the periodic monitoring reports.

Fertiberia's collaboration with a leading European agri-food buyer targets, as a shared ambition enabled by this POD, on the order of 150,000 t of low-carbon fertilizer over the coming years, supporting approximately 400,000 acres of European farmland. These are forward-looking ambition figures for the collaboration; they are not monitored data and are not tied to any period or transaction.

Actual sold volumes and verified reductions for any period are reported exclusively in the periodic monitoring reports verified by the Validation and Verification Body (VVB). Guidance on how value chain partners allocate and claim the verified reductions is set out in the Emission Reduction Allocation and Claiming Guidelines. This document sets out the method, boundaries, emission factors, parameters, and ex-ante expectations only.

Parameter	Value
Methodology developer	Proba World BV
Methodology ID	PM.0002 v1.0
Methodology title	Adoption of low-emission fertilizer strategies to transition to low-carbon agriculture
Approved by Proba?	Yes, developed by Proba

1.2 Project Objectives

The project pursues the following objectives:

- Enable the replacement of conventional fertilizers with low-emission fertilizers produced and distributed by Fertiberia in specific EU selling regions.

- Mobilise investment from downstream value chain partners to overcome the economic and supply constraints that limit the uptake of low-carbon fertilizer solutions.
- Generate real, measurable, and additional GHG emission reductions within Scope 3 supply chains.
- Facilitate credible inseting claims through book-and-claim chain-of-custody models where physical segregation is not practically feasible, while ensuring operational alignment, traceability, and rigorous avoidance of double counting.
- Support the scaling of low-carbon agricultural inputs as a pathway to long-term, structural emission reductions in agri-food systems.
- Maintain compliance with current and upcoming versions of the GHG Protocol and SBTi guidance.
- Support less stringent chain-of-custody models, in particular book-and-claim, where full physical traceability is not yet feasible.

1.3 Project Timelines

Project start date: 1 January 2026, marking the beginning of data collection and the first intervention implementation.

Crediting period: 7 years, the maximum permitted under PM.0002 section 1.5, renewable through full re-validation. Each renewal requires reassessment of additionality and baseline and compliance with the then-current version of PM.0002. The project itself can run considerably longer than the initial crediting period through successive renewals.

Monitoring and verification: annual as the default, but flexible depending on actual volumes sold. More frequent verification events are possible if needed. If no impact is generated in a given year, that year's verification can be skipped or merged with another year.

Baseline review: the baseline emission factors related to the Product Carbon Footprint of the fertilizers being displaced is static, based on one source. In case there are significant (regulatory) changes during the crediting period, which shift the baseline significantly, then the baseline must get updated to reflect that (see section 6. Monitoring, Reporting and Verification).

Milestone	Start	End	Notes
POD validation	August 2026	September 2026	Pending the validation report
First monitoring period	01.01.2026	30.06.2026	Reported in the Monitoring Report 2026
Annual monitoring and verification cycle	From 2027	Through the crediting period	Annual minimum, with the flexibility rules above

1.4 Project Stakeholders and Roles

Role	Organisation	Responsibilities
Project Developer and Producer	Fertiberia S.A. (VAT number ES-A28165298), a public limited company incorporated in Spain and registered in the Mercantile Registry of Madrid. Registered office: Calle Agustín de Foxá 27, Planta 11, 28036 Madrid, Spain. Main corporate website: www.fertiberia.com .	Dual role as project developer and producer of the low-emission fertilizer. Responsible for MRV data compilation, PCF documentation, internal double-counting prevention, and POD maintenance.
Inset buyers	Value chain partners (generic; confirmed per transfer on the Proba registry)	Value chain partners sourcing agricultural commodities from the supply sheds into which the low-carbon fertilizer is sold. Confirmed per transfer on the Proba registry. Claim emission reductions within their own value chain (insetting).
Validation and Verification Body (VVB)	DNV https://www.dnv.com/	Conducts independent validation of this POD and verification of production and sales data and related GHG reductions in accordance with PM.0002 and the Proba Standard. DNV also issued the project PCF verification underlying this POD.
Scheme and Methodology Developer	Proba World BV, Laan van Kronenburg 14, 1183 AS Amstelveen, The Netherlands	Provides the methodological framework (PM.0002) and certification infrastructure. Oversees inset-unit issuance and registration in the Proba registry. Ensures compliance with environmental and social safeguards.

About Fertiberia

Fertiberia is a European leader in sustainable fertilization and chemical solutions, dedicated to designing, producing, and delivering high-value, efficient, and environmentally responsible products for agriculture and industry. Fertiberia is pioneering the transition to low-carbon fertilizer production through the development of green hydrogen and low-carbon ammonia technologies, which form the basis of its Impact Zero product line and its broader decarbonisation strategy.

1.5 Applicability of the Methodology

The methodology PM.0002 (Adoption of low-emission fertilizer strategies to transition to low-carbon agriculture, Proba World BV) is applicable to this project. PM.0002 section 1.2 defines the applicability criteria; this project maps to them as follows:

- **Intervention type:** the project applies intervention type (a), fertilizer production emissions reduction, introducing a fertilizer with a lower Product Carbon Footprint (PCF)

as a replacement for a conventional fertilizer of the same nutrient content. Evidence of the PCF for both the baseline and the project product is provided (section 3.2).

- **Spatial level:** the project operates at the sourcing-region level (PM.0002 section 2.3), using aggregated regional data rather than field-level Land Management Unit data. Specifically the regional boundary is country-level. In the first monitoring period the country in scope is France, which is proven through invoices from the production factory to the local distributor ¹.
- **Crediting pathway:** the inseting pathway of PM.0002 is applied exclusively. Verified reductions are claimed within the value chain by value chain partners aligned to the supply shed.
- **Product unchanged:** the intervention changes only the production pathway. The nitrogen content, chemical form, and application of CAN27 are unchanged, and no field-level claims are made.

Intervention types not used. The project does not apply intervention type (b), fertilizer in-field emissions reduction, in either its EF-related or its nutrient-rate-related form. Field-level nitrogen dynamics are outside scope. The nutrient-rate-related sub-type is in any case not available at the sourcing-region level under PM.0002. The project is not combined with any other methodology or programme.

1.6 Eligibility

The eligible-products requirements of PM.0002 section 1.3 are satisfied:

- **Fertilizer type:** CAN27 is an inorganic, solid nitrogen fertilizer, an eligible product type under PM.0002 section 1.3.1.
- **Regulatory compliance of the product:** the low-carbon CAN27 is a registered fertilizer product in the country of application, evidenced by the product registration and technical documentation supplied through the MRV process.
- **Functional equivalence:** the low-carbon CAN27 has identical nitrogen content, chemical form, and agronomic performance to the conventional product it replaces. Because nutrient performance is identical, there is no yield effect and no performance test is triggered.

As context for eligibility, the verified project PCF represents a reduction of approximately 83% against the default baseline per tonne of nitrogen (from 3.1 tCO₂e/t N to 0.54 tCO₂e/t N).

¹ For the first monitoring period, that would be *Fertiberia Spain* selling the fertilizers to *Fertiberia France*, which afterwards sells the products downstream to other distributors in France.

2. Project Scope and Boundaries

2.1 Geographical Boundaries

Production: Fertiberia's finishing plant at Sagunto, Spain, using green ammonia originating from Fertiberia's Puertollano facility.

Selling regions: EU member states, with an initial focus on France as an example region. During verification, the actual selling regions of the period are confirmed from the period's invoice listings.

Because the default baseline is an EU-wide conservative lower bound, the precise selling location within the EU is not critical to the impact calculation. It is critical to the allocation of the benefit to supply-chain partners, which is governed by the supply-shed alignment rules (section 2.5) and by the Emission Reduction Allocation and Claiming Guidelines ².

2.2 Operational Boundaries

The operational boundaries operate at two levels:

- **Production level:** the cradle-to-gate PCF of CAN27 produced by Fertiberia. The low-carbon PCF reflects the use of low-carbon ammonia in place of fossil-derived ammonia.
- **Selling-region level:** the sale of low-carbon CAN27 into an EU selling region, where it displaces conventional grey CAN27 and reduces the embedded GHG emissions of the nitrogen applied in that region.

Products in scope:

Product	Commercial name (per PCF verifier)	Project PCF	Status
CAN27 (Calcium Ammonium Nitrate 27%, Mg 3%)	IMPACT ZERO NITRATE D'AMMONIUM CALCIQUE 27 (3)	0.145 kgCO ₂ e/kg-product	Third-party verified (DNV, June 2026 vintage, Impact Zero product)

The project PCF stated here is the validation-time value. It is re-evidenced once it is no longer valid or if another fertilizer product becomes in scope. Each period, Fertiberia confirms whether its production process has changed relative to the PCF vintage; if it has, an updated verified PCF is required before further issuance.

² A separate document not subject to validation.

2.3 Crediting Framework

The project applies the insetting pathway of PM.0002 exclusively. Inset units are issued post-verification on the Proba blockchain-based registry, where each unit carries a unique identifier, full transfer history, and retirement records. One inset unit represents one tonne of CO₂e reduced.

Double counting is prevented through two layers.

Layer 1, Proba registry controls. Each inset unit is issued once and retired upon claiming. The project is not registered under any other scheme, and Fertiberia does not reclaim the credited reduction in its own GHG inventory.

Layer 2, Volume reconciliation. The quantity of inset units issued must correspond to the volume of green fertilizer sold as conventional product within the supply shed. The inset units (e.g. the green attribute) can be either attached or detached from the physical products. This is demonstrated through the green ammonia consumed, the stoichiometric green ammonia required for the fertilizer volume, and the fertilizer sales invoices, all monitored per period in the monitoring report and calculation workbook. Fertiberia operates an internal accounting approach, the Guarantee of Origin (GOR) bonus and malus mechanism. The evidence is supplied with each monitoring report (see the requirement “1. Internal Fertiberia low carbon production reconciliation” in section 6. *Monitoring, Reporting and Verification*).

- In case the inset unit is detached from the physical product, the mechanism ensures that no downstream buyer of the physical product can claim a lower PCF.
- In case the inset unit is attached for (part of) the volume of fertilizer sold by Fertiberia, then this should also be reconciled against the total volume of green ammonia produced, and must be traceable through the supplied documentation.

The claiming of reductions at crop, product, or value-chain level falls outside this POD. Responsibility for credible, accurate, and non-misleading claims rests with the claiming company; detailed guidance is provided in the Emission Reduction Allocation and Claiming Guidelines.

2.4 Project Additionality

For insetting projects, PM.0002 section 1.4 requires a positive demonstration of regulatory additionality together with a transparent disclosure of prevalence and financial additionality. The quantitative investment analysis required for offsetting projects does not apply. This section incorporates the full additionality assessment; the former standalone assessment template is discontinued.

2.4.1 Regulatory Additionality

The adoption of low-PCF nitrogen fertilizers produced with green hydrogen or low-carbon ammonia is not mandated by any existing EU, French, or Spanish instrument. The European

Green Deal, the EU Climate Law, the Farm to Fork Strategy, and the Carbon Border Adjustment Mechanism signal increasing climate ambition, but none prescribes the production pathway or the PCF level of specific fertilizer products, and none mandates the switch from grey to green ammonia for fertilizers sold within the EU. The EU Emissions Trading System does not mandate the intervention; its financial effect is addressed under section 2.4.3. All project interventions therefore exceed current legal requirements and are entirely voluntary. The project reviews the regulatory landscape annually; additionality ends at any point at which a regulation mandates the intervention, and is formally reassessed at each crediting-period renewal.

2.4.2 Prevalence Additionality

Low-carbon, green-ammonia-based nitrogen fertilizers are not common practice in the European or French fertilizer market, and their market share is below the 25% common-practice threshold by a wide margin. The IEA Global Hydrogen Review 2025 reports that low-emissions hydrogen accounted for under 1% of total global hydrogen supply, with ammonia synthesis the dominant intended end-use of the low-emissions hydrogen pipeline and only a small fraction of announced projects at final investment decision. Because green ammonia depends entirely on low-emissions hydrogen, green-ammonia-based fertilizer cannot exceed roughly 1% of the market. The Mordor Intelligence Europe Fertilizers Market 2025 analysis values the European market at approximately USD 28.8 billion, with conventional formulations holding approximately 81% share and green-ammonia investment remaining early-stage and geographically concentrated outside France. No France-specific quantified adoption rate is publicly available; the below-threshold conclusion is a robust inference from the structural dependence of green-ammonia fertilizer on a sub-1% low-emissions hydrogen supply. The intervention increases the uptake of low-carbon fertilizer within the project's spatial boundaries.

2.4.3 Financial Additionality

Green ammonia and low-PCF fertilizers are significantly more expensive than their conventional equivalents, owing to the higher cost of green-hydrogen production, the capital expenditure required for low-carbon ammonia synthesis, and the additional certification and tracking overhead. The EU Emissions Trading System is not sufficient to make green-ammonia fertilizers an affordable alternative to conventional fertilizers. Without carbon finance, the supply and sale of the product at current volumes would not be commercially viable. Carbon finance therefore positively affects the adoption of low-carbon fertilizer within the supply sheds in scope.

Fertiberia confirms that any public incentives applicable to the low-carbon ammonia value chain do not fully close the economic gap between conventional and low-carbon fertilizer production. Carbon finance therefore remains a necessary enabling factor for project implementation.

The underlying financial detail may be provided to the VVB and Proba on a restricted, confidential basis and is not published. Fertiberia declares that the information in this section is

accurate and that the project would not have occurred without the enabling role of carbon finance. Additionality is reassessed at each crediting-period renewal.

2.5 Value Chain, Chain of Custody, and Traceability

(i) Value chain scope, tier by tier. Fertiberia production at Sagunto, using green ammonia from Puertollano (see the plant-chain flag in section 2.1); intra-group distribution via the national Fertiberia entity in the selling region; onward sale through distributors and cooperatives to farmers within the supply shed; and downstream agri-food buyers sourcing crops from the same supply shed.

(ii) Chain-of-custody model. Book-and-claim. Physical segregation of the low-carbon product through the distribution chain is not practically possible. PM.0002 permits indirect traceability for sourcing-region projects. Supply-shed alignment, whereby the fertilizer is sold into the same region from which the buyer sources crops, provides the operational alignment required for a credible insetting claim. In this case, region refers to the country-level.

(iii) Traceability mechanism. ERP sales records and per-period selling-location invoice listings, together with the Proba registry, which records a unique identifier and full transfer history for each inset unit. Proba requires a declaration of causality during transfer of the certificate and a proof of sourcing during claiming of the certificate.

(iv) No double allocation. A tonne of low-carbon product supports at most one certificate-backed claim. The internal detachment mechanism (section 2.3) ensures that the physical product carries no parallel low-carbon attribute.

The smallest identifiable project unit is the verified sale volume within the selling region for each monitoring period, bound by the documentary evidence for that period. There are no Land Management Units in this project; monitoring is at the level of Fertiberia's sales records and the resulting fertilizer volumes placed in the selling region.

3. Quantification Approach

3.1 Interventions in Scope

The project comprises a single intervention applying methodology PM.0002 v1.0:

Intervention	Product	Project PCF	Methodology
Switch from conventional grey CAN27 to low-carbon CAN27 in EU selling regions	CAN27 (Calcium Ammonium Nitrate 27%, Magnesium 3%)	0.54 tCO ₂ e/t N, third-party verified	PM.0002 v1.0 (Proba World BV)

No volumes are stated here; period volumes are established in the monitoring reports.

3.2 Quantification of Emission Reductions

3.2.1 Baseline Scenario

The baseline scenario is conventional grey CAN27 produced via the fossil-fuel Haber-Bosch process in the selling region.

Baseline PCF selection. The baseline PCF is set at 3.1 tCO₂e/t N, which is below the conservative lower bound of the EU range of 3.3 tCO₂e/t N established in the Fertilizers Europe Carbon Footprint Calculator (Hoxha and Christensen 2018, IFS Proceedings 805, audited by DNV GL). The EU average is approximately 3.44 tCO₂e/t N.

Market analysis of substitutable products. The relevant EU-average PCFs for substitutable nitrogen fertilizers are shown below (kg CO₂e/kg N):

Product	Excluding captured CO ₂	Including captured CO ₂
Ammonium Nitrate (AN 33.5)	3.319	3.319
Calcium Ammonium Nitrate (CAN 27)	3.523	3.523
Urea (46)	1.909	3.502
Urea Ammonium Nitrate (UAN 30)	2.605	3.402

When captured CO₂ released on field application is included, the values cluster in a narrow band of approximately 3.3 to 3.5 kg CO₂e/kg N. CAN27 is justified as the single representative counterfactual for the EU-generic framing (France as example region) on the following basis: all significant CAN27 suppliers to EU selling regions are EU-based producers operating under the EU ETS, with nitrous oxide abatement installed to meet ETS benchmarks, so the EU-average reference value is representative of the consumption mix; the conservative lower bound of 3.1 tCO₂e/t N sits below both the CAN27-specific value of 3.523 and the narrowed range of competing products, so a market-weighted composite would yield a higher baseline and more inset units, not fewer; and CAN27 is the dominant nitrogen fertilizer product in the arable crops on which Fertiberia's product is primarily applied.

Conservativeness of the baseline selection:

- Selecting the lower bound reduces the (baseline minus project) differential, which reduces the credited reduction and the number of inset units issued.
- EU suppliers to the selling regions operate under the EU ETS and have substantially abated nitrous oxide emissions; the lower-bound assumption captures the best-performing representation of these suppliers.
- European fertilizer production has continued to decarbonise since the data vintage of the reference calculator; newer authoritative studies will be actively sought and adopted where available.

GWP basis. The project applies AR6 Global Warming Potential values throughout ($\text{CO}_2 = 1$, $\text{CH}_4 = 29.8$, $\text{N}_2\text{O} = 273$). The reference study underlying the baseline predates AR6 and uses earlier GWP sets for some inputs; because the selected 3.1 value sits well below the EU average and below the range, it remains conservative under AR6, and the 5% uncertainty penalty provides an additional buffer of conservativeness.

Dynamic baseline. The 3.1 tCO₂e/t N value is a default based on the best available knowledge at POD submission. When verified supply-chain-specific baseline factors become available, they are used instead. This concept is developed further in the Emission Reduction Allocation and Claiming Guidelines.

3.2.2 GHG Sources, Sinks, and Reservoirs

GHG equivalencies are computed using AR6 values ($\text{CO}_2 = 1$, $\text{CH}_4 = 29.8$, $\text{N}_2\text{O} = 273$).

SSR	Description	Treatment
SSR-1	Fertilizer production (CO_2 , CH_4): cradle-to-gate emissions of CAN27 production. In the baseline, ammonia is synthesised from natural gas via conventional Haber-Bosch; in the project, ammonia is produced using renewable energy.	In scope, credited
SSR-2	Soil nitrogen transformation (N_2O): direct and indirect field emissions from nitrogen application. These occur in both scenarios and are unchanged by the intervention, since nitrogen content, chemical form, and application rate are unchanged.	Out of scope, excluded, no credit

The intervention creates no carbon sinks; soil organic carbon and biomass pools are contextual only and are not credited. Actual annual results are not presented in this POD; they are established per period in the monitoring reports.

3.2.3 Calculation Approach

Governing equation, PM.0002 section 5, Equation (10):

$$\text{ER} = (\text{EF}_b - \text{EF}_p) \times V \times N \times (1 - \text{LP}) \times (1 - \text{UP})$$

Variables and locked values:

Variable	Definition	Value
ER	Net emission reduction for the period (tCO ₂ e)	Calculated
EFb	Baseline PCF (grey CAN27, conservative lower bound)	3.1 tCO ₂ e/t N
EFp	Project PCF (Fertiberia low-carbon CAN27), third-party verified	0.54 tCO ₂ e/t N
V	Volume of low-carbon CAN27 sold into the selling region	Verified period volume (monitoring report)
N	Nitrogen content fraction	27%
LP	Leakage penalty (Scenario C, PM.0002 Table 1)	5%
UP	Sourcing-region uncertainty penalty (PM.0002 section 2.3, Table 3)	5%

No buffer pool contribution applies to this project, in accordance with the updated Proba Standard (Version 1.5).

Volume reconciliation (method form). The stoichiometric green ammonia required for a fertilizer volume V is: green NH₃ required = $V \times N / 0.824$. The green ammonia consumed and the associated loss are monitored per period and reconciled against the fertilizer sales in the monitoring report and calculation workbook.

Conservativeness decisions applied in the calculation:

- Lower-bound baseline (3.1 tCO₂e/t N) selected in preference to the EU average or the upper bound of the range.
- Scenario C leakage (5%) selected in preference to Scenario B (1%), because the fate of displaced grey CAN27 cannot currently be confirmed.
- Transport benefits from production to the selling region are not claimed.
- SSR-2 (field nitrous oxide) is excluded from scope.

Uncertainty assessment (PM.0002 section 4.3). The project PCF is derived from third-party verified PCF data (Approach 3, PCF or LCA data). The baseline is taken from an audited reference dataset. As a sourcing-region project, the mandatory 5% uncertainty penalty applies.

4. Leakage and Permanence

4.1 Leakage

Market leakage is assessed per PM.0002 section 1.8.1 and Table 1. There is a risk that displaced grey CAN27 volumes are redistributed and used by non-project actors outside the project boundary.

Table 1: Market leakage

Project scale	Scenario	Traceability of the displacement	Deduction
Below 1,000 ha	A	Leakage risk is considered negligible	0%
1,000 to 10,000 ha	B	Project shows displaced fertilizer was not used outside the project (supplier confirmation, farm data, or market data)	1%
1,000 to 10,000 ha	C (selected)	Fate of displaced fertilizer unknown or unconfirmed (no evidence)	5%
Above 10,000 ha	D	Project shows displaced fertilizer was not used outside the project	2%
Above 10,000 ha	E	Displaced fertilizer may have been used outside the project (uncertain or evidence of redirection)	10%

Scale determination (indicative). Using an illustrative representative annual volume of 1,500 t CAN27 (405 t N), the hectare-equivalent coverage via ARVALIS reference nitrogen rates is approximately 2,315 ha for winter wheat (175 kg N/ha) and approximately 2,024 ha for ware potato (200 kg N/ha)³. This places the project in the 1,000 to 10,000 ha band. This volume is used here only to derive the hectare-equivalent scale and is not tied to any transaction, invoice, or period.

Scenario C (5%) is selected because the fate of the displaced grey CAN27 cannot currently be confirmed. Retroactive release is not permitted under this project. The scenario is reassessed at each verification.

4.2 Permanence

The intervention delivers avoided emissions, not stored carbon. The reductions occur once at the point of fertilizer production, through the use of green ammonia in place of grey ammonia. As set out in PM.0002 section 1.8.2, because these are one-time avoided emissions rather than sequestration, there is no risk of reversal and no permanence risk to manage.

³ ARVALIS recommends a total nitrogen dose in the range of 160 to 200 kg N/ha for winter wheat depending on yield target and soil nitrogen balance, with a regional mid-point of 175 kg N/ha. These figures are used for scale determination only and are not a project-level agronomic prescription. Source: ARVALIS-Institut du végétal, Fertilisation azotée du ble tendre d'hiver, annual series, www.arvalis.fr.

5. Estimated GHG Impact (ex-ante)

Actual sold volumes and verified reductions are established exclusively in the annual monitoring and verification cycle and are not presented here. This section sets out the per-unit reduction factors the intervention generates and an indicative projection dependent on realized volumes.

Factor	Per t N	Per t CAN27
Gross reduction	2.6 tCO ₂ e	0.7 tCO ₂ e
Claimable reduction (after leakage and uncertainty penalties)	2.3 tCO ₂ e	0.6 tCO ₂ e

Indicative projection. At an illustrative representative annual volume of 1,500 t CAN27, the indicative gross reduction is approximately 1,038 tCO₂e and the indicative claimable reduction is approximately 937 tCO₂e per year. These figures depend on realized volumes, and are not verified reductions. This projection illustrates the scale of the ambition described in section 1.1. Actual results are established exclusively in the annual monitoring and verification cycle.

6. Monitoring, Reporting, and Verification (MRV)

6.1 MRV Framework

The responsible entity is Fertiberia. Verification is conducted with the rules set out in section 1.3. Monitoring parameters are presented in the standardised format below.

Table 2: Documentation to be submitted

	Documentation	Purpose	Source	Frequency
1	Internal Fertiberia low carbon production reconciliation	Volume reconciliation between green and grey ammonia to avoid double claiming. Also includes reconciliation between attached and detached inset units (in such setup is applicable for that monitoring period).	Fertiberia's system-generated primary records	Per period
2	Project PCF of fertilizers	Accurately quantify the project PCF, which defines the project scenario.	Verified PCF report	Per period
3	Proof of fertilizer selling locations	Prove that the produced fertilizer is sold and delivered within a specific selling region. Optionally, it is possible to supply further downstream selling locations to increase the granularity of the baseline region (in case such traceability is feasible)	Invoice listings	Per period

Table 3: Declarations from Fertiberia

	Declaration	Implication	Frequency
A	Declare whether there was a production process change	A change to the production process triggers PCF re-verification before further issuance	Per period
B	Declare whether a relevant regulatory change took place.	PM.0002 section 1.4 requires that such a declaration is submitted to make sure the project is still eligible and the baseline is still representative.	Per period
C	Declare that there is no double counting or double claiming of the low-carbon attributes by downstream buyers. Where the inset unit (the "green attribute") is detached from a specific fertilizer volume, Fertiberia communicates that volume to downstream buyers as "grey" fertilizer, and no further attribute, certificate, or guarantee of origin is issued against it.	Supports double-counting avoidance together with the submitted supporting documentation.	Per period

6.2 Monitoring Report

Before each verification, Fertiberia prepares and submits a monitoring report mirroring the Monitoring Report structure: the period data, the monitoring parameters, the results waterfall, the certified per-unit factors, the declarations, and the evidence inventory. The calculation workbook is the structured data file accompanying the monitoring report and is the authoritative source for the period figures.

6.3 Managing Data Quality

Data quality is managed through a four-eyes review of all compiled data before submission; ERP-level traceability for each period and selling region; reconciliation of ERP volumes against the invoice listings, with flagged discrepancies independently reviewed before finalisation; and document retention of all supporting evidence for a minimum of 10 years, accessible to the auditor and to the parties buying the certificates.

7. Certificate Issuance, Attribution, and Claiming

Inset units are issued post-verification on the Proba blockchain-based registry. Units are issued to Fertiberia and transferred and retired against buyers via the Proba platform. Each unit carries a unique identifier, full transfer history, and retirement records.

Attribution requires supply-shed alignment, together with the declaration of causality at transfer and the proof of sourcing at claiming described in section 2.5.

The internal detachment mechanism (section 2.3) prevents double claiming. Commercial arrangements between Fertiberia and certificate buyers are recorded on the Proba platform and fall outside this POD and the monitoring reports.

Guidance on how buyers allocate and claim the verified reductions in their own GHG accounting is set out in the standalone Emission Reduction Allocation and Claiming Guidelines. That document is non-normative; final claiming responsibility rests with the buyer and its auditors.

8. Social and Environmental Safeguards

8.1 Do No Harm Assessment

The project complies with the Do No Harm principle required under the Proba Standard. Fertiberia has completed a review using the Proba Sustainable Development Benefits and Safeguards framework. The completed safeguard assessment is included in the Appendix.

8.2 SDG Contributions (Co-Benefits)

SDG	Contribution
SDG 2, Zero Hunger	Low-carbon CAN27 maintains agronomic performance equivalent to conventional CAN27, so crop yields are not reduced by the substitution and sustainable food production is maintained while the carbon footprint of inputs is reduced.
SDG 9, Industry, Innovation and Infrastructure	The project supports the scaling of green hydrogen and low-carbon ammonia production technologies, stimulating decarbonisation innovation in the fertilizer sector.
SDG 12, Responsible Consumption and Production	By substituting high-carbon fertilizer inputs with low-carbon alternatives within an agricultural value chain, the project promotes responsible production patterns and greater resource efficiency.
SDG 13, Climate Action	The core purpose of the project is to reduce GHG emissions in agri-food supply chains; verified inset units directly represent measurable climate action.

9. Stakeholder Engagement

9.1 Stakeholders

- Downstream agri-food buyers (generic), sourcing crops from the supply sheds into which the low-carbon fertilizer is sold.
- National Fertiberia distribution entities, distributors, and cooperatives in the selling regions.
- Farmers in the supply sheds, who receive a product agronomically equivalent to conventional CAN27.
- Regulators, including French and Spanish agricultural authorities and EU ETS bodies.
- Proba World BV, the scheme and methodology developer.
- The VVB, conducting validation and verification.

9.2 Stakeholder Consultation Method

- Bilateral communication with certificate buyers on double-counting safeguards and attribution (generic).
- Communication with the national distribution entities on invoice-listing and chain-of-custody documentation.
- Public consultation on this POD via the Proba Registry.
- Communication toward farmer cooperatives that the physical product carries no low-carbon claim.

9.3 Summary of Feedback

FLAG FOR REVIEW: to be completed after the public consultation process.

9.4 Impact on Project

FLAG FOR REVIEW: to be completed after the public consultation process.

9.5 Ongoing Stakeholder Engagement

- Annual publication of the verified monitoring reports on the Proba Registry.
- Ongoing engagement with buyers on claim documentation.
- Grievance mechanism. A grievance mechanism will be established.

10. Risk Assessment

10.1 Identified Risks and Mitigation Measures

Risk	Likelihood	Severity	Mitigation
Double counting or double claiming	Low to Medium	High	Internal detachment mechanism; registry single-retirement; prohibition on dual registration.
Baseline overestimation	Medium	Medium	Conservative lower-bound baseline; 5% uncertainty penalty; dynamic updates; active search for newer studies.
Project PCF change	Low to Medium	Medium	Production-process changes would alter the PCF; mitigated by the per-period process-change confirmation and the PCF re-verification requirement.
Evidence gaps	Medium	Medium	ERP allocation proof and green ammonia documentation outstanding; itemised as flags in this POD; required before verification is complete.
Market leakage (Scenario C)	Low to Medium	Low to Medium	Conservative 5% deduction applied; possible move to Scenario B after 4 years with accepted evidence.
Regulatory change	Low	Low	Annual review of the regulatory landscape; crediting ends if the intervention becomes mandated.

Appendix: Proba Sustainable Development Criteria

Criteria	Risk relevant (Y/N)	Response
1. Assessment and management of environmental and social risks	Yes	The project has been assessed against the Proba Sustainable Development Benefits and Safeguards framework. The intervention changes only the upstream production pathway; the physical product, its nitrogen content, chemical form, and field application are unchanged, so field-level conditions are not altered relative to the conventional baseline. Production-stage aspects are managed at Fertiberia's EU facilities under Spanish and EU environmental regulation and the EU ETS.
2. Labour rights and working conditions	No	Production occurs at Fertiberia's own industrial facilities in Spain, where workers are covered by Spanish and EU labour law. End-use application is by independent farmers under EU and national labour law. Risk negligible.
3. Resource efficiency and pollution prevention	Yes	Substituting green hydrogen and low-carbon ammonia for fossil-derived ammonia reduces cradle-to-gate CO ₂ and CH ₄ from production and reduces fossil feedstock use. Because nitrogen content and chemical form are unchanged, field-level nitrate leaching and ammonia volatilisation are unaffected relative to baseline. Net positive co-benefit.
4. Land acquisition and involuntary resettlement	No	No land acquisition, resettlement, or restriction of use. As a sourcing-region book-and-claim project there is no project-controlled land. Not relevant.
5. Biodiversity conservation and sustainable management	No	No land-use change or ecosystem conversion. The low-carbon CAN27 is chemically identical to conventional CAN27 and applied at unchanged rates, so no incremental biodiversity effect arises. Not relevant.
6. Indigenous Peoples, local communities, and cultural heritage	No	Production occurs at established industrial facilities in Spain and sale and application in EU selling regions; no Indigenous Peoples, vulnerable communities, or cultural-heritage sites are affected. Not relevant.
7. Respect for human rights and stakeholder engagement	Yes	The project respects applicable human-rights standards in its EU operating context. Stakeholder engagement is undertaken and documented in Section 9. Public consultation runs via the Proba Registry and a grievance mechanism will be established before the first verification event.

Criteria	Risk relevant (Y/N)	Response
8. Gender equality	No	Project activities have no gender-differentiated impacts; employment at Fertiberia's facilities is subject to Spanish and EU equality legislation. Not relevant.
9. Robust benefit-sharing	Yes	Benefits are shared across the value chain through the insetting co-financing model: value chain partners co-finance the additional cost of low-carbon production through their purchase of certificates, while the downstream reduction is attributed to their supply-shed sourcing. End-farmers receive a product agronomically equivalent to conventional CAN27 with no required change in practice. Transparent chain communication is maintained to prevent double claiming.
10. Ensuring positive SDG impacts	Yes	The project contributes to SDG 2, SDG 9, SDG 12, and SDG 13, as detailed in Section 8.2.

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- World Resources Institute and World Business Council for Sustainable Development. (2011). Corporate Value Chain (Scope 3) Accounting and Reporting Standard. <https://ghgprotocol.org/corporate-value-chain-scope-3-standard>

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- The third-party PCF verification statement.
- Per-period invoice listings and internal allocation documentation.
- Green ammonia consumption records.