Proba Additionality Assessment

Low carbon crops Agrifirm

Project ID: *PROBA.2025.0001*

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Template version applied: 1.0

Purpose and use of this template

This template supports project developers in assessing and demonstrating Additionality, as defined in Section 3.6 of the Proba Standard[1]. A project is considered additional if the GHG reductions or removals would not have occurred without the enabling role of carbon finance. To meet this criterion, Proba requires compliance with three types of additionality:

1. Regulatory Additionality
2. Financial Additionality
3. Prevalence

All three must be addressed.

The Additionality Assessment must be included as an appendix or addendum to the POD on the Proba Registry. For transparency, a public-facing version of the assessment must always be made available. If the assessment contains sensitive or confidential information, a separate public-facing version must be prepared in accordance with Section 5.4 of the Proba Standard. While supporting evidence may be withheld in such cases, the core reasoning and key claims must remain accessible in the public version.

Note: Some methodologies may include specific instructions or criteria for assessing additionality. This template includes optional subsections where such methodology-specific guidance can be documented.

Multi-intervention projects

If a GHG Project introduces multiple interventions, this template should address each intervention separately. Where feasible, consolidate responses to avoid duplication, but ensure that the traceability of each intervention is maintained. If multiple methodologies are applied, ensure all methodology specific additionality guidelines are clearly addressed.

[1] https://proba.earth/hubfs/Product/The_Proba_standard.pdf?hsLang=en

SECTION A: Regulatory Additionality

A.1 Legal Framework Assessment

- Is the project activity required by any existing law, policy, or regulation?

The use of **low-carbon fertilizers, controlled release fertilizers** and **nitrogen stabilizers** is not required by any existing law, policy, or regulation in the sourcing regions where Agrifirm operates. Existing fertilizer regulations focus on aspects such as nutrient content (e.g. nitrogen limits), application timing, and environmental safety, but they do not prescribe or promote specific fertilizer product types or compositions. This includes characteristics like reduced carbon intensity in production (for low-carbon fertilizers) or the inclusion of nitrification or urease inhibitors (for nitrogen stabilizers), or polymer coatings for delayed nutrient release (CRFs). As such, interventions clearly go beyond regulatory requirements and qualify as additional under the regulatory criterion.

For the **fuel switch intervention,** there is currently no regulation in the Netherlands requiring the use of HVO or other renewable fuels in agricultural vehicles beyond the "B7 standard". While agricultural and non-road mobile machinery (including tractors) are covered under the national **Energy for Transport Annual Obligation**, which requires fuel suppliers to reduce greenhouse gas emissions by 6 % and achieve a certain share of renewable energy in their transport fuel deliveries[2], there is no specific sub-target or regulatory

[2] https://english.rvo.nl/topics/bioenergy/policy-renewable-energy-transport

	requirement that agricultural vehicles themselves must use HVO or comparable renewable fuels. The system instead operates through tradable renewable energy units (HBEs) that suppliers can generate, trade, and bank to meet obligations.[3] At the EU level under RED II, while the Netherlands is subject to escalating overall and advanced biofuel targets (including minimum sub-targets for advanced biofuels such as those produced from Annex IX feedstocks) the Dutch legislation has not translated these into vehicle-specific mandates for agricultural machinery[4]. While overarching EU climate frameworks, including the **European Green Deal** and the **EU Climate Law** (which sets a binding 55% GHG reduction target by 2030), create a strong policy signal for decarbonization, they do not impose specific requirements on the choice of fertilizer products or a switch to HVO fuels. As such, the interventions clearly go beyond regulatory requirements and qualify as additional under the regulatory criterion.
• Are there any upcoming regulations that would mandate this activity during the crediting period?	There are no anticipated regulations that would mandate or promote the use of **low-carbon fertilizers**, **controlled release fertilizers** or **nitrogen stabilizers** during the crediting period. For the **fuel switch intervention** agricultural off-road machinery is not yet subject to CO_2 emission limits, and

[3] https://www.emissionsauthority.nl/topics/renewable-energy-for-transport/general---renewable-energy-for-transport/market-mechanism-and-hbes
[4] https://www.epure.org/wp-content/uploads/2023/02/230227-DEF-REP-Overview-of-biofuels-policies-and-markets-across-the-EU-February-2023-1.pdf

	no mandates are expected during the crediting period.
• If the project is required by regulation but goes beyond the minimum requirements, describe how the intervention exceeds the legal baseline.	As no regulations exist, the interventions are purely voluntary and thus exceed any implicit legal standards.
• Are there any sector-wide GHG reduction targets or current trends that indicate that the project activity is becoming standard?	Sector-wide GHG reduction targets exist, but there is no evidence that **low-carbon fertilizers, controlled release fertilizer, nitrogen stabilizers** or **HVO fuel switches** are becoming the norm. Adoption remains limited to premium-driven pilot projects, which supports additionality.

A.2 Methodology-Specific Guidance

• Provide the specific rules from the selected methodology that apply to assessing regulatory additionality.	The methodology "PM.0002: Adoption of **low-carbon fertilizers**" allows for the substitution of conventional fertilizers with low-carbon alternatives provided they are agronomically and chemically equivalent, and not mandated or incentivized externally. **Nitrogen stabilizers**: PM.0004 states that stabilizers can be used where they are not legally required or incentivized, and the project demonstrates a departure from baseline practices. **Fuel switch:** AMS-III.AK requires that the fuel switch be voluntary, exceed blending mandates, and not be legally required — all conditions are met in this case.

A.3 Supporting Evidence

• Where applicable, attach policy documentation, sectoral trend reports, or legal assessments.	• ***See Product and Price Review: project vs baseline table*** • ***For information about the Low Carbon Fuel, see link to product information (https://futurefuels.nl/eigenschappen-nestemy/) and PDF with product specifications.***

SECTION B: Financial Additionality

Proba accepts the usage of the CDM Tool for the Demonstration and Assessment of Investment Additionality[5] as a valid and structured approach to assess financial additionality. Project developers may refer to this tool to guide their analysis, using its accepted logic and structure to demonstrate the need for carbon finance. Alternatively project developers can use the following checklist.

B.1 Investment Viability

• Conduct a simple cost analysis demonstrating that the total costs of implementing and operating the project exceed any financial benefits.	**Low carbon fertilizer:** Nutramon Novo KAS is 36% more expensive than benchmark fertilizers in Agrifirm's portfolio. **Nitrogen stabilizers:** Stabilized fertilizers like Entec EVO are 120% of benchmark cost; Impact Zero products cost 185%; Vizura requires additional application (€30–45/ha). None of these offer agronomic or financial benefits to the farmer. **Fuel switch:** HVO fuels (e.g. HVO100) cost on average €0.14/liter more than standard diesel (B7), with no gain in efficiency, productivity, or revenue, resulting in a net cost increase for farmers.
• If the project does generate revenues, quantify the business case using an investment analysis method like Net Present Value (NPV) or Internal Rate of Return (IRR)	**Low carbon fertilizer and nitrogen stabilizers:** Both interventions do not generate proven, significant revenues or financial benefits from an agronomic perspective. Nutramon Novo KAS performs identically to conventional fertilizers in terms of nutrient content, application, and yield, offering no productivity or cost advantage. As such, the use of this

[5] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf

	product results in a higher input cost without direct return, and adoption would not occur without external financial support. **CRF:** For CRF we do see additional revenue as a result of increased yield, but this is currently insufficient (or too uncertain) to compensate for increased costs. **Fuel switch:** The intervention does not generate revenue or return on investment. Without external incentives (e.g. carbon finance), the fuel switch would represent a financial loss, making the NPV negative.

B.2 Financing conditions and constraints

• Are there cost-related barriers (e.g., high upfront CAPEX, long ROI periods)?	For all interventions, the higher product cost represents a financial barrier.
• Would this project proceed without carbon financing?	No. For all cases, the interventions would not proceed in the absence of carbon finance due to higher costs and lack of direct return to farmers.
• Has the project received subsidies or public incentives related to emissions reductions? Please explain their role and impact.	No subsidies or public incentives currently support either the use of low-carbon fertilizers, controlled release fertilizer, nitrogen stabilizers or HVO fuel switch.

B.3 Methodology-Specific Guidance

• Where applicable, include methodology-specific financial thresholds or guidance.	**Low carbon fertilizer methodology (PM.0002)** does not set strict financial thresholds but requires that the

	intervention would not occur in the absence of carbon finance, which is met in this case. **Nitrogen stabilizers (PM.0004):** Also requires evidence that adoption is not financially viable under standard conditions. Same applies for **Controlled Release Fertilizers (PM.0005) and the Fuel Switch intervention.**

B.4 Supporting Evidence

• Include cost analysis or calculations in a spreadsheet supporting the first condition (B1).	***See Product and Price Review: project vs baseline table***

SECTION C: Prevalence

Projects must show that the intervention is not commonly adopted in the relevant region or sector. This supports the claim that the activity is not business-as-usual.

Proba follows the CDM common practice guidelines[6], considering an intervention common if its adoption rate exceeds 25%. Developers may demonstrate non-prevalence using adoption data, benchmarks, or expert assessments.

If adoption data is limited, performance benchmarking may be used to show the project significantly outperforms typical practices. A barrier analysis can supplement the prevalence assessment, but is not mandatory.

[6] https://cdm.unfccc.int/Reference/Guidclarif/meth/meth_guid44.pdf

C.1 Prevalence / Common Practice

• What is the adoption rate of this practice in the relevant region/sector?	**Low carbon fertilizer**: The adoption of low-carbon CAN fertilizers such as Nutramon Novo KAS is currently limited to specific sustainability projects where farmers receive a premium for participating. Outside these projects, the product is not in general use. As such, adoption remains well below the 25% threshold in both Agrifirm's sales portfolio as well as in the broader fertilizer market, confirming that the practice is not common in the region or sector. **Nitrogen stabilizers**: Adoption is below 25%. Most farmers still rely on conventional fertilizers. Same applies to **Controlled Release Fertilizers.** **Fuel switch:** Adoption of HVO fuels in agriculture is below 25%. Use of HVO100 in farm vehicles is limited to early-stage pilot programs and is not sector-wide.
• Is it below 25% (Proba threshold for non-common practice)?	**Yes**

C.2 Benchmarking

• Provide performance data showing that the project significantly exceeds average practice (for example achieving lower nitrogen input per hectare)	**Low carbon fertilizer:** Nutramon Novo KAS achieves a 60%+ reduction in CO_2-eq emissions per kg product (0.378 vs. 0.95 kg CO_2-eq), significantly outperforming baseline fertilizers. **Nitrogen stabilizers:** Although product-specific PCFs may vary, their primary benefit lies in N_2O emission reductions not reflected in conventional practice. Specific data

	can be found in Appendix A1 and A2 of the POD. **Fuel switch:** Standard practice uses fossil diesel (B7, 3.262 kg CO_2-eq/l). The intervention uses HVO100 (0.314 kg CO_2-eq/l), achieving a 90% reduction in WTW emissions.
• Name the benchmark (e.g., regional nitrogen norm, GHG intensity benchmarks, FAO or peer-reviewed studies).	**Conventional CAN fertilizers in Agrifirm's portfolio (e.g., KAS Rendement, KAS Exact, Nutramon KAS)** **Fuel switch:** The benchmark is WTW GHG emissions per liter of fuel, based on certified fuel life cycle data.

C.3 Non-Financial Barriers (Optional)

• Describe any technical, institutional, or cultural barriers that may hinder adoption. This is optional and can supplement the prevalence assessment but is not required.	**Low carbon fertilizer:** A key non-financial barrier to low-carbon fertilizers lies in their limited availability, which creates logistical challenges in securing timely supply. This uncertainty, compared to the stable access to standard products, also leads to financial complications such as fluctuating price differences and higher transaction risks for growers. **Nitrogen stabilizers:** Barriers include limited awareness, supplier accessibility, and product complexity. These barriers lead to perceived risk of lower yields. Also a lack of infrastructure in combination with limited use is a barrier. Contractors do not invest in applied techniques because there is no demand yet. **Fuel switch:** Farmers may need to switch fuel suppliers, navigate supply availability issues, and adjust procurement processes. There is a lack of knowledge about HVO fuel.

This results in fear that engines are damaged or the quality of the fuel is reducing rapidly in winter time.

C.4 Methodology-Specific Guidance

- Where applicable, include specific performance indicators or thresholds defined by the methodology.

PM.0002 emphasizes substitution clarity and baseline data availability, both met through Agrifirm's documentation in the Bemestingsplan.
PM.0004: Emphasizes non-prevalence, barriers to adoption, and absence of regulatory requirements.

C.5 Supporting Evidence

- Provide adoption data, expert interviews, and baseline vs. project datasets.

- ***Quantitative evidence for justifying low adoption rate based on distributed volumes within Agrifirm can be delivered on request during Validation of the project***
- ***See Product and Price Review: project vs baseline table for PCF data***

SECTION D: Methodology-Specific Additionality Tests (Optional)

• List any methodology-specific additionality tests not covered in Sections A–C.	NA
• Where applicable, attach required documentation as defined in the methodology.	NA

Declaration by Project Developer

I declare that the information provided is accurate, and the project would not have occurred without the enabling role of carbon finance.

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