

# ASES ON-CHAIN PROTOCOL

## PROJECT STANDARD

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Version 2.1



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## ACRONYMS

|             |   |
|-------------|---|
| <b>aOCP</b> | ASES nature-positive climate action on-chain protocol |
| <b>BAU</b>  | Business-as-usual scenario                            |
| <b>CDM</b>  | Clean Development Mechanism                           |
| <b>GHG</b>  | Greenhouse Gas  |
| <b>KYC</b>  | Know Your Client                                      |
| <b>LSC</b>  | Local Stakeholder Consultation                        |
| <b>VNPC</b> | Verified Nature Positive Credit                       |
| <b>PSF</b>  | Project Submission Form                               |
| <b>SDGs</b> | Sustainable Development Goals                         |
| <b>SSR</b>  | Sources, Sinks And Reservoirs (of GHGs)               |
| <b>UN</b>   | United Nations  |
| <b>VBBC</b> | Verified Biodiversity Based Credit                    |
| <b>VCAC</b> | Verified Climate Action Credit                        |
| <b>VCRd</b> | Verified Carbon Reduction                             |
| <b>VCRm</b> | Verified Carbon Removal                               |
| <b>VSC</b>  | Verified Soil Credit                                  |
| <b>VWC</b>  | Verified Water Credit                                 |

## I. INTRODUCTION

The ASES nature-positive climate action on-chain protocol, also known as the ASES protocol or aOCP, is a protocol that simplifies carbon emissions offsetting and encourages high-quality programs that remove carbon dioxide and restore biodiversity, water and soil. It leverages blockchain technology for the benefit of transparency, accountability and traceability.

The aOCP supplies the carbon and nature markets with carbon removals and reductions, biodiversity, water and soil credits issued from projects implementing Nature-based Solutions. By simplifying the procedures for Project proponents and buyers of credits, the aOCP boosts financial flows for projects that contribute to the global fight against climate change, biodiversity loss and land degradation. In addition, projects accredited under this protocol contribute to achieving the United Nations Sustainable Development Goals (SDGs).

The aOCP provides the guidelines for the registration of Project activities and the issuance of Verified Nature Positive Credits (VNPCs), including intermediate stages (project design, monitoring, quantification and reporting of GHG reductions/removals, impacts on biodiversity, water infiltration, soil erosion and SDGs, third-party validation and verification).

The aOCP was created by ASES Ecological and Sustainable Services, an organization with more than 20 years of experience in ecological engineering and sustainability solutions. The methodologies and tools for the quantification of project benefits and the determination of the amount of credits to be issued are based on sound scientific foundations.

## II. PURPOSE OF THE AOCPPROJECT STANDARD (THIS DOCUMENT)

This document serves two main purposes. The first is to describe the specific requirements applicable to project developers intending to develop nature-based solutions projects for GHG emission removals and to submit applications for registration and issuance of carbon, biodiversity, water and soil credits (VNPC), as well as applications for SDG labels, under the aOCP Program. The second is to ensure that the documentation prepared by project proponents and submitted to the aOCP Program throughout the project cycle is of high quality.

ASES ensures the high-quality and integrity of issued VNPCs by assessing projects' compliance with the accreditation principles outlined below and aOCP procedures, rules and requirements. The requirements for projects set up in the aOCP follow the international standards ISO 14064-2 and ISO 14064-3. In order to confirm compliance with the accreditation criteria, all projects are also screened using a geo-prospective approach<sup>1</sup>.

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<sup>1</sup> The geopropective approach is a way to predict and assess for future risks, and is a comprehensive method for identifying and addressing potential change impacts. It offers an interdisciplinary perspective, tying in concepts and techniques from geography, including spatial analysis methods, modelling, and GIS, to address issues of ecological impacts of climate change, urban risk and resilience, land use changes, coastal impacts, and sustainable development and potential of adaptability.

### III. VERSION

This is the aOCP Project standard version V1.1, which has taken into consideration commentaries received from the public consultation. A version number will be used to distinguish successive versions of the document. A version control section in the appendix will indicate what updates have been made to each edition of the document and the effective date. Updates will be communicated to aOCP stakeholders. Readers should ensure that they use the most recent version of this and all other aOCP documents. The ASES website, <https://www.ases-eco.com/project-developers.html>, will host the history of versions of the aOCP materials. Please be aware that projects and Verified Nature Positive Credits (VNPCs) are not tagged with a particular version of the aOCP Project Standard in the NAT5 carbon ledger.

### IV. DEFINITIONS RELEVANT TO THIS DOCUMENT

The technical concepts specific for the purposes of the Project standard are defined in this section. A broader set of definitions can be found in the document aOCP Program definitions. There are more relevant definitions in ISO 14064-2, ISO 14064-3, and ISO 14065.

- **Additionality**

Emission reductions and removals associated with projects are greater than what would have happened without them or in the absence of them.

- **Base year**

A certain historical period has been chosen in order to compare GHG emissions and removals, as well as biodiversity, water or soil-related data throughout time.

- **Water baseline scenario**

Before a project begins, consider the erosion and runoff values present in the project area.

- **Biodiversity baseline scenario**

Before a project begins, consider the biodiversity values present at a location, their present state, and their tendencies.

- **Carbon baseline scenario**

The baseline scenario represents the current sequestration rate, emissions and carbon storage capacity of the carbon sinks and sources within the Project boundaries.

- **Carbon dioxide equivalent (CO<sub>2</sub>e)**

Unit for comparing the radiative forcing of a GHG to that of carbon dioxide. It is calculated using the GWP.

- **Carbon sink**

A place where a greenhouse gas, an aerosol, or a precursor of a greenhouse gas is kept in a natural or artificial reservoir, such as soil, water or vegetation. The UNFCCC Article 1.8 defines a sink as "any process, action, or mechanism that removes from the atmosphere a greenhouse gas, an aerosol, or a precursor of a greenhouse gas" (IPCC, 2022). Ecosystems act as a carbon sink, where the uptake, or removal of carbon from the atmosphere, exceeds the amount of carbon released.

- **Criteria**

Policy, procedure or requirement used as a reference against which the GHG statement is compared.

- **Global warming potential (GWP)**

Index, based on radiative properties of GHGs, measuring the radiative forcing following a pulse emission of a unit mass of a given GHG in the present-day atmosphere integrated over a chosen time horizon, relative to that of carbon dioxide (CO<sub>2</sub>). A list of GHGs with their recognized GWPs is provided in the latest Intergovernmental Panel on Climate Change (IPCC) Assessment Report. Parties to the Paris Agreement have decided to report their aggregated emissions and removals with reference to a time horizon of 100 years (GWP100). The aOCP aligns to this way of reporting.

- **Greenhouse gas (GHG)**

Gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds. GHGs include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>).

- **GHG baseline**

Quantitative reference(s) of GHG emissions and/or GHG removals that would have occurred in the absence of a GHG project and provides the baseline scenario for comparison with project GHG emissions and/or GHG removals.

- **GHG emission reduction**

Quantified decrease in GHG emissions between a baseline scenario and the Project activity.

- **GHG program**

Voluntary or mandatory international, national or subnational system or scheme that registers, accounts or manages GHG emissions, GHG removals, GHG emission reductions or GHG removal enhancements outside the organization or GHG project.

- **Project activity**

Activity or activities that alter the conditions of a GHG baseline and cause reductions in GHG emissions or improvements in GHG removals. Project activities involved in the aOCP must

be positive for nature and may have positive impacts on groundwater recharge and soil health and erosion. These aspects will also be assessed against a baseline and credited with the issuance of VNPCs.

- **Project proponent**

A person or group with overall management and accountability for a registered Project activity. In the text, the phrase "project developer" is also used interchangeably.

- **GHG removal**

Withdrawal of a GHG from the atmosphere by *GHG sinks*.

- **GHG net anthropogenic removal**

Quantified increase in GHG removals between a baseline scenario and the GHG project.

- **GHG statement**

A factual and impartial statement that offers the material for examination or verification. The GHG statement may cover a period of time or be delivered at a certain point in time. The responsible party's GHG statement must be easily recognizable and capable of being consistently measured or evaluated against appropriate standards by a verifier or validator.

- **Interested party**

Person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity.

- **Monitoring**

Continuous or periodic collection of data. For aOCP purposes it can relate to GHG emissions, GHG removals, land cover, biodiversity, soil, water. It can be conducted through field measurements, analysis of remotely sensed data, modeling, socio-economic tools, etc.

- **Resilience**

The capacity of social, economic, and ecological systems to respond to or reorganize in the face of a potentially dangerous event, trend, or disturbance in the face of a potentially dangerous event, trend, or disturbance. For aOCP purposes, these include extreme geologic, weather and climatic events: fire, landslides, flooding, drought, heatwaves, earthquakes, frost, storms, etc.

- **Taxocenosis**

A community of organisms belonging to the same taxonomic classification and coexisting in a geographic region. In other words, it is a group of species that share a certain taxonomic level, such as a genus, family or order. Taxocenoses (pl.) are also known as ecological communities.

- **Soil carbon sequestration (SCS)**



Land management changes which increase the soil organic carbon content, resulting in a net removal of CO<sub>2</sub> from the atmosphere.

- **Soil moisture**

Water stored in the soil in liquid or frozen form. Rootzone soil moisture is of most relevance for plant activity.

- **Uncertainty**

Result of the quantification parameter that describes the range of values that could be legitimately attributed to the quantified amount. Information on uncertainty often includes qualitative descriptions of the likely causes of the dispersion as well as quantitative estimations of the likely range of values.

- **Validation**

Method for determining if the premises, constraints, and procedures used to make a claim regarding the future results of proposed Project activities are reasonable.

- **Verification**

A method for assessing historical data and information statements to confirm if they comply with administrative requirements and are materially accurate.

- **Validation/verification bodies (VVBs)**

Examine whether a project complies with aOCP standards, namely ISO 14064-2. VVBs are independent, accredited, competent and impartial third parties that ASES approved to carry out validation and verification within the aOCP framework.

## V. ACCREDITATION PRINCIPLES

In order for the GHG emission reductions to be certified as carbon credits, they must be:

- **Real:** Measurements, monitoring and ex-post verification of all emission reductions and removals, as well as the project activities that generate them, demonstrate that they have all actually occurred.
- **Measurable:** Against a realistic and reliable emissions baseline, credits are measurable and obtained from accepted measurement methodologies, including corrections for uncertainty and leakage. The only baseline emissions estimate that is used to calculate credits is one that is reasonable and conservative and assumes the "business as usual" (BAU)<sup>2</sup> trajectory in the absence of the project activity. MRV is performed regularly at intervals predetermined by ASES and agreed by the Project proponent.

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<sup>2</sup> BAU projections are based on the assumption that operating practices and policies remain as they are at present. Although baseline scenarios could incorporate some specific features of BAU scenarios (e.g., a ban on a specific technology), BAU scenarios imply that no practices or policies other than the current ones are in place.

- **Additional:** Projects to be registered in aOCP shall demonstrate additional sequestration or emission emissions reduction that would not take place in the absence of the Project activity and which are superior to relative to a conservative BAU scenario. aOCP will evaluate each project's compliance with the additionality criterion on an individual basis and in light of its unique circumstances.
- **Permanent:** Carbon credits are given out for reduction and removals that are long-lasting or, if there is a risk of reversal, must include standards for a multi-decadal period, a thorough risk mitigation plan, a compensation plan, and a way to replace any units that are lost. The strategies adopted by ASES to guarantee permanence include the creation of a buffer pool of credits that will not be available for sale, as well as the insurance of the credits issued.
- **Independently validated and verified:** All GHG emission reductions and removals, impacts on biodiversity, water and soil must be validated before the project begins and verified as they take place, with a reasonable degree of assurance, by an independent third party aOCP-approved Validator or Verifier, respectively.
- **Transparency:** Project-related information will be sufficiently disclosed to enable interested parties to form informed opinions. This includes details on the project activity's additionality, a description of the methodology(ies) used to establish the baseline and project scenarios and how they were applied, information supporting contribution to UN SDG, studies regarding ecosystem and social impacts and compliance with the do-no-net-harm principle, and issues regarding double counting.
- **Unique:** Verified Nature Positive Credits are not issued, sold or claimed more than once. The blockchain-based NAT5 ledger serves this principle with traceability.
- **Biodiversity positive:** Projects registered in aOCP have a favorable effect on biodiversity at its various levels—genetic, specific and ecosystemic—by helping to restore degraded ecosystems with a variety of species and organisms adapted to future climate.

## VI. GENERAL PROJECT ELIGIBILITY CRITERIA

### SECTORAL SCOPE OF THE STANDARD

The aOCP projects that will generate VNPCs fall within the CDM sectoral scopes 13 (waste handling and disposal), 14 (afforestation and reforestation) and 15 (agriculture). Specifically, the aOCP is open to the following 5 types of projects. The characteristics of each of them can be found in the *One pager* documents, available in the aOCP website<sup>3</sup>.

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<sup>3</sup> <https://www.nat5.bio/index.php/docs/>

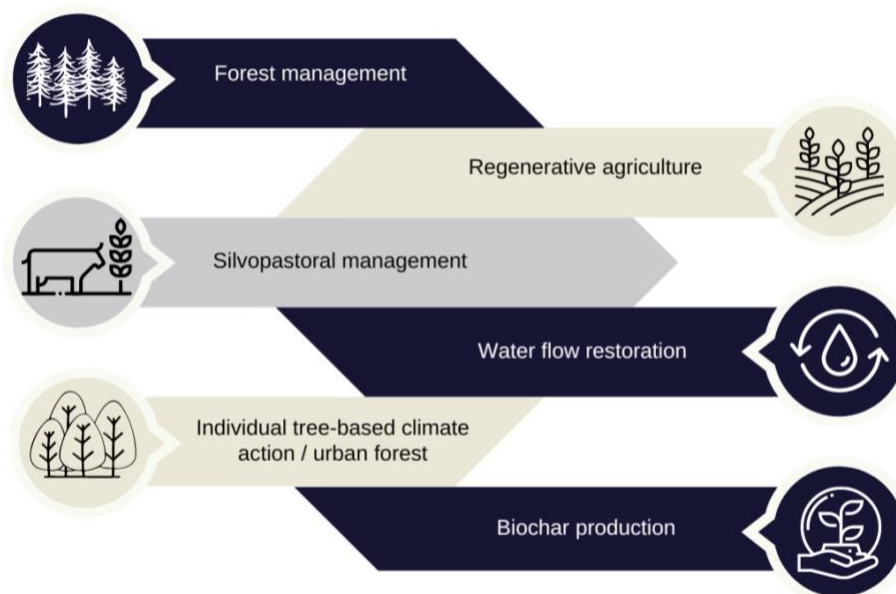


FIGURE 1. TYPES OF ELIGIBLE PROJECTS

## PROJECT MODALITIES

This section defines two project modalities under the aOCP based on the start date of the activities (Modality A and Modality B). In both cases, projects shall not be registered under any other GHG Program.

- (i) **Modality A:** Project activities begin once the project is deemed to be registered in the aOCP. All steps until Project Validation has been completed.
- (ii) **Modality B:** Project activities have started up to 5 years before the date of the initial submission of the PSF and accompanying documentation.

Project Proponents may refer to the aOCP Procedures document to understand the project registration and issuance of VNPCs for each modality.

## VII. PROJECT REQUIREMENTS

Project developers must meet all of the eligibility standards listed below to register the project with the aOCP and be issued VNPCs. These requirements support and contribute to the compliance of accreditation principles. The Project proponent must complete the aOCP Project Submission Form (PSF) and prepare the project documentation outlined therein.

The additionality requirement shall be met by all aOCP projects. The PSF mentions guidelines and methods that can be used to demonstrate additionality.

All projects participating in the aOCP shall be harmless to the ecosystem and society. The Ecosystem and Social Safeguards Standard lays forth the requirements for the prevention

of impacts on ecosystems and society, to adhere to the "do no net harm" principle. Furthermore, every project that participates in the aOCP shall be positive for biodiversity; this is to be demonstrated through the assessment of baseline scenario and status of biodiversity during and after project activities, according to the aOCP methodology for biodiversity. The PSF, aOCP-approved methodologies, aOCP Validation and Verification Standard, and the aOCP Project Standard (this document) provide the requirements to comply with, assess and obtain Verified Nature-Positive Credits for the positive impacts projects have on biodiversity, water, and soil, in addition to GHG reduction/removal.

The aOCP does not allow double issuance of credits from ASES and other GHG programs. Before registration of the project and before the issuance of credits, ASES will confirm that the project activity(ies) have not already been registered and/or credited in the same project site and during the same period. Project proponents shall confirm this in their PSF.

The Project Proponent shall demonstrate that the Project Activity:

- a) Is not required by a legal mandate and does not implement a legally enforced mandate (government regulation or law);
- b) Complies with all applicable host-country legal requirements<sup>4</sup> with compliance-focused at project level scope. The Project Proponents shall ensure compliance with legal requirements by demonstrating that the project has either acquired the necessary licenses for their implementation and operation or provide an undertaking that these approvals and the licenses are under process and shall be available prior to the start of project operations;
- c) Will deliver real, measurable, and additional GHG emission reductions/removals compared to its baseline;
- d) Will deliver real, measurable, and additional benefits to biodiversity compared to its baseline;
- e) Will deliver real, measurable, and additional benefits for groundwater recharge compared to its baseline (only if the project is applying for VWCs);
- f) Will deliver real, measurable, and additional benefits for soil restoration compared to its baseline (only if the project is applying for VSCs)
- g) Applies an aOCP-approved Baseline and Monitoring Methodology;
- h) Has been assessed for its contribution to the UN SDGs (mandatory only when the Project proponent seeks to add this label to the VNPCs),
- i) This leads to long-term and/or permanent storage of the GHG emissions removed, this includes having a sound risk management plan. Additionally, the aOCP will establish a buffer pool of credits that will be kept as a reserve in case of reversal.

Before submitting the documentation to register a project with aOCP, the Project Proponent shall conduct a Local Stakeholder Consultation (LSC), gather the feedback received, and

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<sup>4</sup> The legal requirements include: demonstration of the Project Proponent to have ownership of the land where the project will take place, or have an authorization to use it for the duration of the project, signed by the land owner; approval from the environmental authority (if applicable).

take into consideration to modify and adjust the project if needed. Evidence on the conduction and results of this process shall be included with the PSF at the moment of submission. Guidelines and specifications on how to conduct a LSC are included in the aOCP Ecosystem and Social Safeguards Standard.

The ISO 14064<sup>5</sup> criteria are complemented by the aOCP requirements. While the exact mandatory requirements of the aOCP are specified in the Project Standard (this document) and appropriate aOCP methodologies, the requirements of the aOCP are based on International Standards ISO 14064-2 and ISO 14064-3. The Project Standard's requirements, which mostly concentrate on the Project Proponents, establish explicit, obligatory standards for creating aOCP initiatives.

When implementing aOCP rules and regulations, the Project Proponent shall take the following factors into account:

- a) As required by clause 1 of ISO 14064-2, the rules and requirements of the aOCP shall take precedence in cases where ISO 14064-2 requirements prohibit a Project Proponent from complying with an aOCP requirement;
- b) The prioritization of various rules and requirements within the aOCP shall be handled as per the hierarchy of documents stipulated in the aOCP Framework.

## **VI.1. GENERAL REQUIREMENTS RELATED TO APPLICABLE RULES**

At every point of the project cycle, from project activity design, implementation, and monitoring, to the request for issuance of VNPCs, project proponents must ensure that the proposed aOCP Project Activities are in accordance with all relevant most recent aOCP rules and requirements. The most recent version of any external document referenced in the relevant aOCP standard documents shall be used.

The new requirements of the aOCP normative documents cannot be applied retrospectively to projects already registered.

The quantification of the GHG emission reductions and removals, biodiversity, water, and/or soil impacts attained by the project are requirements for the issuance of VNPCs (once verified by an aOCP-approved Verifier) and shall be carried out in accordance with either the aOCP Methodologies or a different one selected by the project proponent and approved by the aOCP Operations Team, in accordance with the Standard for Development of Methodologies.

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<sup>5</sup> International standard specifying requirements for the design, implementation and verification of emission management systems.

## **VI.2. GENERAL REQUIREMENTS RELATED TO DESIGN OF PROJECT ACTIVITY**

Project Proponents must adhere to the standards listed below in order to submit projects to the aOCP for registration, in addition to the requirements listed in the Project Submission Form. and any applicable aOCP or external Methodology.

Project Proponents are required to use Global Warming Potentials with a time horizon of 100 years (GWP100) in accordance with the most recent IPCC Guidelines in effect at the time project documents are submitted to the aOCP. This condition shall be applicable regardless of any GWPs specified in other methodologies and any methodological instruments used in connection with the particular Project Activity. Annex 1 provides the GWP100 to be used, issued from the IPCC Sixth Assessment Report.

It is imperative that projects and activities concerning reforestation take into account the preservation of the country's natural species. In order to ensure the protection and conservation of the local environment, it is essential that only species that are naturally present within the country be utilized in such initiatives. The introduction of exotic or invasive species can potentially cause harm to the existing ecosystem, and as such, should be avoided at all costs.

If the aOCP Baseline and Monitoring Methodology are not suitable for a particular project or are not available, the Project Proponents must inform the aOCP Operations Team. The aOCP Operations Team, representing the aOCP Program, will create simpler and more user-friendly Baseline and Monitoring Methodologies for projects on a case-by-case basis in line with the needs and priorities of the Program. When necessary, the aOCP Program will work with Project Proponents to revise aOCP methodologies and receive approval from the Steering Committee before the revised methodology can be used. All newly developed or revised methodologies must be approved by the aOCP Steering Committee.

Changes in project activities or unexpected events (extreme weather, fire, drought, floods, etc) that affect a project's GHG emissions and removals, impacts on biodiversity, soil and water shall be reported by the proponent to the aOCP Operations Team. The Project proponent must describe how the new actions or modifications still adhere to the validated PSF. If the adjustments are no longer compatible with the validated PSF, it shall be re-validated by an aOCP-approved Validator.

## **VI.3.SPECIFIC REQUIREMENTS REGARDING THE DESIGN OF THE PROJECT ACTIVITY**

### **VI.3.1. PROJECT DESCRIPTION**

Project proponents are required to utilize the aOCP PSF to submit the project details, including diagrams, specifications, and an explanation of how the project reduces or eliminates greenhouse gas emissions and benefits biodiversity, as well as soil and water resources if applicable.

### **VI.3.2. PROJECT PROPONENTS**

Any right to use originating from a statutory, proprietary, or contractual right of the plant, equipment, method, or measure that reduces GHG emissions and is granted to the Project Proponent must be supported by documentation evidence.

### **VI.3.3. PROJECT START DATE**

The project start date is the day on which project operations begin. The earliest date at which the project can start removing GHG emissions is the project start date, which must not be more than 5 years prior to the date of submission of the documentation to the aOCP.

### **VI.3.4. PROJECT CREDITING PERIOD**

In the aOCP, the crediting period extends for 10 years, encompassing VNPCs corresponding to the full 40-year project life. Following the conclusion of the initial 10-year crediting period, renewal is permissible for an additional 10 years, provided that specific conditions are met. These conditions include either the implementation or intention to implement additional project activities beyond those initially registered in the Project Submission Form (PSF), or the demonstration that the ecological benefits derived from project activities surpass those initially estimated and issued to the project proponent. Such circumstances can lead to the generation of more VNPCs than originally anticipated when the Project activity was registered.

The crediting period may be renewed for a maximum of three consecutive times, culminating in the final crediting period concluding at year 40, aligning with the project's entire life span. By allowing for periodic reassessment and potential extension of the crediting period, the aOCP promotes continuous improvement and innovation in project implementation, fostering long-term sustainability and environmental impact. This approach ensures that projects registered within the aOCP framework remain dynamic and responsive to evolving environmental challenges and opportunities throughout their operational lifetime.

#### **VI.3.4.1. Project Crediting Period Renewal Procedure**

At the end of each crediting period, the aOCP ITTE will conduct a comprehensive evaluation process that involves comparing the ecological benefits delivered by the project against the original projections and issued VNPCs. This assessment intends to determine whether the project has exceeded the anticipated benefits established in the *Official Registration Letter*. If this is the case, the aOCP ITTE will propose to the Project developer the renewal of the crediting period and a new Contingency Table for the issuance of the remaining VNPCs.

Alternatively, the Project proponent may apply for renewal of the accreditation period if it plans to carry out additional Project activities beyond those originally registered. In this case, it shall complete and submit a new PSF, which the aOCP ITTE will use to conduct a new baseline assessment to estimate the expected benefits resulting from the additional Project activities proposed for implementation during the renewed period. This entails reassessing the ecological impact potential of the project against current environmental conditions, the relevance of the original counterfactual areas, regulatory frameworks in force, barriers for

implementation, as well as updating the relevant parameters used to calculate GHG emissions reductions and removals and other ecological benefits.

#### **VI.3.5. PROJECT SCALE**

Impacts on GHG emissions reductions/removals, biodiversity, groundwater recharge and on soil health and erosion shall be stated in the PSF at the Project-level. During the monitoring process, the aOCP Operations Team will conduct the assessments at microbasin level, in order to have a counterfactual to compare the evolution of the ecosystem inside and outside the Project area along the life of the project. This serves to prove additionality and quantify the changes in the Project area due to the implementation of Project activities.

#### **VI.3.6. PROJECT LOCATION**

Project Proponents must submit information about the project activity's physical and geographical location, including elements that allow for its distinct identification (geodetic coordinates using WGS84 datum, in decimal degree format with at least 4 decimal places, a physical address and a map). We encourage project proponents to also provide Shapefiles “.shp” or “.kml” files.

We ensure that the Project proponent is the legal owner or has the written authorization of the legal owner of the land, through documents, letters signed by public notary, community or other authorities. Communal lands can apply if the members agree and the continuity of the Project can be ensured for the duration of its life.

#### **VI.3.7. PROJECT BOUNDARY**

According to the used Baseline and Monitoring Methodology, Project Proponents must identify the proposed project's boundaries, including its physical demarcation, the GHG sources, sinks and reservoirs, and the greenhouse gases (GHGs) that are included in the baseline and project scenarios.

Regarding biodiversity, Project proponents shall specify which taxocenoses or ecological communities (groups of species coexisting in a geographic region) the project is expected to benefit, and are therefore going to be assessed and credited for. Examples of taxocenoses are trees and shrubs; birds; mammals; reptiles; amphibians; butterflies; etc.

#### **VI.3.8. PROJECT ADDITIONALITY**

The aOCP requires demonstration of project additionality by means of the following two components:

- A Legal Requirement Test; and
- An Additionality Test either based on a projects-specific additionality test.

**Legal Requirement Test:** If a project is required by law, it cannot be considered additional. To pass the legal requirement test, the project must not be required by any laws or mandates at the federal, state, or local level. This includes any court orders, environmental agreements, or permitting conditions. Even if a similar technology or measure would achieve equivalent GHG emission reductions, the project cannot be required by law to be



implemented. Any voluntary commitments or agreements within a sector or by an entity do not count as legal requirements.

The aOCP is focused on physical and ecological additionality. The aOCP operations team conducts thorough assessments for each project activity, wherein the historical trends in land use cover within the micro-watershed are carefully evaluated. Additionally, we employ modeling techniques to project future trends in two scenarios: one with the implementation of the project and the other without it. The disparity between these two future scenarios serves as a quantification of project additionality. This detailed assessment takes place upon registration of the project activity and forms an integral part of the baseline assessment. More details on this process are available in the document *aOCP Permanence, additionality and non-leakage*.

However, before a project can be deemed eligible to participate in the aOCP, project proponents are required to furnish specific information in the PSF. This information pertains to the following key issues:

1. Environmental Issues: Project proponents must identify and elucidate environmental issues present within the project area as well as the wider region where the project is situated.
2. Local Population Response: responses of the local population to these identified environmental issues. Additionally, any solutions that have not been utilized thus far, along with the reasons for their non-implementation, need to be included.
3. Social Impact: social problems that the Project activity aims to address and improve.
4. Biodiversity: the region's biodiversity, considering both beneficial and problematic aspects.
5. Traditional Practices / Business-as-usual scenario: The document should outline the prevailing traditional practices and the current situation that the project seeks to enhance or modify.
6. Proposed Regenerative Practices: detailed description of the regenerative practices proposed by the project activity, which contribute to its overall environmental and ecological goals.
7. Problem Solving: once the environmental and social issues have been identified, define which one(s) the Project aims to address and to which extent.

By thoroughly assessing these crucial aspects, the aOCP ensures that only projects with genuine physical and ecological additionality are eligible for participation, promoting sustainable practices and addressing environmental and social challenges effectively.

### **VI.3.9 BASELINE SCENARIOS FOR AOCPP PROJECTS**

The aOCP Operations Team will either choose a default baseline scenario provided in the methodology, or select the baseline scenario for the project in accordance with the standards outlined in the methodology applied to the project.

Project Proponents must provide justification for all assumptions, values, and methods used in establishing the baseline scenario in order for the most likely baseline scenario to result in a conservative estimate of GHG emission reductions, biodiversity, groundwater recharge and soil erosion.

The baseline scenario, i.e. business-as-usual, will be assessed throughout the life of the project in areas outside the Project area. These areas, called the *counterfactual*, shall have similar ecological conditions at the start of the Project and not be subject to restoration activities. The additional ecological benefits delivered by Project activities will be assessed by comparing the counterfactual and the Project areas.

### **VI.3.10. PROJECT GHG EMISSION REDUCTIONS/REMOVALS**

According to the chosen Baseline and Monitoring Methodology, Project Proponents are required to calculate baseline, project, and leakage emissions as well as GHG emission reductions and removals attributable to the planned Project Activity for each year of the crediting period.

When baseline and monitoring methodology offers several scenarios, options, or default values for various parameters for estimating the project's emission reductions/removals, justification for the choice of if it shall be provided.

In the case of removals from plant growth, the initial projection will be limited by the theoretical Net Primary Productivity, specifically, the Miami Model of climatic net primary production of biomass<sup>6</sup>. As the project develops and plant growth can be effectively measured, the observed biomass growth will be used to inform ex-post Verified Carbon Removals calculation and issuance.

### **VI.3.11. PROJECT MONITORING PLAN**

ASES will define, in agreement with the Project proponent, the monitoring plan for each project on a case-by-case basis, taking into consideration the project's characteristics (type of project, activities, ecosystem, location, type of VNPCs it will generate). The aOCP Operations Team will conduct the monitoring activities (including site visits, analysis of remotely sensed data, interviews with stakeholders-when necessary) and the elaboration of

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<sup>6</sup> Grieser, J., Gommel, R., & Bernardi, M. (2006). *The Miami Model of climatic net primary production of biomass*. Available at: [http://www.juergen-grieser.de/downloads/NetPrimaryProduction/npp\\_miami.pdf](http://www.juergen-grieser.de/downloads/NetPrimaryProduction/npp_miami.pdf)

the Project Monitoring Report. Project Proponent's may be required to be present during site visits and/or to provide mechanisms for ASES to get in contact with stakeholders.

#### **VI.3.12. PROJECT RECORDS AND INFORMATION**

Project Proponents are required to make sure that all paperwork is stored safely and easily accessible for at least two years following the end of the project crediting period.

Project Proponents must facilitate the Verification process by providing the supporting material and data from the project description, proof of their right of use, and proof that the measures or technologies were successfully installed.

#### **VI.4. REQUIREMENTS FOR PROJECT IMPLEMENTATION AND MONITORING**

The registered aOCP Project Activity shall be implemented and operated by the Project Proponent in accordance with the registered PSF.

In accordance with the Monitoring plan and in order to obtain the VNPCs corresponding to the last monitoring period, Project Proponents shall provide, on a yearly basis, aOCP Operations Team with a Project Activity Report on the activities implemented during the monitoring period.

aOCP Operations Team will use this information and the analysis of its own data sources to calculate Project Activity's GHG emission reductions and removals, impacts on biodiversity, soil and water (according to the objectives of registered in the PSF). The aOCP Operations Team will prepare the Project Monitoring Report with this information and include the following details:

- a) Title and aOCP reference number of the Project Activity;
- b) Name of the Project Proponent involved;
- c) Location of the Project Activity;
- d) Titles, versions and reference numbers of the applied methodologies and, where applicable, the methodological tools to which the applied m+}
- e) methodologies refer;
- f) Modality and project start date;
- g) Monitoring period number and dates of coverage.
- h) Amount of VNPCs of each type to issue. This amounts shall be approved by the independent, third-party aOCP-approved Verifier prior to issuance of credits.

##### **VI.4.1. DESCRIPTION OF IMPLEMENTED REGISTERED PROJECT ACTIVITY**

The Project Proponents shall provide a description of the implemented registered aOCP Project Activity in the Activity Reports, clearly describing the following

- a) Information on the implementation and actual operation of the Project Activity, including relevant dates (e.g. construction, start of operation). For an aOCP Project Activity that consists of more than one site, the Project Proponents shall describe the status of implementation and start date of operation for each site. For an aOCP

- Project Activity with phased implementation, the Project Proponents shall indicate the progress of the aOCP Project Activity achieved in each phase
- b) activities' location (providing maps and geodetic coordinates, shapefiles or .kml -if possible),
  - c) any feedstock used,
  - d) energy sources and quantities,
  - e) procedures implemented, installed technologies, processes and equipment
  - f) waste management,
  - g) human resources (number of persons involved, activities they performed),
  - h) machinery and any other information relevant for the description of project activities during the Monitoring period.

This report must include all supporting documentation and evidence (invoices, photographs, reports, videos, laboratory test results) that can back up claims of GHG, biodiversity, water and soil as well as compliance with the aOCP requirements.

Any temporary departures from the registered monitoring plan, the applied methodology, the other applied methodological regulatory papers, or any long-term alterations to the registered aOCP Project Activity must be disclosed by the project proponent (hereinafter referred to as post-registration changes).

#### **VI.4.2. DESCRIPTION OF MONITORING SYSTEM**

The monitoring plan, designed by the aOCP specifically for each Project activity, must include a description of the monitoring system. This description might cover things like assessed parameters, data gathering methods (information flow, including data production, aggregation, recording, calculations, and reporting), organizational structure, employee roles and duties, and monitoring system emergency protocols.

The aOCP is aware that while creating PSFs, not all of the data linked to monitoring of parameters required by the approach may be available. However, Project Proponents are advised to take into account, where necessary, the requirements in the following paragraph while drafting a PSF in order to reduce and eliminate post-registration changes and deviations from registered PSFs. These conditions must be met when creating Monitoring Reports.

For each parameter that will be monitored, both, the aOCP Operations Team and Project Proponents must adhere to the following requirements.

- a) Describe the measurement/calculation method, as well as the frequency of measurement and recording;
- b) Describe the instrument used to monitor the parameter and, if applicable, provide information on its accuracy class and calibration (frequency, date of calibration, validity, uncertainty levels, methods). The Project Proponents must make sure that measurement equipment is calibrated in line with local/national standards or the manufacturer's instructions if neither the applied technique nor the aOCP requirements indicate any requirements for calibration frequency. International

standards may be utilized if local/national standards, the manufacturer's specifications, or both are not accessible. Unless otherwise specified in the employed techniques, the Project Proponents shall ensure that the equipment used to test a parameter to establish emission reductions is calibrated at least annually if international standards are not readily available;

- c) Describe the data variables, which may change or stay the same. Unless otherwise specified in the applied methodology, data variables that have an impact on GHG emission reductions and vary continuously (e.g., amount of fuel inputs, amount of heat or electricity produced, amount of gas captured) shall be measured and recorded at appropriately justified intervals. Unless otherwise specified in the applied technique, data items that are typically constant (such as emission factors, calorific value, and system efficiencies) must be monitored or calculated at least once each year;
- d) Provide the parameter's values so that GHG emission reductions or net anthropogenic GHG removals can be calculated.
- e) Describe and/or list the data sources (such as logbooks, daily records, or surveys);
- f) Provide the calculation method of the parameter, where relevant;
- g) Establish the operational and management framework necessary to carry out the monitoring strategy;
- h) Explain how the appropriate emission factors, IPCC default values, and any other reference values were used to determine the reductions in GHG emissions or the net anthropogenic GHG removals;
- i) Describe who is responsible, how the organizations are set up, and what the quality assurance and quality control (QA/QC) processes are for gathering and archiving data.

#### **VI.4.3. CALCULATION OF GHG EMISSION REDUCTIONS OR NET ANTHROPOGENIC REMOVALS**

Project Proponents shall, for the registered aOCP Project Activity for the monitoring period, provide the formulae, calculations and results of the following:

- a) Baseline scenario GHG emissions or baseline net GHG removals, as in the PSF;
- b) Project scenario GHG emissions or actual net GHG removals;
- c) Leakage GHG emissions;
- d) GHG emission reductions or net anthropogenic GHG removals. This is calculated as **b) minus a) minus c).**

The monitored aOCP Project Activity's GHG emission reductions or net anthropogenic GHG removals shall be contrasted with the baseline and with the last monitoring report in order to calculate the actual contribution of the project.

#### **VI.4.4. CALCULATION OF BIODIVERSITY**

Before project activities begin and at the end of each monitoring period, biodiversity shall be assessed and reported using the Shannon-Weiner Diversity Index (SWDI). The aOCP Methodology for Biodiversity provides specifics on the calculation process for the SWBI.

The Monitoring Report shall include for each of the taxocenoses listed in the PSF the results, computations and data used for evaluating the following:

- a) Baseline SWDI, as registered in the PSF;
- b) Current SWDI at the moment of monitoring;
- c) Change in SWDI with respect to the baseline and to the last monitoring report, expressed as percentages.

The registered aOCP Project Activity's biodiversity gains or losses must be compared by the project proponents to the registered PSF's baseline and the past monitoring periods in order to track the changes along the life of the project .

#### **VI.4.5. CALCULATION OF IMPACTS ON GROUNDWATER RECHARGE**

Positive effects on water infiltration into the soil must be assessed for Projects applying to Verified Water Credits. The *aOCP Water restoration methodology* document provides specifics on the methodology to be used to assess groundwater recharge and its evolution. The Monitoring report for a project with expected benefits for groundwater recharge shall include the data used and the following results of calculations:

- a) Baseline groundwater recharge, in millimeters;
- b) Water groundwater recharge at the moment of monitoring;
- c) Change in groundwater recharge with respect to the baseline and the last monitoring period.

#### **VI.4.6. CALCULATION OF IMPACTS ON SOIL HEALTH AND EROSION**

Positive effects on soil health and/or in erosion reduction shall be assessed for Projects applying to Verified Soil Credits. The *aOCP Methodology for soil health and erosion assessment* document provides specifics on the methodology to be used to assess soil health and erosion, and changes on them. The Monitoring report for a project with expected benefits for soil health and/or in erosion reduction shall include the data used and the following results of calculations:

- a) Baseline soil health and/or in erosion;
- b) Soil health and/or erosion at the moment of monitoring;
- c) Change in soil health and/or in erosion reduction with respect to the baseline and the last monitoring period.

## VII. ANNEX 1. GLOBAL WARMING POTENTIALS

The IPCC Working Group 1 contribution to the Sixth Assessment Report<sup>7</sup> (2021) provides the GWP used to calculate the equivalence to CO<sub>2</sub> of other GHG. For purposes of the aOCP, the GWP-100 shall be used. The following table is retrieved from page 1017 of the mentioned report.

*Emissions metrics for selected species: global warming potential (GWP), global temperature-change potential (GTP). Source: IPCC, 2021.*

| Species                     | Lifetime (Years) | Radiative Efficiency (W m <sup>-2</sup> ppb <sup>-1</sup> ) | GWP-20      | GWP-100     | GWP-500       | GTP-50      | GTP-100     | CGTP-50 (years)  | CGTP-100 (years) |
|-----------------------------|------------------|---|-------------|-------------|---------------|-------------|-------------|------------------|------------------|
| CO <sub>2</sub>             | Multiple         | 1.33 ± 0.16 × 10 <sup>-5</sup>                              | 1.          | 1.000       | 1.000         | 1.000       | 1.000       |                  |                  |
| CH <sub>4</sub> -fossil     | 11.8 ± 1.8       | 5.7 ± 1.4 × 10 <sup>-4</sup>                                | 82.5 ± 25.8 | 29.8 ± 11   | 10.0 ± 3.8    | 13.2 ± 6.1  | 7.5 ± 2.9   | 2823 ± 1060      | 3531 ± 1385      |
| CH <sub>4</sub> -non fossil | 11.8 ± 1.8       | 5.7 ± 1.4 × 10 <sup>-4</sup>                                | 79.7 ± 25.8 | 27.0 ± 11   | 7.2 ± 3.8     | 10.4 ± 6.1  | 4.7 ± 2.9   | 2675 ± 1057      | 3228 ± 1364      |
| N <sub>2</sub> O            | 109 ± 10         | 2.8 ± 1.1 × 10 <sup>-3</sup>                                | 273 ± 118   | 273 ± 130   | 130 ± 64      | 290 ± 140   | 233 ± 110   |                  |                  |
| HFC-32                      | 5.4 ± 1.1        | 1.1 ± 0.2 × 10 <sup>-1</sup>                                | 2693 ± 842  | 771 ± 292   | 220 ± 87      | 181 ± 83    | 142 ± 51    | 78,175 ± 29,402  | 92,888 ± 36,534  |
| HFC-134a                    | 14.0 ± 2.8       | 1.67 ± 0.32 × 10 <sup>-1</sup>                              | 4144 ± 1160 | 1526 ± 577  | 436 ± 173     | 733 ± 410   | 306 ± 119   | 146,670 ± 53,318 | 181,408 ± 71,365 |
| CFC-11                      | 52.0 ± 10.4      | 2.91 ± 0.65 × 10 <sup>-1</sup>                              | 8321 ± 2419 | 6226 ± 2297 | 2093 ± 865    | 6351 ± 2342 | 3536 ± 1511 |                  |                  |
| PFC-14                      | 50,000           | 9.89 ± 0.19 × 10 <sup>-2</sup>                              | 5301 ± 1395 | 7380 ± 2430 | 10,587 ± 3692 | 7660 ± 2464 | 9055 ± 3128 |                  |                  |

### DOCUMENT HISTORY

| Version | Date       | Comments   |
|---------|------------|--|
| V1.0    | 15/02/2024 | <ul style="list-style-type: none"> <li>Revised version that includes changes to the requirements for the renewal of credits.</li> </ul>                              |
| V2.0    | 02/08/2023 | <ul style="list-style-type: none"> <li>Revised version including changes on the role of the aOCP Operations Team for conducting monitoring and reporting.</li> </ul> |
| V1.0    | 11/01/2023 | <ul style="list-style-type: none"> <li>Initial version released for review by the aOCP Steering Committee under the aOCP Version 1.</li> </ul>                       |

<sup>7</sup> IPCC, 2021: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 2391 pp. doi:[10.1017/9781009157896](https://doi.org/10.1017/9781009157896)