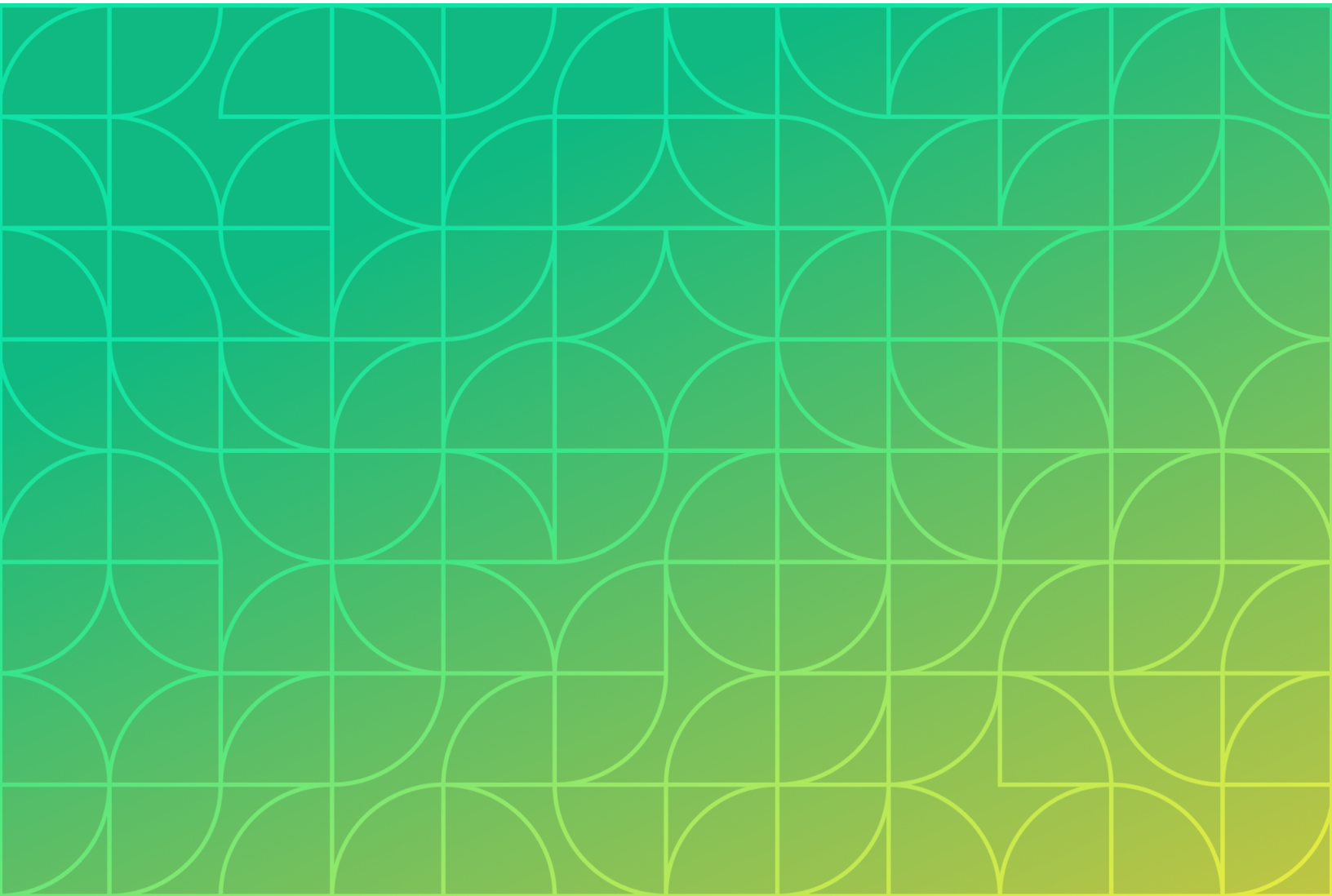


# Athian Governance Framework

2023 | Version 1.1



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## About Athian

At Athian, we are technology experts with farming in our genes. We believe in being good stewards of the economic and environmental health of farms and the communities surrounding them. We use software to aggregate, certify, and fund greenhouse gas reduction plans throughout the entire livestock value-chain, to enable environmental sustainability for animal agriculture.

## Athian's Focus on Insetting

Consumer packaged goods (CPG) companies and retailers are focusing more on reducing emissions within their supply chains to achieve their net zero goals. With supply chain emissions (Scope 3 or insetting will be used interchangeably throughout this document to represent supply chain emissions) often accounting for 90-95% of a food manufacturer's emission footprint. Carbon insetting can have a significant impact on a company's overall sustainability performance by reducing emissions within its value chain and fostering more sustainable practices among its suppliers and partners ([Smith, 2021](#)). An inset crediting program can offer food manufacturers a financially viable and scalable option to achieve their goals while reducing overall emissions throughout the entire supply chain.

The goal of an offset program is to compensate for Greenhouse Gas (GHG) emissions that cannot or have not been eliminated within a company's Scope 1, 2 or 3 (supply chain). They "offset" the pollutants that a company generates either directly (Scope 1) or indirectly (Scope 2 & 3). Offsets are external to a company's value chain.

The goal of Athian's insetting program is to incentivize producers, processors, packagers, retailers, etc. to systematically change operations with the goal of reducing GHG emissions *within* their value chain. Athian will primarily address the Scope 3 emissions category of purchased goods and services.

# Athian Program Standards

## Core Principles

The Integrity Council for the Voluntary GHG Market (ICVCM) has developed [10 Core GHG Principles](#) which set out the key principles for high-integrity GHG credits. Athian is aligning its governance program with these 10 core principles.

Athian's Core Carbon Principles, adapted from the ICVCM 10 Core Carbon Principles, are:

### A. Governance

#### 1. Effective Governance

Athian shall have effective program governance to ensure transparency, accountability, continuous improvement, and the overall quality of GHG claims.

#### 2. Tracking

Athian shall operate as a registry to uniquely identify, record, and track mitigation activities and GHG claims issued to ensure claims can be identified securely and unambiguously.

#### 3. Transparency

Athian shall provide comprehensive and transparent information on all claimed mitigation activities. The information shall be publicly available in an electronic format and shall be accessible to non-specialized audiences to enable scrutiny of mitigation activities.

#### 4. Robust, Independent Third-party Validation and Verification

Athian shall have program-level requirements for robust independent third-party validation and verification of mitigation activities

### B. Emissions Impact

#### 5. Additionality

The GHG emission reductions or removals from the mitigation activity shall be additional, i.e., they would not have occurred, or continued to occur, in the absence of the incentive created by GHG claim revenues.

#### 6. Permanence

The GHG emission reductions or removals from the mitigation activity shall be permanent, or, where there is a risk of reversal, there shall be measures in place to address those risks and compensate reversals.

## 7. Robust Quantification of Emission Reductions and Removals

The GHG emission reductions or removals from the mitigation activity shall be robustly quantified based on conservative approaches, completeness, and scientific methods.

## 8. No Double Counting

The GHG emission reductions or removals from the mitigation activity shall not be double counted, i.e., they shall only be counted once towards achieving mitigation targets or goals. Double counting covers double issuance, double claiming, and double use.<sup>1</sup>

## C. Sustainable Development

### 9. Sustainable Development Benefits and Safeguards

The GHG-crediting program shall have clear guidance, tools, and compliance procedures to ensure mitigation activities conform with, or go beyond, widely established industry best practices on social and environmental safeguards while delivering positive sustainable development impacts.

### 10. Contribution Toward Net-Zero Transition

The mitigation activity shall avoid locking-in levels of GHG emissions, technologies, or carbon-intensive practices that are incompatible with the objective of achieving net-zero GHG emissions by mid-century.

## Public Consultation

In order for Athian to help the livestock industry meet its sustainability goals, it must ensure transparency, accountability, and demonstrate the overall quality of its GHG claims. To that end, Athian will publish its governance program and all validated protocols on its website.

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<sup>1</sup> For more information on Athian's accounting rules GHG claims that originate from the same source within the value chain, see [Athian GHG Claim Scope 3 Accounting & Co Claiming](#)

# Athian GHG Claim Platform

## Platform Overview

Athian is a GHG Claim Platform that enables livestock producers who implement sustainable practices on-farm the ability to earn financial incentives through the sale of GHG claims. Athian's key mission is to help the animal agriculture value chains track and claim GHG reductions generated through producer's sustainability efforts. Athian uses software to aggregate, validate, and certify GHG reductions, then monetizes those reductions through the sale of GHG claims which offer value to the supply chain as important GHG assets related to Scope 3 emissions.

Athian believes that scientific rigor, transparency, and traceability are essential to the credibility of the program. The Athian GHG Claim Platform merges established best practices with technical innovations to develop a program that delivers validated and verified GHG outcomes based on sound scientific methodologies. To ensure scientific rigor, Athian has established a Scientific Advisory Board (SAB) to review potential protocols before they are added to the platform. The SAB also provides recommendations for innovative mitigation, quantification, and verification methodologies.

Athian methodologies and protocols are all grounded by [International Standards Organization \(ISO\) 14064](#), the [Greenhouse Gas Protocol Scope 3 Standard](#), standards as set forth by [Value Chain Initiative](#), the [Integrity Council for the Voluntary Carbon Market](#) and the [Science Based Targets FLAG Guidance](#).

## Platform Scope

The Athian GHG Claim Platform is designed to generate credible, quantifiable, and auditable GHG reductions, removals, and avoidances. Athian will employ methodologies to meet its objective to incentivize producers, processors, packagers, retailers, etc. to systematically change operations with the goal of reducing GHG emissions *within* their value chain and generate credible GHG claims.

Athian will establish standard methodologies for all interventions that are added to the program, while allowing for innovation and continual improvement. Consistent and repeatable processes for data collection, quantification methodologies, and verification processes will be established in the Athian platform based on the methodologies described in this document.

## Supply Shed

Athian will leverage the concept of a Supply Shed to provide traceability for any Scope 3 claims. In the Athian Platform, Supply Shed refers to a group of suppliers in a specifically defined market providing functionally equivalent goods or services (commodities) that can be demonstrated to be within the company's supply chain. [\[Adapted from VCI 1.1 Guidance\]](#)

For the dairy industry, an example of a supply shed would be a group of producers (suppliers) that provide milk (a functionally equivalent good) to a group of processors in a specific geographic region (market) that supply milk and milk products to specific consumer packaged goods companies (the supply chain).

## GHG Global Warming Potential

All GHG emission reductions will be converted to mtCO<sub>2</sub>e using 100-year global warming potential (GWP) values and are based on [IPCC Global Warming Potential Values](#).

GHG	Chemical Formula	GWP AR6
Carbon Dioxide	CO <sub>2</sub>	1
Methane (fossil origin)	CH <sub>4</sub>	29.8
Methane (non fossil origin)	CH <sub>4</sub>	27.2
Nitrous Oxide	N <sub>2</sub> O	273

## Acceptable Intervention Types

Athian will accept into its platform protocols that mitigate the environmental footprint of animal agriculture, with a focus on dairy and beef operations. Types of mitigations we may consider are outlined below:

### A. Enteric Methane

1. Diet Management (including feed additives)
2. Genetic Innovation
3. Herd Management

### B. Manure Methane

1. Anaerobic Digestion (includes manure and co-digestion of food waste)
2. Reduction of Liquid in a Lagoon
3. Liquid Solid Separation
4. Manure Storage (cover & flare)

## Definitions of Program Concepts

These concepts set the base requirements for all protocols to be considered for inclusion into the Athian platform.

**Additionality:** Athian approved interventions are considered additional if they are reducing emissions in the production of a consumer good within the value chain. In the absence of said intervention, supported by a financial incentive, GHG emissions would be greater.<sup>2</sup>

**Causality:** Causality is the demonstration that an investment (or other equivalent action) of a company or group of companies acting collectively is what caused the intervention to happen or continue to happen.<sup>2,3</sup>

**Baseline Scenario:** A hypothetical scenario for emissions that is predicted or assumed to occur in the absence of the incentives created by the GHG credits and their associated mitigation activities, while holding all other factors constant.<sup>2,4</sup>

**Baseline Emissions:** Baseline emissions in the Athian GHG Claim Platform is the metric used to quantify emissions without the intervention.<sup>4</sup>

**GHG Assessment Boundary (Sources and Sinks):** The GHG assessment boundary in the Athian GHG Claim Platform is used to identify the sources, sinks, and reservoirs (SSRs) of GHG emissions that are associated with a specific intervention. Athian will require all protocols to include the GHG SSRs that must be evaluated by protocol developers to determine the net change in GHG emissions resulting from the project.<sup>4</sup>

**Absolute and Intensity Emissions Quantification:** The Athian GHG Claim Platform will generate GHG claims based on intensity and absolute calculations. GHG claims based on intensity calculations can be applied towards intensity targets. All GHG claims generated based on an absolute or intensity calculation will be expressed as a mtCO<sub>2</sub>e.

**Permanence:** Permanence in the Athian GHG Claim Platform will be considered on an intervention-by-intervention basis to determine if relevant. Relevance will need to be defined by the Protocol.

**Leakage:** Leakage in the Athian GHG Claim Platform will be considered on an intervention-by-intervention basis to determine if relevant. Relevance will need to be defined by the Protocol.

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<sup>2</sup> Adapted from the [Value Chain Initiative](#)

<sup>3</sup> Supported by [SBTI FLAG Guidance](#)

<sup>4</sup> Adapted from [GHG Protocol Scope 3 Standard](#)

# Roles & Responsibilities

## Standard Authority and Administrative Bodies

Direct oversight is provided by Athian's Board of Directors and Executive Team. The Board is responsible for advising Athian's strategic direction; they oversee business operations and assist with the funding process.

### Role of the Athian Board of Directors

Athian believes that for the livestock industry to meet its climate goals, it will take the entire industry working together to develop solutions. Athian was initially funded by five strategic investors that represent leaders in the livestock industry: Elanco Animal Health, Newtrient, DSM-Firmenich, Tyson Ventures, and California Dairies (CDI). Each company is a thought leader in addressing sustainability for the livestock supply chain.

The Athian Board of Directors includes three voting directors; one from Athian, High Alpha Innovation, and Newtrient. In addition, there are three board observers, from Elanco, DSM-Firmenich, and CDI, who all serve in a "pre-competitive" role for the company. The function of the Athian Board of Directors is to provide industry expertise, credibility, validation, and strategic partnerships. In addition, the Board oversees and advises the company's business operations and fundraising strategy.

Athian's Board of Directors provide:

- **Industry Expertise:** Valuable insights and guidance to help Athian navigate industry specific challenges.
- **Network and Connections:** Open doors to potential customers, partners and other key stakeholders.
- **Credibility and Validation:** Demonstrates support of the industry in Athian's approach to building a carbon claim marketplace.
- **Strategy and Oversight:** Advise on business operations, compliance, and strategy.

## Athian Scientific Advisory Board Charter

### Role of the Athian Scientific Advisory Board

The decisions around the validity of scientific methodologies of the protocols within the Athian GHG Claim Platform are made by Athian's Scientific Advisory Board (SAB). The Athian SAB is comprised of a diverse group of qualified members with significant expertise in GHG emissions related to the livestock industry. They provide science-based recommendations to Athian, spanning all aspects of the dairy and beef industry. All approved protocols in the Athian GHG Claim Platform must be science based and approved by Athian's Scientific Advisory Board (SAB).

## Scope of the Athian Scientific Advisory Board

The decisions around the validity of scientific methodology for acceptable protocols within the Athian GHG Claim Platform are made by Athian's SAB who suggest new interventions and review proposals for protocols. The SAB is responsible for reviewing and approving the scientific basis of any intervention Athian accepts into its platform.

## Relevance and Acceptability of Supporting Studies

The SAB will assess the validity of a scientific methodology submitted to them for review by determining if an adequate number of scientific studies and peer-reviewed articles have been conducted to ensure the validity of the greenhouse gas (GHG) reduction methodology. The threshold of required scientific studies and peer reviewed articles can vary depending on several factors, including the complexity of the methodology and the level of consensus within the scientific community.

Athian's minimum requirement is 3 peer-reviewed publications in reputable journals, however, exceptions are made at the discretion of the SAB under the following key considerations.

- **Consensus and Repeatability:** A single study, no matter how rigorous, may not be sufficient to establish the validity of a GHG reduction methodology. It is important to look for consensus among multiple studies conducted by different researchers or research groups. Additionally, the methodology should be repeatable and yield consistent results across different experiments.
- **Quality of Studies:** The quality of the studies is crucial. Look for studies published in reputable peer-reviewed scientific journals known for their rigorous review processes. High-quality studies typically include detailed methodologies, transparent data, statistical analyses, and robust conclusions supported by evidence.
- **Replication:** Independent replication of results strengthens the validity of a GHG reduction methodology. If multiple research groups or institutions have successfully replicated the findings, it adds credibility to the methodology.
- **Holistic Assessment:** Consider a range of evidence beyond individual studies. Look for systematic reviews, meta-analyses, or comprehensive assessments that analyze and synthesize multiple studies on the same methodology. These types of studies provide a broader perspective and can help identify consistent trends or patterns.
- **Expert Consensus:** Expert opinions and consensus statements from professional scientific organizations or panels can also carry weight. These consensus statements are often based on a comprehensive review of the available evidence and can provide valuable guidance on the validity of a GHG reduction methodology.

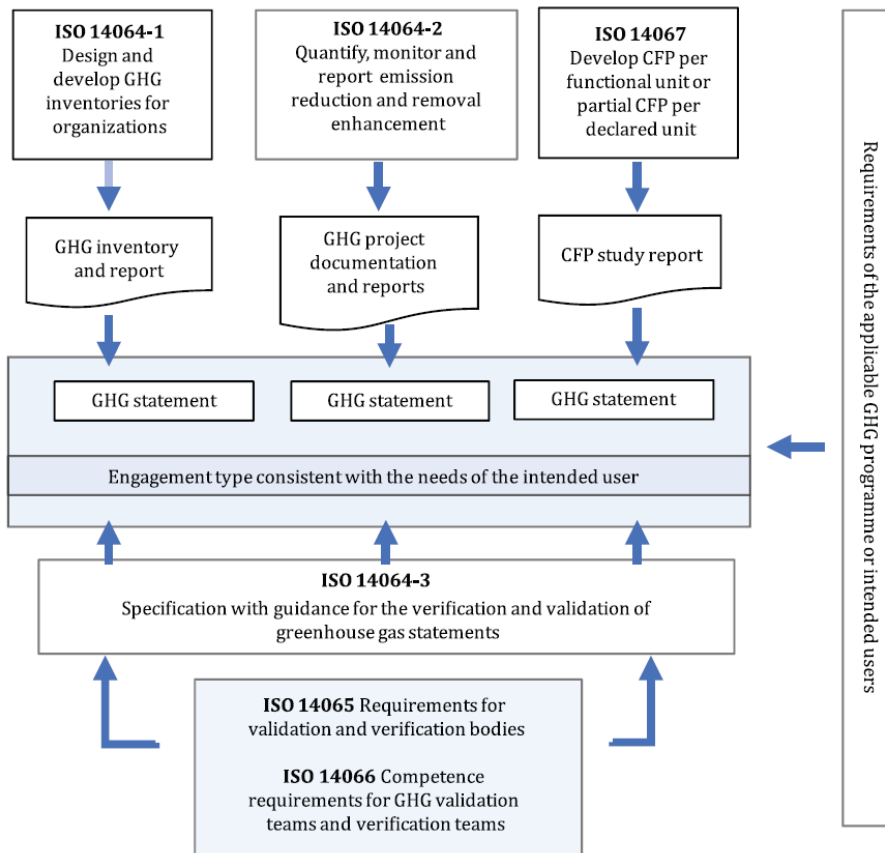
Ultimately, the adequate number of studies and articles required to establish the validity of a GHG reduction methodology will be determined by the SAB and depends on the specific context and the weight of the evidence available.



<b>Role</b>	<b>Responsibility</b>
<b>Producers</b>	Entities or individuals responsible for implementing sustainable practices and demonstrating on-farm emissions reductions. They utilize the Producer Interface to launch, track, and provide data for such interventions. Once a certified reduction is claimed and purchased on the marketplace, Producers are paid for their efforts.
<b>Technology Providers</b>	Entities or organizations offering technological solutions and services to support carbon projects and reduce emissions at the Producer level.
<b>Producer Interface</b>	Online portal, owned by Athian, that serves as the information center for Producers that wish to engage in a Scope 3 program in the livestock sector. Additionally, the Producer Interface holds all approved protocols and contact information for Technology Providers and Project Consultants.
<b>Technical Consultants</b>	Experts offering advisory and technical services to producers, aiding in project implementation, compliance with protocol guidelines, data collection, practice implementation, and monitoring. They are retained and paid by Producers.
<b>Data Trust</b>	A trusted entity securely managing project data, ensuring integrity, proper distribution of the Digital MRV software, and accessibility for stakeholders.
<b>VVB Interface</b>	Online portal, owned by Athian, that serves as the information center for VVBs conducting verification engagements with Athian. The VVB Interface allows verifiers to review data collected in the data trust from producers, GHG quantification tools and audit results.
<b>GHG Quantification Calculators</b>	GHG quantification tool that leverages on-farm data to measure and quantify baseline and project outcomes in accordance with approved protocols
<b>Digital MRV</b>	Use of digital technology for greenhouse gas measurement, reporting, and verification, enhancing accuracy and transparency. Utilizes data within the Data Trust and accessible by VVBs through the VVB Interface for use during verification.
<b>Reporting Platform</b>	Centralized repository for comprehensive records of carbon inset activities, promoting transparency and accountability. Reports are attached to the serialized credits and stored in the System of Records.
<b>System of Records</b>	Centralized repository that stores comprehensive records of carbon inset ownership and associated reports.
<b>Off-Take Partners</b>	Businesses or organizations purchasing carbon credits to reduce their carbon inventory, meet sustainability goals, and support emission reduction projects within their supply shed.
<b>Public Interface</b>	Publicly available database, owned by Athian, that promotes transparency and accountability by publishing certain information from the Data Trust, such as approved protocols and credits sold.
<b>AVSA</b>	Athian Verified Sustainability Asset. The GHG reduction claim generated through the Athian Platform.

## Validation & Verification Bodies

All VVBs must meet Athian's credentialing requirements in order to perform the verification and validation functions in the Athian GHG Claim Platform. Athian approved VVBs must meet the competency requirements laid out in ISO 14065:2020 and be accredited or working towards accreditation by the ANSI National Accreditation Board (ANAB).



## VVB Requirements

Athian will verify the VVBs meet the following requirements:

- Has obtained or is working towards ISO 14065 for Greenhouse Gas activities accreditation offered under the ANSI-GS Accreditation Program
- Subject matter expertise in the on-farm operations related to an approved protocol (ex: Dairy Operations; Feedlot Operations)
- Experience in a particular region or state where the verification will occur
- Complete onboarding in the Athian Platform
- Conduct monitoring in accordance with the requirements of the relevant protocol

## List of Approved VVBs

Athian will maintain a current list of Athian approved VVBs in the Athian GHG Claim Platform and will assign VVBs to validate protocols and verify on-farm interventions. Assignments will be based on the VVB's level of expertise as it relates to a particular protocol or regional expertise as it relates to the farm's location.

# Registry

## Athian Platform and Claim Generation

In order for a protocol to be approved in the Athian platform, it must first be vetted by the SAB, then reviewed by an accredited VVB against ISO 14064-2 Standards. Claims are created once a producer has implemented an Athian-approved protocol through the Athian Producer Interface. Athian then collects on-farm data and data from GHG calculators to determine the impact of an implemented intervention. The impacts are then verified by an Athian-approved VVB through the VVB User Interface. Once verified, Athian aggregates the on-farm data, quantification data, and verification data to generate a verified claims report. Athian then records the claims in the system of record, recording the originator, supply shed, and number of metric tonnes (mt) associated with the claim. Purchasers (off-take partners) are then able to access reports and aggregated claim data through the Buyer Interface.

## Claim Certification

Athian will engage third-party Validation and Verification Bodies (VVBs) to determine if protocols are in compliance with [International Organization of Standardization's ISO 14064-2](#) (specifications and guidance at the project level for quantification, monitoring, and reporting of greenhouse gas emission reductions or removal enhancements).

Each implementation of a protocol (i.e. intervention) will require verification by an Athian approved, independent, third-party verifier. The verifier determines if each producer has implemented the intervention in accordance with the requirements of the protocol and if the value of the reduction is quantified in accordance with the protocol. Once validation of a protocol and verification of a quantified reduction have been completed, a claim can be certified, recorded in the Athian System of Record, and offered for sale on the Athian Marketplace.

## GHG Claim Scope 3 Accounting Ledger

Athian will track GHG claim accounting for the AVSAs purchased on its marketplace. Once purchased, the AVSA will be registered with the purchaser(s).

Athian's credit accounting ledger will prohibit [\[Adapted from the ICVCM 10 Core GHG Principles\]](#):

- Double issuance; we will prohibit the ability for a “claim” to be issued on any other registry or be part of any other program.
- Double-claiming an inset for the same mitigation activity.<sup>5</sup>
- Boundary overlap between mitigation activities if the overlapping boundaries have not been addressed in the protocol.

## Athian GHG Claim Scope 3 Accounting & Co-Claiming

Athian will allow for, and track, reductions to support co-claiming along the value chain when two or more entities in the same value chain are benefiting from a reduction from the same producer or group of producers. In order for two or more entities to co-claim within the same value chain, each co-claimant either needs to contribute financially to the purchase of AVSAs or a documented in kind contribution. We will allow for co-claiming across retailers and CPG's, allocated by the amount of physical product they purchased.

Athian will apply the concept of a Supply Shed whenever directly tracing the source to a specific supplier is not possible. For example, in milk production and beef production. The concept of Supply Shed will also be used to allocate “claims” for emissions reductions within the supply chain based on the amount of emissions-reduced product available within the supply shed.

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<sup>5</sup> Double-claiming occurs when a credit is generated for a project and another actor outside of the value chain also claims the same reduction. Co-claiming within the value chain is inherent to Scope 3 emissions and is not prohibited in the Athian platform.

# Protocol Standards

## Accounting Principles

Athian reporting and accounting principles are based on the following GHG accounting and reporting principles [[Adapted from ISO 14064-2 Principles](#)], and apply to all protocols and interventions validated and verified in the Athian GHG Claim Platform:

**Relevance:** All Greenhouse Gas interventions assessed in the Athian GHG Claim Platform shall appropriately reflect the GHG fluxes of the producer and serve the decision-making needs of users – both internal and external to the producer.

**Completeness:** Athian shall account for and report on all GHG emission sources and activities within a defined boundary, to the extent practicable and relevant to the purpose of the adherence to approved Athian protocols. Any specific exclusions shall be disclosed and justified.

**Consistency:** Athian shall use consistent methodologies within the defined claiming period, as defined in Athian approved protocols, to allow for meaningful performance tracking and comparison of GHG flux data over time, business units, geographies, and suppliers.

**Transparency:** Athian shall address all relevant issues in a factual and coherent manner, based on a clear audit trail. Athian shall also disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.

**Accuracy:** Athian shall ensure that estimates of GHG fluxes are as accurate as possible and that they are not systematically over or under actual fluxes, as far as can be judged. A level of accuracy is needed that will allow users to make decisions with reasonable confidence as to the integrity of the reported information.

## Eligible Sectors

Athian supports intervention based GHG reduction efforts specific to the animal agricultural sector within the food value chain. Athian will accept into its platform protocols that mitigate the environmental footprint of animal protein production in the United States, Brazil, Europe, Australia, and New Zealand as long as there are no regulatory prohibitions for such activities.

## Protocol Development & Acceptance

All Athian interventions in the Athian GHG Claim Platform will have defined protocols for quantifying GHG emission reductions and removals. These protocols provide a consistent, standardized approach for producers to implement GHG interventions and for VVB's to assess the results of their efforts. This consistency, structure, and standardization facilitates the scale and volume needed to achieve the GHG reduction goals of the Livestock Industry.



In order to be added to the Athian GHG Claim Platform, protocols must complete the following process:

1. **Outline Submission:** Intervention Proponents will submit an overview of a possible protocol to Athian.
2. **Outline Review:** Athian will review to determine if the suggested protocol meets the requirements for the Athian program. If the suggested protocol meets Athian eligibility criteria, the Intervention Proponent will draft a “Proposal for Protocol” to be submitted to the SAB. The “Proposal for Protocol” requirements are outlined below.
3. **Scientific Review:** The SAB will review a “Proposal for Protocol” to determine if the science supporting the proposed protocol is credible. The SAB will evaluate for:
  - a. **Executive Summary:** Overview of why this intervention will have a positive impact on GHG emissions within the supply chain.
  - b. **Eligibility:** Description of what livestock operations are eligible to participate in this protocol, what regions are applicable, and any other qualifying criteria.
  - c. **Causality:** Demonstration that an investment (or other equivalent action) of a company or group of companies acting collectively is what caused the Intervention to happen. Define how causality will be determined for this protocol.
  - d. **Implementation Barriers:** Define how the intervention will remove barriers to reducing emissions within the value chain.
  - e. **Permanence & Leakage:** Address permanence & leakage, and supporting science, if applicable. Describe if there is a risk of reversals and if so, how would it be mitigated.

- f. **Emissions Boundaries:** Clearly defined boundaries used in the quantification.
  - g. **Brief Methodology:**
    - i. Describe if the calculations are absolute or intensity based.
    - ii. Ensure the research is current and relevant to supply chain conditions.
    - iii. Provide the actual calculations to be used to quantify the impact of this intervention on GHG emissions and ensure the methodology supports the expected results and is based on the references cited.
    - iv. Describe any uncertainty in the data and how to mitigate risks.
  - h. **References:** Any studies, articles, publications, or other supporting literature.
4. **Draft Protocol:** Intervention proponents will draft a protocol in accordance with Athian’s governance program standards.
  5. **Protocol Review:** Athian reviews the protocol to ensure it is in compliance with Athian’s protocol requirements.
  6. **Validation Review:** Protocol is reviewed for compliance with ISO 14064-2 by an accredited third-party validator.
  7. **Piloting:** The protocol is piloted in the Athian platform by an Athian selected group of producers and VVBs. Piloting allows Athian to pressure test new protocols before scaling them out to a large number of producers.
  8. **Verification Review:** The third-party verifier reviews the results to verify that protocol requirements were met and the reduction was quantified accurately.
  9. **Cataloging:** The protocol is added to the catalog of fully piloted protocols and made available for public review.
  10. **Protocol Rollout:** The protocol is made available to all applicable producers in the Athian platform.
  11. **Annual Review:** The protocol is reviewed by the SAB on an annual basis to determine if the science supporting the methodologies is still sound.
  12. **Continue, Revise or Retire Protocol:** The protocol is either continued, revised and re-validated, or retired. Protocol version numbers are updated in the Athian platform, if applicable.

## GHG Assessment Boundary

Each protocol must identify the GHG sources and sinks and reservoirs (SSRs) that will be considered in quantifying GHG reductions. Protocols are required to identify the primary effects which are specific changes in GHG emissions that an intervention is designed to achieve and secondary effects which are the result of unintended changes in GHG emissions elsewhere. The GHG assessment boundary must encompass all these effects. SSRs are only included in the GHG Assessment Boundary if the intervention will have a significant effect on their associated GHG emissions or removals ([GHG Protocol for Project Accounting, 2005](#)).

## Baseline Requirements

Baseline emissions are an estimate of GHG emissions or removals that would have occurred in the absence of an intervention. Athian requires a standardized baseline methodology which is used consistently to determine the baseline for each producer implementing a specific protocol.

## Quantifying Protocol Emissions

Quantification of protocol GHG emissions should leverage as much actual, on-farm data as possible. For SSRs where direct or indirect measurements are too costly or infeasible, protocol GHG emissions may be estimated using defined assumptions or models. Protocols must use conservative assumptions and/or parameter values that will tend to underestimate, rather than overestimate, total GHG reductions and removals.

Athian Verified Sustainability Assets (AVSAs) are calculated as the difference between baseline emissions and post-protocol implementation emissions month-over-month and are expressed as mtCO<sub>2</sub>e.

The formula for calculating reductions is:

$$\text{GHG Reductions} = \text{Post Protocol Implementation Emissions} - \text{Baseline Emissions}$$

## Protocol Monitoring

Each protocol must have a monitoring plan established for all monitoring and reporting activities associated with a specific intervention. Athian will work with protocol developers and applicable verifiers to design a monitoring plan. The monitoring plan is the basis for verification bodies to confirm that the monitoring and reporting requirements in each protocol have been met and that consistent, rigorous monitoring and record-keeping is ongoing for each implemented intervention. The plan will be reflected in the Athian platform as tasks that must be completed by producers and verifiers for each protocol.

Athian's monitoring plans must include the requirements for monitoring and reporting for each protocol and must detail how all data elements will be collected and recorded. Each protocol is required to outline in a table the data elements that must be monitored and how data for each element is obtained (e.g., measurement, calculation, approved references or operating records).

At a minimum, Athian's monitoring plans will detail the frequency of data acquisition and a record keeping plan. Athian monitoring plans will include QA/QC provisions to ensure data quality.

## Summary of Protocol Requirements

1. Protocols must be evaluated for compliance with ISO 14064-2 (Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements)
  - a. Must identify sources, sinks and reservoirs (SSRs)
  - b. Must determine a GHG baseline.
  - c. Must identify SSR to the baseline.
  - d. Must select relevant SSR for monitoring or estimation.
  - e. Must quantify GHG emissions.
  - f. Must quantify emissions reductions or removals in terms of mtCO<sub>2</sub>e or convertible unit of measurement.
2. Protocols must have defined boundaries for applicability of a specific intervention.
3. Protocols must include baseline emission estimates.
4. Protocols must include monitoring requirements.
5. Protocols must include methods on how to conduct measurements, what kinds of estimates are acceptable, and what calculation formulas must be used.
6. Protocol monitoring data must be provided to Athian in accordance with intervention protocol requirements.
7. Protocols must address causality and define how an investment (or other equivalent action) of a company or group of companies acting collectively is what caused the Intervention to happen for each specific intervention.

## Quantification Tools and Methodologies

The Athian GHG Claim Platform will leverage quantification tools provided to quantify on farm emissions, in accordance with the quantification methodology outlined in the applicable protocol. All quantification tools must be validated on an annual basis for compliance with the quantification methodologies for the protocols the tool supports.

## Maintenance and Periodic Review of Approved Protocols

All approved protocols will be cataloged in the Athian GHG Claim Platform with an SAB approval date and version number. On an annual basis, protocols will be reassessed by the SAB to determine if the quantification methodology or the underlying science is still sound, reasonable, and credible. If the science is deemed to no longer be credible by the SAB, the protocol will either be updated or revised with methodologies and given a new version number or retired completely.