



PEAC

White Paper

**Programme for
Environmental Attribute
Certificates**

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Prepared by:

Promethium Carbon

The Courtyards, Block 2, 1st Floor
32 Peter Place, Bryanston, South Africa
PO Box 131253, Bryanston, 2021
<https://promethium.co.za/>
Tel: +27 11 706 8185
Reg No: 2005/018622/07
Directors: RT Louw, HJ Swanepoel

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1 Introduction

This White Paper introduces the **Programme for Environmental Attribute Certificates Non-Profit Organisation (PEAC)**, a framework designed to enhance environmental sustainability through the issuance and management of **Environmental Attribute Certificates**. These certificates support projects that significantly mitigate environmental damage and encourage sustainable practices across various sectors. The PEAC provides a central platform for environmental certification, focusing on the efficient and transparent management of data and processes to facilitate these projects.

The document is structured to detail the strategic objectives, operational procedures, and governance principles underpinning the PEAC. It provides detail on the types of environmental credits managed, the advanced technological infrastructure that supports programme operations, and the comprehensive governance frameworks that uphold accountability and effectiveness. Furthermore, it addresses the challenges faced by the programme and outlines innovative solutions that have been implemented to overcome these obstacles.

The PEAC primarily aims to enhance access to environmental attribute certifications, opening up opportunities for more entities to engage with environmental attribute markets. This is achieved by reducing barriers to entry and simultaneously improving the environmental integrity of the system. PEAC's strategy ensures broader access to these markets, fostering a more inclusive approach while maintaining stringent oversight to ensure the credibility and efficacy of the certifications issued.

The PEAC is designed to serve as a versatile platform that supports a variety of environmental attribute certification programmes. These programmes may either operate under the direct oversight of the PEAC, or operate as independent entities aligned with the programme's requirements. This flexibility allows the PEAC to accommodate a wide range of environmental initiatives.

Building on its foundational goals to reduce barriers, enhance access, and maintain high environmental standards, the PEAC builds on recent technological advancements to streamline the certification process and issuance of credits. This unique proposition involves the use of new technologies such as AI and IoT. The technological platform aims to significantly reduce the time required for certification. By integrating these technologies, PEAC not only accelerates the operational processes but also ensures the accuracy and transparency of the data, enabling quicker access to environmental finance markets. This technological leverage is crucial in providing a faster, more efficient path for participants seeking certification and credit issuance, aligning with PEAC's commitment to improving accessibility and integrity within the system.



2 Mission and Objectives

The PEAC is dedicated to fostering global environmental sustainability by providing a robust and adaptable platform for the certification of environmental attributes. The primary mission of PEAC is to enhance the efficiency and accessibility of environmental certification processes through advanced technological solutions, thereby contributing to the promotion of sustainable practices worldwide.

2.1 MISSION STATEMENT

PEAC's mission is to significantly reduce the barriers to entry to participation in environmental markets by providing a high-integrity, state-of-the-art interactive platform. By leveraging advanced technologies, PEAC aims to streamline access to environmental markets and make them more accessible to a wide range of stakeholders, from large-scale industrial projects to smaller community initiatives.

2.2 OBJECTIVES

PEAC's objectives are:

1. **Technological Innovation:** Utilize advanced technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), and Machine Learning (ML) to reduce administrative burden and cost while enhancing the accuracy, efficiency, and transparency of data collection, processing, and reporting. This integration aims to minimize human error, reduce operational costs, and improve overall data reliability.
2. **Inclusivity and Accessibility:** Significantly increase access to environmental certification by lowering barriers to entry. This includes providing support for smaller projects and entities from underrepresented regions or communities, ensuring that they can participate fully in the environmental markets.
3. **Open Source Nature:** Foster a vibrant open source community to drive continuous improvement and innovation. By encouraging contributions from a diverse range of stakeholders, including developers from participating programmes and independent contributors, PEAC leverages collective expertise to enhance transparency, security, and adaptability of the platform. This approach ensures the platform remains at the forefront of technology, reduces development costs, and accelerates the evolution of environmental certification processes.
4. **Scalability and Adaptability:** Develop a flexible platform that can adapt to the evolving needs of different environmental programs and standards. This involves creating reusable methodology modules and facilitating easy integration and customization for various types of environmental projects.
5. **Stakeholder Engagement and Collaboration:** Foster active engagement and collaboration with a broad range of stakeholders, including government agencies, non-governmental organizations, industry experts, and local communities. This



ensures that PEAC's processes are informed by diverse perspectives and that the platform remains relevant and effective.

6. **Transparency and Accountability:** Maintain high levels of transparency in all operations and decision-making processes. This includes making data and reports publicly accessible, establishing clear protocols, and implementing robust accountability mechanisms.
7. **Continuous Improvement:** Commit to ongoing enhancement of the platform's capabilities and methodologies based on the latest scientific findings and technological advancements. This ensures that PEAC remains at the forefront of environmental certification and continues to provide value to its stakeholders.

By adhering to these objectives, PEAC aims to set a benchmark in environmental certification, providing a reliable, efficient, and inclusive platform that supports global efforts in environmental sustainability and climate change mitigation.

2.3 PROGRAMME DESIGN

2.3.1 Foundational Framework

The PEAC is structured to serve as a foundational platform for a variety of environmental attribute certification programmes, ensuring its adaptability and responsiveness to the fast-evolving needs of this field. Central to this framework are two foundational pillars:

- **Technology Platform:** The technology platform of PEAC plays a central role in providing accessible, low-cost support to all Participating Programmes. It facilitates the development and updating of programmes and methodologies, enhancing the efficiency and scalability of operations, and reducing barriers to entry in environmental markets. This technology backbone supports a wide range of functionalities from user registration to project management, methodology implementation, and new methodology development, ensuring that all programmes can leverage advanced tools to improve their operational effectiveness.
- **Open Source Community:** PEAC fosters a vibrant open source community to drive continuous improvement and innovation. By encouraging contributions from a diverse range of stakeholders, including developers from participating programmes and independent contributors, PEAC leverages collective expertise to enhance the platform's transparency, security, and adaptability. This collaborative approach ensures the platform remains at the forefront of technology, reduces development costs, and accelerates the evolution of environmental certification processes.

By focusing on these pillars, PEAC provides a structured yet flexible environment that enables environmental attribute certification programmes to enter the market with reduced barriers to entry and a significantly reduced cost base.



2.3.2 Governance

The principles of governance of the PEAC are designed to uphold the highest standards of integrity, transparency, and efficacy in its role as a technical platform provider. This governance framework is essential for ensuring that the PEAC operates with a clear division of responsibilities. Corporate governance, which encompasses strategic oversight, policy setting, and ensuring compliance with regulatory requirements, is handled by the Board of Directors. This board is responsible for the overall direction and long-term sustainability of PEAC.

The operational management of the technical platform is the responsibility of the Secretariat. The Secretariat oversees the day-to-day operations, implementation of technological innovations, user support, and the maintenance of the platform's infrastructure.

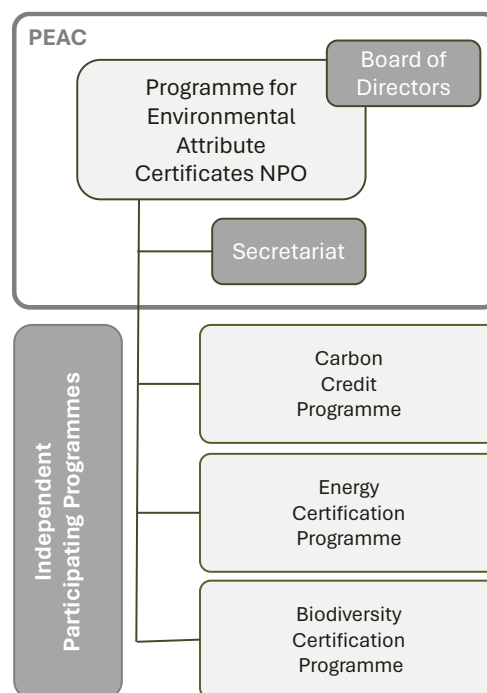


Figure 1: PEAC Governance Structure

This clear separation of roles ensures that strategic decisions are made independently from operational activities, fostering a robust governance structure that supports transparency and accountability at all levels of the organization.

The Governance Framework Principles of the PEAC are:

- **Integration and Independence:** Each participating programme within PEAC operates independently but aligns with PEAC's overarching principles. This structure ensures that programmes can tailor their operations to address specific environmental impacts effectively.
- **Transparent and Credible Operations:** The governance framework of PEAC emphasizes transparency and credibility. The platform supports clear, accessible information on the issuance, transfer of ownership, and retirement of credits by providing access to independent registries. This transparency is critical for facilitating market access and ensuring trust among stakeholders.
- **Facilitation of Market Access:** By enforcing robust governance processes, PEAC enhances trust among stakeholders and promotes greater accountability. The platform provides clear, accessible information on the issuance, transfer, and retirement of credits, ensuring that all transactions reflect actual environmental gains.



- **Open Source Community:** The open source nature of the PEAC platform fosters a collaborative environment where contributions from a diverse range of stakeholders, including developers from participating programmes and independent contributors, drive continuous improvement and innovation. This open source model ensures that the platform remains transparent, adaptable, and secure, benefiting from peer review and the collective expertise of the global community.

The governance framework of PEAC not only supports the operational integrity of the system but also enhances its adaptability and responsiveness to the fast-evolving global landscape of environmental certification. This is achieved through the technology platform that supports the issuance, management, and tracking of environmental certificates, ensuring that the system can efficiently scale and adapt to new challenges.

2.3.3 PEAC Platform

The Information Technology (IT) platform of the PEAC is central to the offering of the PEAC Programme. The PEAC Platform is designed to manage data collection, storage, and processing, supporting a variety of participating environmental certification programmes. It facilitates methodology development and programme participation, essential for operational functionality across different programmes such as, but not limited to the carbon emission reduction programmes, plastic credit programmes, and biodiversity credit programme. The Platform handles methodologies, project documentation, and monitored data, ensuring structured management and oversight of these components. The ultimate goal of the PEAC Platform is to automate the processes around the issuance of environmental attribute certificates in a way that can significantly reduce the cost of issuance, while contributing constructively to increasing the environmental integrity of such environmental attribute certificates.

2.3.4 Participating Programmes

The PEAC will provide a platform that will allow an ecosystem consisting of a variety of independent environmental attribute programmes. These programmes may address specific environmental impacts through the issuance and management of different types of environmental attribute certificates. This could, for example, include but will not be limited to carbon credit programmes, energy certification programmes, and biodiversity certification programmes.

Participating Programmes will need to meet certain minimum criteria before being onboarded onto the PEAC Platform, as well as on an ongoing basis. Each Participating Programme will be responsible for its own environmental integrity, as well as its own accreditations and recognition. The requirements are:

- **Independent Governance and Oversight:** Each Participating Programme must establish its own governance framework, including independent bodies responsible



for maintaining environmental integrity. This separation between operational management and environmental oversight ensures unbiased decision-making and credibility.

- **Stringent Verification and Validation Protocols:** Participating Programmes must employ rigorous verification and validation protocols in line with international best practices.
- **Accredited Third-Party Auditors:** Participating Programmes must engage accredited third-party auditors to conduct independent audits of all environmental attribute certificates. These auditors must follow internationally recognized standards to certify the environmental claims of each project.
- **Comprehensive and Transparent Documentation and Reporting:** Participating Programmes must require all projects to submit detailed documentation, including project design documents and monitoring reports. The Participating Programmes must provide templates and guidelines to ensure consistency and comprehensiveness in reporting.
- **Stakeholder Engagement and Transparency:** Participating Programmes must maintain open communication with stakeholders, including public access to validation and verification reports. This transparency builds trust and confidence in the certifications issued.
- **Ongoing Review and Improvement:** Participating Programmes must commit to continuous improvement of their methodologies and processes. Regular reviews and updates will be conducted to incorporate the latest scientific findings and technological advancements.

By meeting these requirements, Participating Programmes can ensure their operations align with the high standards expected within the PEAC ecosystem, while independently managing their environmental integrity and accreditation processes.



2.3.5 Independent Registry

The PEAC does not offer registry services. This is to stay consistent with the principles of separating issues related to the environmental integrity of the environmental attribute certificates from the commercial aspects. This principle of separation of these issues is central to the PEAC approach to guaranteeing environmental integrity.

The PEAC will enter into a relationship with an independent registry provider. The registry services provided in this relationship will link directly to the Participating Programmes in the PEAC.

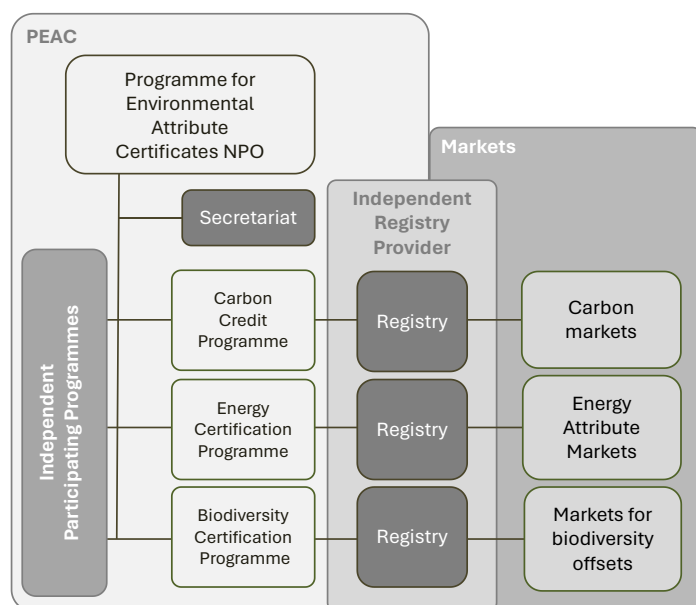


Figure 2: Independent Registry

2.4 COMMERCIAL OPERATION

The PEAC is a not for profit organisation. It does however need to be financially viable in order to attain long term sustainability. In this respect the long term roadmap of the PEAC is:

1. **Initiation Phase:** The contribution required is provided by Promethium Carbon. This includes the formation of the Non-Profit Organisation (NPO), the drafting of the initial documents and the funding of the coding for the proof-of-concept of the PEAC Platform
2. **Pilot Phase:** This phase will start when the Proof of Concept (PoC) is available. During this phase, we will apply for grant funding to speed up the development.
3. **Going Live:** Once there are active users on the PEAC Platform, the users will be charged a fee for the use of the Platform. The purpose of the fee would be to cover operating costs and maintenance. This is not intended to fund the expansion and scaling up of the Platform.
4. **Scaling:** The PEAC NPO will make a constant effort to source grant funding for the expansion and scaling up of the operations.



3 Structure

3.1 OVERALL STRUCTURE

The PEAC is structured to ensure comprehensive governance and management of various environmental certification programmes in a way that will ensure the integrity of the programmes. The organisation is designed to operate through a centralised infrastructure overseeing corporate governance and the technology platform, while facilitating decentralised governance to uphold environmental integrity across the individual programmes.

- **Centralised infrastructure:**
 - **Corporate Governance:** At the top of the organisational structure is the Board of Directors, responsible for overarching governance and strategic direction. The board ensures that the NPO adheres to its mission and oversees the implementation of its programmes and initiatives.
 - **Secretariat:** The secretariat plays a crucial role in the PEAC by overseeing daily operations, ensuring compliance with governance standards, and facilitating effective communication between stakeholders, thereby upholding the programme's integrity and operational efficiency.
 - **Technology Platform:** The technology platform supports the management and tracking of environmental credits and certifications. This platform ensures efficient data integration and secure, scalable operations essential for handling the increasing transactions in the environmental credit markets. It underpins the organisation's commitment to transparency and integrity in its activities.
- **Programmes:** The structure of the PEAC allows for many programmes to operate in the programme as described below.
- **Programme Governance:** Each programme under the PEAC will be managed by its own governance structures.
- **Registry:** An outsourced, independent registry provider to ensure secure, transparent recording and verification of environmental attribute transactions, maintaining market integrity while adhering to strict data privacy standards.
- **Markets:** The structure allows for interaction with markets for each type of credit or certification. These markets are where the credits and certifications are traded, ensuring that the environmental benefits are capitalised and incentivised.

This structured approach allows the PEAC to effectively manage and scale its operations, ensuring that environmental credits and certifications are issued, traded, and monitored in a transparent and efficient manner.



3.2 BOARD OF DIRECTORS

The Board of Directors of the PEAC, housed in the Non-Profit Organisation, plays an important role in steering the strategic direction and ensuring the overall governance of the organisation. The Board is composed entirely of independent members who are not involved in the day-to-day management or operational decisions of the PEAC, particularly in aspects that relate to the environmental integrity of the programmes.

The responsibilities of the Board include setting broad organisational policies, overseeing the management of the PEAC, accepting or rejecting independent programmes into the PEAC, ensuring compliance with legal and fiscal requirements, and maintaining the integrity of governance practices. It is crucial that the Board remains independent to avoid any conflicts of interest, ensuring that decisions are made in the best interest of the PEAC's mission and objectives.

3.3 SECRETARIAT

The Secretariat has the following functions:

- **Operational Management and Oversight:** The Secretariat oversees the daily operations of the PEAC, ensuring that the platform operates smoothly and in accordance with the strategic directions provided by the Board of Trustees and any governing committees.
- **Governance and Administrative Support:** Draft and manage budgets considering inputs from governance bodies, and handle all administrative functions, including meeting arrangements and document management.
- **Management of the Open Source Community:** Foster and manage the open source community by encouraging contributions from a diverse range of stakeholders, including developers from participating programmes and independent contributors. This involves overseeing the integration of new code, ensuring rigorous quality assurance, and facilitating collaboration to drive continuous improvement and innovation on the platform.
- **Onboarding of Participating Programmes:** The Secretariat is responsible for guiding new programmes through the onboarding process, ensuring they meet all necessary criteria and requirements. This includes assisting with the development of foundational documents, setting up governance structures, and integrating their methodologies into the PEAC platform.
- **Ongoing Management of the Relationships with Participating Programmes:** Maintain continuous communication and support for participating programmes, addressing any issues or concerns, and ensuring they comply with PEAC's standards and procedures. This includes facilitating regular reviews and updates to ensure alignment with international best practices.



- **Stakeholder Engagement and Communication:** Act as the primary liaison between the PEAC and its stakeholders, managing communications and ensuring that all stakeholder queries related to project registrations, methodology approvals, and credit issuances are addressed promptly and efficiently.
- **Transparency in Operations:** Manage the PEAC's online platform, including updating user statuses and managing the validation and verification statuses of projects and methodologies. Ensure transparency in operations by making all relevant processes and timeframes clear to stakeholders.

By fulfilling these functions, the Secretariat ensures that the PEAC operates efficiently, maintains strong relationships with its participating programmes, and leverages the collaborative potential of the open source community to enhance the platform's capabilities.

4 Participating Programmes

4.1 LEVELS OF PARTICIPATION

The PEAC Programme has a number of levels of participation, as shown below:

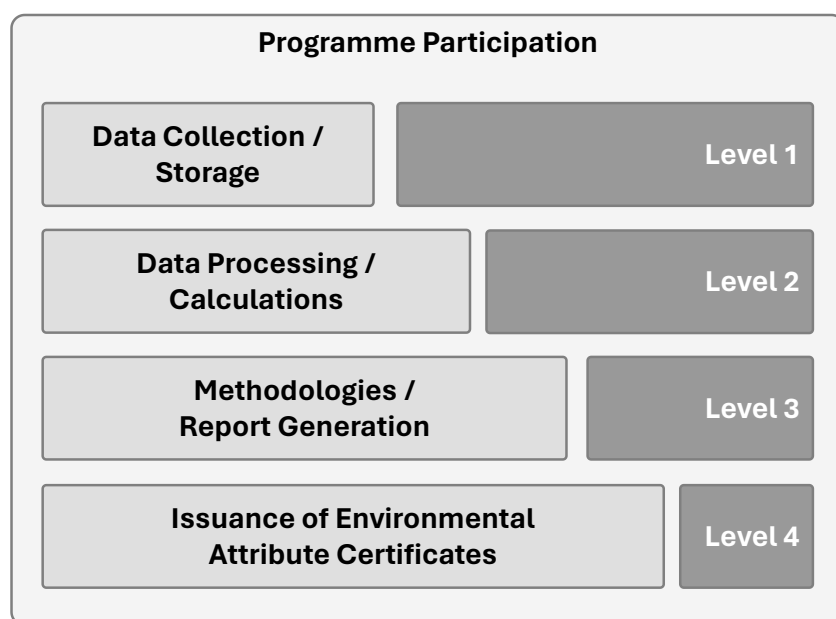


Figure 3: Levels of Participation

4.1.1 Level 1: Data Collection/ Storage

Level 1 of participation on the PEAC Platform caters to users who primarily utilise the Platform as a hub for data acquisition and storage. This level supports a variety of use cases. For example:



- **Solar PV Operators:** Operators of solar PV installations can record operational data directly on the PEAC Platform. This recorded data can then be utilised for purposes such as billing or performance monitoring.
- **Registered Carbon Credit Projects:** Projects registered under standards like the Verified Carbon Standard (VCS) can systematically capture monitoring data as specified in their respective monitoring plans, ensuring compliance and facilitating reporting. The PEAC Platform can therefore act as a Digital Monitoring Reporting and Verification (D-MRV) platform for projects registered under legacy carbon credits programmes such as the VCS and Gold Standard.

Data entry on the PEAC Platform is designed to be versatile to accommodate different user needs and technical capacities:

- **IoT Devices:** Automated data capture through connected Internet of Things (IoT) devices allows for real-time data monitoring and reporting.
- **Structured Spreadsheets:** Users can upload data using structured spreadsheets which makes bulk data handling more manageable.
- **Document upload:** Users may upload a variety of documents such as invoices to be processed for data extraction.
- **Manual Entry:** For data not captured automatically, users have the option to manually input data via a user-friendly interface on the Platform.

Once stored, the data can be processed directly on the PEAC Platform to calculate various metrics for environmental monitoring and reporting. Alternatively, users have the option to export the data for external processing, providing flexibility in how data is analysed and used.

This level of participation ensures that data, whether it be for compliance, operational monitoring, or analytical purposes, is managed securely and effectively, maximising the utility of the data collected.

4.1.2 Level 2: Data Processing

Level 2 of participation on the PEAC Platform is designed for users who require advanced data processing capabilities. This level enables the transformation of raw data into actionable insights and operational metrics. Users at this level benefit from a range of processing functionalities that cater to a large variety of needs, which may include:

- **Automated Document Analysis:** Users could upload functionalities utilising artificial intelligence (AI) technology. This would enable the Platform to interpret and extract relevant data from uploaded documents such as invoices. This feature would simplify the management of financial and operational records by converting unstructured data into structured data that can be easily analysed and reported.



- **Billing Calculations:** Operators of, for example, solar PV installations, could upload methodologies for processing operational data to compute billing amounts on the Platform. This could involve aggregating data over specified billing periods and applying predefined billing formulas to determine the amounts due.
- **Corporate Carbon Footprinting:** The Platform could be used to facilitate the collection and calculation of greenhouse gas emissions across various corporate activities, enabling detailed environmental reporting and compliance with regulatory requirements.
- **Scope 3 Emissions Tracking:** The Platform could be used to support companies in tracking and reporting indirect (Scope 3) emissions from their value chain. This is a complicated area that requires very large datasets from many inputs and calculations.

In each of these scenarios, the data processing is driven by specific calculation methodologies that users upload to the Platform. These methodologies are tailored to each application, ensuring that the calculations are accurate and relevant to the user's operational and compliance needs. This level of participation ensures that the PEAC Platform not only serves as a repository of environmental data but also as a dynamic tool for environmental management and strategic decision-making.

4.1.3 Level 3: Methodology Development and Implementation

Level 3 of the PEAC Platform facilitates the development and implementation of methodologies for comprehensive environmental programmes. This level is applicable to users who participate with full environmental attribute programmes. This level ensures that methodologies can be created and effectively integrated and utilised on the Platform. This allows for seamless integration of data capturing and storage, as well as the associated calculations necessary for adhering to the monitoring plans outlined in the project's documentation.

Methodologies developed and uploaded at this level defines the required project documentation, similar to Project Design Documents (PDDs) used in the Clean Development Mechanism (CDM) or Project Descriptions (PDs) in the VCS, including the necessary Monitoring Reports. The Platform generates templates for these documents and, once data is collected and inputted (as detailed in Level 1), automatically generates the required reports. This automation significantly reduces the labour involved in document generation, enhances the accuracy and reliability of these documents by minimising human error and potential fraud, and consequently decreases the audit burden on the participating programme. This structured approach not only streamlines documentation processes but also ensures that all output data meets the standards and requirements of the respective certification programmes, facilitating compliance and reporting.



4.1.4 Level 4: Issuance of Environmental Attribute Certificates

Level 4 of the PEAC Platform focuses on the issuance of Environmental Attribute Certificates (EACs). At this level, the platform provides for the creation, validation, and issuance of certificates based on verified data. This involves integrating methodologies and data processing rules to ensure that each certificate issued represents accurate, validated and verified environmental benefits. The goal is to streamline the entire process, from data collection to certificate issuance, reducing costs and enhancing the credibility and traceability of the environmental attributes certified.

4.2 REQUIREMENTS FOR PARTICIPATION

Participation in the PEAC Platform is designed to be inclusive and accessible, allowing a variety of environmental attribute programmes to benefit from its advanced technological infrastructure. By adhering to specific requirements, Participating Programmes can ensure they meet the high standards necessary for effective environmental certification and management. Below are examples of the types of programmes that can participate:

4.2.1 Types of Programmes

Some examples of Participating Programmes could include:

1. **Carbon Credit Programmes:** Focus on the issuance and management of carbon credits, facilitating carbon offsetting and trading activities that support carbon reduction initiatives. The PEAC could potentially provide for several types of carbon credits, such as, for example:
 - a. **Emission Reduction Credits:** Focus on projects that reduce emissions directly from projects implemented for this purpose. This can include, for example, energy efficiency projects, reduction of fugitive emissions, etc.
 - b. **Carbon Removal Credits:** Project activities that actively remove CO₂ from the atmosphere, such as reforestation or biochar projects.
 - c. **Right to Report – Value Chain:** This type of credit allows organisations to claim emission reductions within their value chain.
 - d. **Right to Report – Beyond Value Chain Mitigation:** This type of credit allows claims of emission reductions that occur outside of the direct business operations, often through funding broader environmental initiatives.
2. **Energy Certification Programmes:** Certify energy generation and consumption practices, promoting the adoption of renewable and sustainable energy sources across various sectors. Examples include:
 - a. **Renewable Energy Certificates (RECs):** Each REC represents one megawatt-hour (MWh) of electricity generated from renewable energy



sources like solar or wind, delivered to the grid. RECs play a critical role in tracking and verifying the source of green energy.

- b. **Energy Attribute Certificates (EACs):** These are similar to RECs but apply to a broader range of energy attributes. EACs can certify the environmental impacts of various energy types, including how and where the energy was generated.
 - c. **Zero-emissions Credits (ZECs):** Typically linked to nuclear power, these credits certify that the energy produced has zero emissions, supporting clean energy production that does not contribute to air pollution.
3. **Biodiversity Certification Programmes:** Develop and manage biodiversity credits, which are crucial for funding biodiversity conservation and restoration projects that yield measurable environmental benefits.
 4. **Plastic Credits:** These credits are aimed at reducing plastic pollution, and fund the collection and recycling of plastic waste. By financing proper waste management programmes, plastic credits help keep plastics out of the environment and promote recycling initiatives that convert waste into valuable materials.
 5. **Water Conservation Programmes:** Issue and manage certificates for projects that promote water conservation and sustainable water management practices.
 6. **Waste Management Programmes:** Focus on reducing waste through recycling, composting, and other sustainable waste management practices, issuing certificates that reflect these efforts.
 7. **Pollution Control Programmes:** Address air, water, and soil pollution by issuing certificates for projects that mitigate pollution and improve environmental quality.
 8. **Sustainable Agriculture Programmes:** Promote sustainable farming practices that enhance soil health, reduce chemical use, and increase biodiversity, issuing certificates for these environmental benefits.

These examples illustrate the diverse range of environmental attribute programmes that can participate in the PEAC Platform, each contributing to the overarching goal of environmental sustainability. By meeting the participation requirements, these programmes can leverage the PEAC Platform's capabilities to enhance their operations and impact.

4.2.2 Participation Agreement

The Participation Agreement is used to formalizes the relationship between PEAC and the Participating Programme. This agreement outlines the roles, responsibilities, and commitments of both parties, ensuring a clear understanding of the expectations and obligations involved in the participation. It specifies the level of participation, the procedures for onboarding, and the standards and protocols that must be adhered to. By entering into this agreement, Participating Programmes commit to maintaining high standards of transparency, data integrity, and continuous improvement, aligning their operations with the goals and values of the PEAC Platform. The agreement ensures that



all participants can effectively leverage the platform's capabilities while contributing to its overall mission of promoting environmental sustainability.

5 Governance

PEAC's governance framework is designed to enforce the highest standards of operational integrity, ethical conduct, and transparency across all Participating Programmes. This structure ensures that the activities and certifications operating on the PEAC Platform are managed efficiently and transparently. The framework is designed to enhance accessibility, making it easier for participants, especially those from smaller projects, to engage with and benefit from the programme. This inclusivity is critical in increasing access to environmental credits, which have traditionally been limited by high costs and complex barriers to entry.

To provide an effective platform for these Programmes, PEAC has implemented a governance structure focused on corporate and operational decisions. At the corporate level, the Board of Directors oversees legal, commercial, and operational aspects to ensure adherence to PEAC's mission. The operational management of the platform is handled by the Secretariat, which ensures the platform functions smoothly and supports the needs of Participating Programmes.

Each Participating Programme operates independently and is responsible for its own environmental integrity, accreditations, and adherence to relevant standards and best practices. PEAC provides the technological infrastructure to support these programmes but does not govern their environmental integrity. This approach ensures that Participating Programmes can tailor their governance structures to address specific environmental impacts effectively.



Additionally, the management of the open source platform is a crucial aspect of PEAC's governance. The open source nature of the platform fosters a collaborative environment where contributions from a diverse range of stakeholders drive continuous improvement and innovation. The Secretariat oversees the integration of new contributions, ensuring they meet rigorous quality assurance standards and align with the platform's goals. This collaborative model enhances transparency, security, and adaptability, keeping the platform at the forefront of technological advancements. The governance structure also includes an open source community governance model that oversees the development process, defines contribution guidelines, reviews pull requests, and manages releases. This ensures that contributions are reviewed and approved systematically, maintaining the platform's integrity and reliability.

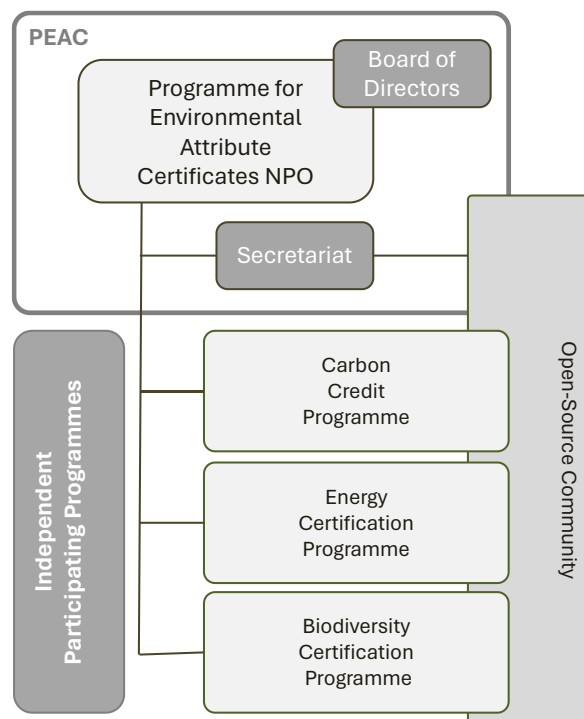


Figure 4: Participation in the Opensource Community

The governance requirements at PEAC are tailored to align with different levels of participation within the Platform, ensuring appropriate oversight at each level:

- **Level 1: Data Collection/Storage:** At this entry level, governance focuses on the integrity and security of data collection and storage. Participants must adhere to PEAC's data governance standards, which include ensuring data privacy and the proper calibration of IoT devices.
- **Level 2: Data Processing:** As participants progress to processing data, governance requirements expand to include oversight of data processing. This involves implementing quality control measures and ensuring that methodologies for data handling and processing meet PEAC's requirements.
- **Level 3: Methodology Development and Implementation:** This level involves developing and integrating methodologies that comply with PEAC's environmental and methodological standards. Rigorous review and approval processes are in place to ensure that these methodologies are both effective and environmentally sound.
- **Level 4: Issuance of Environmental Attribute Certificates:** At Level 4, governance focuses on the issuance of Environmental Attribute Certificates (EACs). This level ensures that all issued certificates are based on verified and accurate data, adhering to PEAC's stringent validation and verification protocols. Participants must



implement robust systems for the issuance process, including automated data integration, validation checks, and the use of secure, transparent registries. This level of governance guarantees that each certificate represents true environmental benefits, maintaining the highest standards of integrity and credibility within the environmental markets.

This tiered governance model ensures that as participation deepens and the complexity of engagement increases, the governance structures are robust enough to handle enhanced responsibilities, thereby maintaining the integrity and effectiveness of the PEAC's certification processes. This structured approach not only streamlines the governance across various levels of participation but also reinforces PEAC's position as a leader in environmental certification, trusted for its credibility and commitment to environmental sustainability.

6 PEAC Platform

The PEAC Platform is designed to streamline and enhance the process of environmental attribute certification. Its core capabilities include onboarding of Participating Programmes, user registration and management, methodology development and approval, project registration, monitoring, and the issuance of credits. Importantly, methodologies can be uploaded to the Platform, automating the creation of project documentation which reduces both time and costs associated with document development and subsequent audits.

The Platform will adopt an open-source model, encouraging collaboration and innovation from the broader community. This move aims to foster continuous improvement and adaptability of the Platform's features. The integration of IoT technologies further enhances this by enabling the real-time, automated upload of monitored data, which simplifies the preparation and auditing of monitoring reports. By minimising manual tasks and incorporating advanced open-source technologies, the PEAC Platform ensures robust, efficient operations that uphold high standards of accuracy and transparency, aligning with the overarching goals of PEAC to facilitate effective environmental certification.

The opensource community will include PEAC, Participating Programmes, IoT technology and service providers, and independent developers.

6.1 ARCHITECTURE

The PEAC Platform is design to build on available technologies to enhance the efficiency, transparency, and accuracy of environmental attribute crediting programmes. At its core, the Platform utilises advanced technologies such as smart contracts, IoT, remote sensing, AI/machine learning (ML) to streamline processes and ensure the system's



credibility. This integration of technology facilitates a multitude of benefits across various stages of environmental certification.

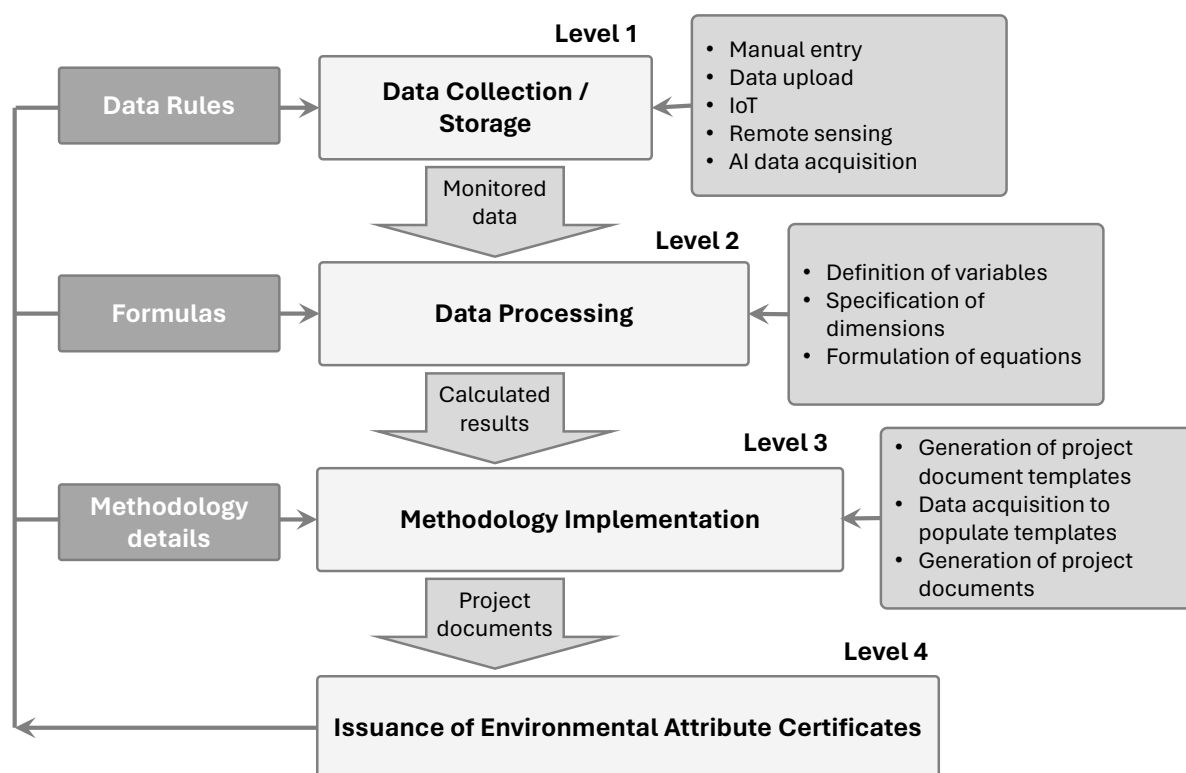


Figure 5: Architecture: Participation Levels

One of the primary advantages of the PEAC Platform is the ability of Participating Programmes to upload methodologies unique to the programme through a user interface. These methodologies are converted to smart contracts on the Platform and perform important functions such as the development of project documentation, management of data collection activities, and calculation of the certificates and/or credits for issuance.

The automation of data collection and monitoring processes is also important. By leveraging IoT and remote sensing technologies, the Platform can gather precise, real-time data from various project sites. This automation significantly reduces the need for manual data collection, thereby minimising human error and enhancing the reliability of the data.

Furthermore, the use of AI and ML algorithms can optimise the processing of large datasets, enabling efficient administrative operations and reducing operational costs. This technological framework not only lowers the costs associated with manual monitoring but also scales project management without a corresponding increase in the monitoring budget. The flexibility of these technologies allows for easy adaptation to different project requirements and environments, enhancing the overall adaptability of the PEAC programme.



Additionally, the Platform can include automated data validation protocols that instantly check the consistency, accuracy, and completeness of incoming data against established thresholds. This immediate validation is essential for prompt decision-making and maintaining compliance with environmental standards.

6.2 DATA MANAGEMENT STANDARDS

To ensure the highest level of data integrity, security, and transparency, Participating Programmes must adhere to the following data management standards when utilizing the PEAC Platform:

- **Data Privacy and Security:** Ensures that all data collected, stored, and processed is protected against unauthorized access and breaches. This includes implementing encryption, secure access controls, and regular security audits.
- **Data Integrity and Accuracy:** Requires that all data is accurate, complete, and reliable. This involves regular data validation checks, error correction protocols, and maintaining a clear audit trail for data modifications.
- **Standardized Data Formats:** Mandates the use of standardized data formats for data collection and reporting to ensure consistency and compatibility across different programmes and systems. This helps in integrating and comparing data from various sources.
- **Transparent Data Reporting:** Requires clear and transparent reporting practices, making data accessible to users. This includes publishing validation and verification reports and ensuring that all reported data is easily understandable and verifiable.
- **Data Audits:** Involves conducting regular data audits to ensure compliance with established standards and to identify and rectify any discrepancies or issues. These audits should be performed by independent third-party auditors.
- **Data Updates:** Ensures that data is updated regularly and in a timely manner to reflect the most current information. This includes setting schedules for periodic data submissions and updates.
- **Documentation:** Requires thorough documentation of data collection, storage, processing, and reporting procedures. This documentation should be readily available for review and detail all aspects of data management practices.
- **Data Retention and Disposal:** Establishes clear guidelines for the retention and disposal of data. This includes defining retention periods for different types of data and ensuring secure and compliant disposal methods.

By adhering to these standards, Participating Programmes can ensure that their data management practices meet the high standards required by the PEAC Platform, facilitating accurate, transparent, and secure data handling.



6.3 OPEN SOURCE

6.3.1 IT Platform Code

The PEAC Platform will be licensed under the Apache License 2.0 to promote transparency, collaboration, and innovation. This open source model ensures that the platform benefits from the collective expertise of a diverse community of developers and stakeholders, fostering continuous improvement and inclusivity.

Under the Apache License 2.0, users can freely use, modify, and distribute the software, provided that the original copyright notice and license terms are included. This license also grants patent rights from contributors to users, enhancing the platform's legal protection.

Developers from participating programmes, independent contributors, and other stakeholders are encouraged to contribute to the platform. Contributions, including code, documentation, bug reports, and feature requests, will undergo rigorous code review and quality assurance to meet the high standards required for environmental certification operations.

Contributors retain copyright to their work while licensing it to PEAC, ensuring intellectual property rights are respected. An open source community governance model will oversee development, define contribution guidelines, review pull requests, and manage releases, keeping the platform open, transparent, and responsive to user needs.

The open source nature of the platform enhances transparency and security by allowing stakeholders to review and verify the codebase, which helps identify and address vulnerabilities. Comprehensive documentation and support will be provided, including guidelines for development, coding standards, and best practices.

The Apache License 2.0 brings numerous benefits, such as reduced development costs, accelerated innovation, and access to a global pool of talent. By embracing open source principles, PEAC ensures the platform remains at the forefront of technological advancements, continually evolving to meet the needs of the environmental certification community.

6.3.2 Data

Data management on the PEAC Platform is structured to balance proprietary protections, licensed usage, and the benefits of open source data sharing. The platform categorizes data into three distinct levels, each with its own access and usage guidelines:



6.3.2.1 *Proprietary Data*

Proprietary data encompasses sensitive information that is owned exclusively by the Participating Programme. This type of data is essential for maintaining competitive advantages and safeguarding confidential business information. It includes internal project designs, proprietary algorithms, and confidential financial information that are critical to the strategic operations of the Participating Programme. Access to proprietary data is strictly controlled and limited to authorized personnel within the Participating Programme. This stringent control ensures that only those who need to work with this sensitive information can access it, thereby protecting it from unauthorized use or disclosure. Proprietary data is not shared outside the organization without explicit permission, ensuring that the confidentiality of this information is maintained at all times. To further protect the data, robust security measures are implemented. These measures include advanced encryption techniques, secure access controls, and regular security audits to ensure the ongoing confidentiality and integrity of proprietary data.

Proprietary data may include a range of sensitive information specific to the operations and strategic interests of the Participating Programme. Examples include operational data for current and future projects, unique algorithms developed in-house that provide a competitive edge in data processing, analysis, or other technological functions, and financial statements, budget plans, and other fiscal data that are essential for internal decision-making but are not intended for public or external access.

6.3.2.2 *Licensed Data*

Licensed data refers to information that can be shared under specific licensing agreements, which dictate the terms under which the data can be used, modified, and distributed. Access to licensed data is governed by the terms set forth in these licensing agreements, ensuring that the data is used responsibly and that intellectual property rights are respected. The PEAC Platform will support various licensing models to accommodate the diverse needs of Participating Programmes, providing flexibility while maintaining compliance with legal and ethical standards.

Examples of licensed data include third-party data sets that have been acquired for use within the platform, licensed methodologies that outline specific processes or standards, and data shared under collaborative agreements between different organizations. These licensing arrangements enable Participating Programmes to access and utilize valuable data resources while ensuring that the rights of the data owners are protected. This approach allows for the integration of diverse data sources, enhancing the capabilities and reach of the PEAC Platform.

6.3.2.3 *Open Source Data*

Open source data is information that is freely available to the public and can be used, modified, and shared without restriction. This type of data fosters transparency,



collaboration, and innovation within the environmental certification community. Access to open source data is open to anyone, encouraging broad participation and contribution from a global community of stakeholders. The PEAC Platform ensures that open source data is well-documented and maintained to facilitate its effective use.

Examples of open source data include public environmental datasets that provide valuable information on various environmental metrics, open methodologies that outline standard procedures for environmental assessments, and community-contributed data sets that enrich the platform with diverse perspectives and insights. This openness not only enhances the quality and comprehensiveness of the data available but also promotes a collaborative environment where stakeholders can work together to advance environmental sustainability.

6.4 INDEPENDENT REGISTRY PROVIDER

The PEAC will employ an outsourced Independent Registry Provider to manage the secure recording and tracking of environmental attribute transactions. This provider, completely independent from the PEAC, plays a crucial role in ensuring the integrity and transparency of the credit market. It is tasked with securely logging every issuance, trade, and retirement of credits, making sure that each transaction adheres to stringent standards and regulations.

To maintain transparency and build trust within the market, the registry makes all transaction records accessible to the public. This openness allows stakeholders and the general public to verify transaction details, which is essential for maintaining market credibility. Despite this transparency, the registry upholds the highest standards of data protection and privacy to safeguard sensitive information.

The separation of the registry's functions from the PEAC's governance and operations is fundamental. It prevents conflicts of interest and promotes an unbiased management of the credit trading programme. The independence of the registry ensures it operates impartially, upholding the integrity of the market operations and supporting the broader goals of environmental sustainability facilitated by the PEAC. This structure aligns with global best practices in environmental attribute programmes, ensuring reliability in market operations.



7 Operation

7.1 OPERATIONAL ACTIVITIES

The PEAC will undertake a range of operational tasks to ensure the effective and efficient functioning of the platform. These tasks include:

- **Maintaining Current Participation Requirements:** The PEAC will ensure that the requirements for participation of environmental attribute programmes align with international best practices, ensuring that the platform remains at the forefront of environmental attribute certification. Examples of such practices include guidelines from the International Carbon Reduction and Offset Alliance (ICROA) and the Integrity Council for the Voluntary Carbon Market (ICVCM).
- **Onboarding Participating Programmes:** The PEAC will facilitate the onboarding of new programs, guiding them through the setup process and ensuring they meet all necessary criteria. This includes assisting with the development of foundational documents, governance structures, and compliance with data collection and processing requirements.
- **Regular Review of Participating Programmes:** The PEAC will conduct regular reviews of all Participating Programmes to ensure ongoing compliance with platform standards and international best practices. These reviews will involve thorough assessments of program documentation, data integrity, and adherence to governance protocols.
- **Maintaining Relationships with Independent Registries:** The PEAC will manage and nurture its relationships with independent registries to ensure seamless integration and data sharing. This collaboration is vital for maintaining the credibility and traceability of environmental attribute credits.

7.2 REQUIREMENTS FOR ONBOARDING PARTICIPATING PROGRAMMES

For a Participating Programme to be onboarded to the PEAC Platform, it must meet specific requirements, including:

- **Participation Agreement:** Participating Programs must sign a participation agreement, which includes commitments to adhere to PEAC's standards and protocols. This agreement outlines the responsibilities of both the participating program and PEAC, ensuring mutual accountability and clear expectations.
- **Foundational Documents:** Participating Programs need to submit comprehensive foundational documents detailing their structure, objectives, and operational guidelines. These documents form the basis of the program's integration into the PEAC Platform.
- **Governance Structures:** Detailed descriptions of the Participating Program's governance structures must be provided. This includes information on oversight



mechanisms, roles and responsibilities, and the interaction between different governance entities to ensure transparency and accountability.

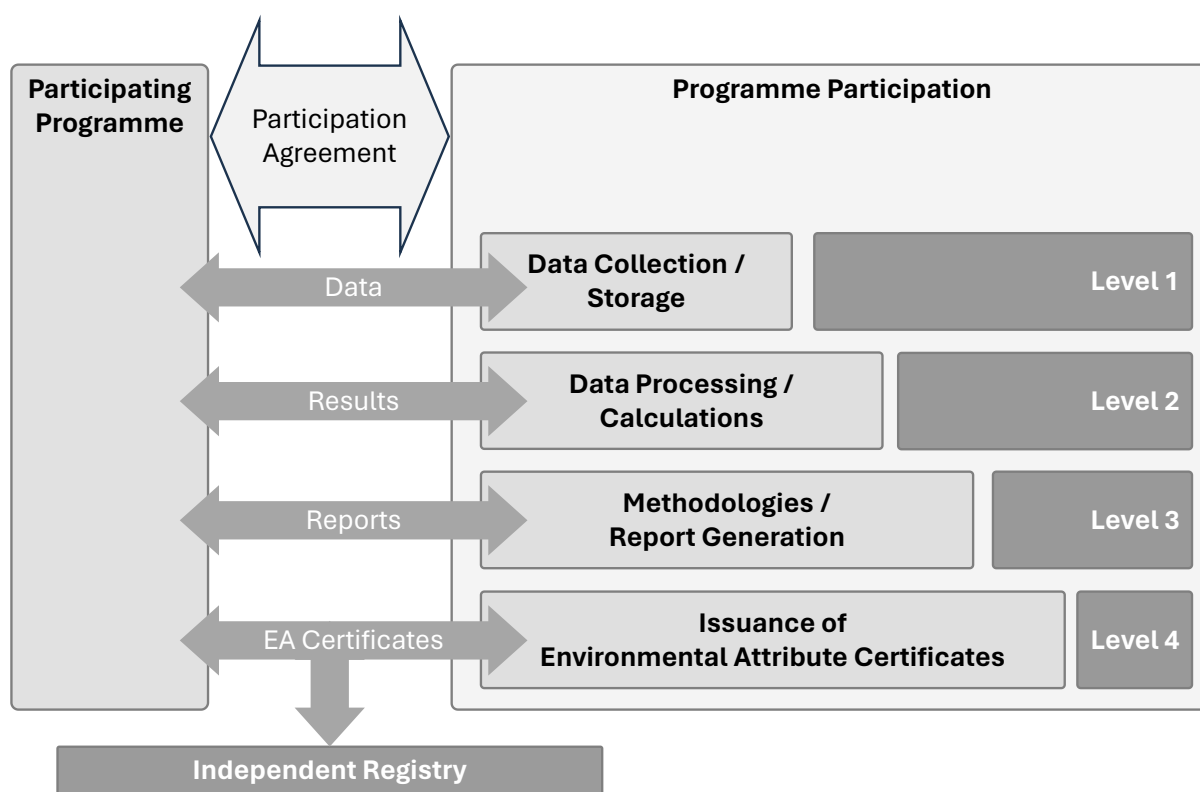


Figure 6: Participation Agreement

8 Legal Agreements

8.1 PARTICIPATION AGREEMENT

Before any programme can participate in the PEAC, it has to engage with the PEAC through a Participation Agreement. The Participation Agreement specifies the level of participation. Essential components for participation include:

1. **Specification of Level of Participation:** Programmes must clearly specify their level of participation within the PEAC Platform, whether it be Data Collection/Storage, Data Processing, or Methodology Development and Implementation. This delineation defines the access to and use of the system.
2. **Governance Structures:** Detailed information about the governance structure of the programme may be submitted. This may include descriptions of oversight mechanisms, roles and responsibilities of different governance entities, and the interplay between governance levels. This ensures transparency and accountability within the programme.
3. **Verification and Validation Protocols:** While PEAC does not govern the environmental integrity of the Participating Programmes, each programme should establish and adhere to rigorous verification and validation protocols in line with



international best practices. This includes engaging accredited third-party auditors to conduct independent audits and certify environmental claims. This may be described in the Participation Agreement.

4. **Data Management:** Programmes must outline their procedures for data collection, storage, processing, and reporting. Utilizing the PEAC Platform for data management ensures compliance with PEAC's standards and facilitates accurate and transparent reporting.
5. **Documentation and Reporting:** Programmes are required to submit detailed project documentation, including project design documents and monitoring reports. Templates and guidelines provided by PEAC help ensure consistency and comprehensiveness in reporting.
6. **Stakeholder Engagement and Transparency:** Programmes must commit to maintaining open communication with stakeholders, providing public access to validation and verification reports, if the nature of the Programme requires it.
7. **Fees and Financial Commitments:** Programmes must agree to the fee structure for using the PEAC Platform, supporting its long-term sustainability and covering operational costs.
8. **Confidentiality and Data Protection:** Programmes must ensure the confidentiality and protection of sensitive data, complying with relevant data privacy regulations to protect stakeholder information.
9. **Intellectual Property and Open Source Contributions:** Programmes are encouraged to contribute to the open source community, adhering to intellectual property rights and licensing terms established by PEAC. This fosters innovation and continuous improvement of the platform.

By fulfilling these essential components, programmes can effectively integrate into the PEAC ecosystem, leveraging the platform's advanced technological capabilities while maintaining high standards of operational integrity and transparency.

8.2 OPEN SOURCE LICENSING

The PEAC Platform operates under the Apache License 2.0 to foster an environment of transparency, collaboration, and innovation. Users of the platform are bound by this open source licensing, which allows them to freely use, modify, and distribute the software, provided that they comply with the terms set forth in the license.

Users are encouraged to contribute to the open source code base, particularly by developing features that can enhance the functionality of their specific participating programme. Contributions help improve the platform for all users, leveraging the collective expertise and creativity of the community.

The open source community is governed by a structured model that oversees the development process, defines contribution guidelines, and manages releases. This



governance structure ensures that contributions are reviewed and approved systematically, maintaining the platform's integrity and reliability. It promotes transparency and accountability within the open source community, ensuring that the platform remains open, transparent, and responsive to user needs.

Quality assurance is a critical component of this process. All contributions undergo rigorous code review and testing protocols to ensure they meet the high standards required for the platform's operations. This includes peer reviews, automated testing, and continuous integration practices that help maintain the stability and security of the platform.

Additionally, users are encouraged to appropriately manage data secrecy according to the nature and sensitivity of their data. For example, data points such as global emission factors that have broad societal benefits may be open sourced to contribute to the global community. In contrast, operational data that may be subject to corporate confidentiality or competitive considerations should be kept proprietary to protect sensitive information.

Collaboration within the open source community is facilitated through tools and platforms such as GitHub, where users can submit, review, and discuss contributions. Comprehensive documentation and support channels are available to assist contributors and users, ensuring that they can effectively participate and benefit from the platform.

By embracing open source principles and managing data secrecy appropriately, users can enhance both the functionality and integrity of the PEAC Platform, contributing to a robust and collaborative ecosystem.



Annex: Glossary of Terms

Apache License 2.0	A permissive open-source software license that allows users to use, modify, and distribute software with few restrictions. It includes an express grant of patent rights from contributors to users.
Board of Directors	The governing body responsible for overseeing the strategic direction, policy setting, and compliance with regulatory requirements of the PEAC. They ensure the long-term sustainability and adherence to the mission of PEAC.
Carbon Credit Programmes	Initiatives focused on the issuance and management of carbon credits, which represent a reduction in greenhouse gas emissions. These credits can be traded to support carbon offsetting activities.
Data Integrity and Accuracy	Ensuring that data is accurate, complete, and reliable through regular validation checks, error correction protocols, and maintaining a clear audit trail.
Data Privacy and Security	Measures implemented to protect data against unauthorized access and breaches, including encryption, secure access controls, and regular security audits.
Environmental Attribute Certificates (EACs)	Certificates that certify the environmental attributes of various types of energy or other environmental impacts. Examples include, inter alia, energy certificates, water credits, carbon credits or biodiversity credits.
Governance Structure	The organizational framework that defines the roles, responsibilities, and processes for decision-making within PEAC, ensuring transparency and accountability.
Internet of Things (IoT)	A network of interconnected devices that collect and exchange data in real-time, used for automated data capture and monitoring in environmental certification processes.
Licensed Data	Information shared under specific licensing agreements that dictate the terms of use, modification, and distribution, ensuring responsible usage and protection of intellectual property rights.
Methodology Development and Implementation	The process of creating and integrating methodologies into the PEAC Platform, including defining project documentation and monitoring reports to ensure compliance with certification standards.



Open Source Community	A collaborative group of developers and stakeholders contributing to the PEAC Platform, enhancing its transparency, security, and adaptability through collective expertise and peer review.
Open Source Data	Information that is freely available to the public for use, modification, and sharing without restriction, promoting transparency, collaboration, and innovation within the environmental certification community.
Participating Programmes	Independent environmental attribute programmes that utilize the PEAC Platform, each responsible for its own environmental integrity, accreditations, and adherence to best practices.
Participation Agreement	A formal agreement between PEAC and a Participating Programme outlining the roles, responsibilities, and commitments of both parties, including compliance with PEAC standards and protocols.
PEAC Platform	The technological infrastructure provided by PEAC to support the management and certification of environmental attributes, including data collection, processing, methodology development, and issuance of credits.
Proprietary Data	Sensitive information owned exclusively by a Participating Programme, protected by stringent access controls and security measures to maintain competitive advantages and confidentiality.
Quality Assurance	Processes to ensure that contributions to the open source code base meet high standards, including code reviews, testing protocols, and continuous integration practices.
Renewable Energy Certificates (RECs)	Certificates representing one megawatt-hour (MWh) of electricity generated from renewable energy sources, used to track and verify green energy generation.
Secretariat	The operational body responsible for the day-to-day management of the PEAC Platform, including compliance with governance standards, user support, and fostering the open source community.
Stakeholder Engagement	Active communication and collaboration with a broad range of stakeholders, including government agencies, non-governmental organizations, industry experts, and local communities, to ensure that PEAC processes are informed by diverse perspectives.



Transparency and Accountability

Maintaining clear and open operations, making data and reports publicly accessible, and implementing robust accountability mechanisms to build trust and credibility.

Verification and Validation Protocols

Rigorous processes employed by Participating Programmes to ensure that environmental claims are accurate and independently certified by accredited third-party auditors.

