mineral resources
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Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

SOUTH AFRICAN CARBON OFFSETS PROGRAMME: DRAFT FRAMEWORK FOR APPROVAL OF DOMESTIC STANDARDS FOR PUBLIC COMMENT

JANUARY 2022

1. INTRODUCTION

South Africa introduced a Carbon Tax in June 2019, as one of the mix of measures for supporting climate change mitigation action. A key design feature of the carbon tax is the carbon offset allowance which provides flexibility to firms to reduce their carbon tax liability by either 5 or 10 per cent of their total greenhouse gas (GHG) emissions by investing in projects that reduce their emissions. The carbon offset system seeks to encourage GHG emission reductions in sectors or activities that are not directly covered by the tax. Investments in public transport, agriculture, forestry and other land use (AFOLU) and waste sectors are likely to qualify. Carbon offsets involve specific projects or activities that reduce, avoid, or sequester emissions, and are developed and evaluated under specific methodologies and standards, which enable the issuance of carbon credits.

During the first phase of the carbon tax, carbon offset projects developed under three international carbon offsets standards, namely the Clean Development Mechanism (CDM)[1]; Verified Carbon Standard (VCS) and Gold Standard (GS) are eligible for use by companies to reduce their carbon tax liability. Scope is also given for domestic South African standards/ methodologies approved by the Minister responsible for Energy or delegated authority to be utilised in subsequent phases of the carbon tax. Eligible offsets to reduce carbon tax liability from the approved standards should first be cancelled in the originating registry before transfer and registration into the South Africa's Carbon Offset Administration System (COAS), administered by the Designated National Authority in the Department of Mineral Resources and Energy (DMRE) which issues retirement certificates for carbon tax offsets.

South Africa updated its Nationally Determined Contributions (NDCs) under the Paris Agreement, in its commitment to reduce emissions, increase its ambition and to contribute to global efforts to curb emissions and also submitted its aspirational commitment of reaching a net zero carbon economy by 2050 through the South Africa's Low Emissions Development Strategy (SA-LEDS). The carbon offsets system within the carbon tax policy is a key policy measure to cost effectively lower GHG emissions and achieve the NDCs to mitigate climate change impacts and deliver on the committed targets. There is also need to ensure that local carbon offsets projects generate sustainable development benefits and employment opportunities in South Africa by mobilising investments in energy efficiency and renewable energy, rural development projects, and initiatives aimed at restoring landscapes, reducing land degradation and biodiversity protection.Therefore, the finalisation of the rules for international carbon markets under Article 6 in Glasgow at COP26 in November 2021 is welcomed as it could create significant opportunities through cooperation between countries on market mechanisms, which are essential for ensuring cost effective and absolute emission reductions across borders. The key issues out of COP26 focused on the adoption of:

- comprehensive rules for a new carbon crediting mechanism under Article 6.4 with the supervision of a UN body where 5% of the share of proceeds must be transferred to the Adaptation Fund and additional cancellation for the benefit of the atmosphere of 2% of the carbon credits, referred to as overall mitigation in global emissions (OMGE) is mandatory;
- comprehensive accounting rules for the international transfer of carbon market units under Article 6.2 in a manner that allows the country that generates a credit to decide whether to sell the credit to other nations or to count towards their own climate targets to meet their NDCs. If a sale of the credits is authorised, then corresponding adjustments need to be carried out by both seller (add emission units sold) and buyer (subtracts emission units purchased) countries to their emissions tallies to avoid double counting. The share of proceeds from the credits sales under Article 6.2 are not mandated to contribute towards the Adaptation Fund and OMGE;

[1] Or the replacement mechanism as agreed under the Paris Agreement Article 6 negotiations.

- CDM projects are allowed to transition to the new mechanism under Article 6.4 and Certified Emission Reductions (CERs) issued under the CDM from 2013-2020 could be used to meet the first NDCs commitment period.

In light of the above developments under Article 6, for eligible credits that have been developed under the CDM and successor mechanism, some of the stipulations within the current Carbon Offset Regulations including crediting periods, renewals, registry systems or cut-off dates for eligible offsets etc. should be reviewed to ensure alignment with the new rules under the Article 6 successor mechanism once finalised. With the development of the new rules on the international carbon markets, there is still need to ensure there is no proliferation of cheap quality credits into the system by ensuring environmental integrity, robust accounting and promotion of sustainable development, which will effectively be implemented by governments. Therefore, use of carbon offsetting as the last resort in mitigation hierarchy while capping offsets use within carbon pricing instruments should be strengthened while governments are encouraged to develop robust domestic criteria and local standard frameworks to mitigate potential loopholes that could undermine climate mitigation efforts. A domestic standard will help create jobs, develop capacity within local institutions, reduce reliance on international standards, cater for small-scale and micro community projects and unlock mitigation potential in the AFOLU sector, which are not well covered by international standards, starting in 2023. This draft paper provides guidance on the development of a framework for potential domestic standards which is being consulted on to ensure generation of carbon credits which can be used as part of South Africa's approach to Articles 6.2 and 6.4 of the Paris Agreement.

The draft framework being consulted on is proposed to guide the development, assessment, and approval of potential eligible domestic carbon offset standards. This framework sets out the requirements, criteria for the selection, evaluation and approval of domestic standards to complement the three international standards while balancing the government's interests in protecting the integrity of its GHG emissions mitigation objectives and minimizing the administrative burden it places on government administrators, standard developers, project developers, and other stakeholders and participants.

The purpose of this document is to describe the development, application, and outcomes of the framework which was used for pilot testing by role-players (including standards developers and the government's Technical Committee).

The function of the draft domestic offset standard development, assessment and approval framework is to provide a mechanism which defines the requirements, criteria, and approval process to be followed to:

1. Enumerate the criteria that any offset standards must meet;
2. Accept applications for candidate standards to be recognized;
3. Apply the criteria for evaluating candidate standards and develop recommendations for the Minister;
4. Engage with standards that are recognized under the carbon offset program;
5. Engage with project developers via the extended letter of approval;
6. Issue, list, and track credits related to the South Africa carbon tax;
7. Transfer credits into the system and among owners;
8. Track continuing eligibility;
9. Retire credits for their use under the carbon tax scheme; and
10. Periodically evaluate the performance of the framework itself and the standards it recognises.

Items 5 to 10 on this list fall under the Carbon Offset Administration System (COAS), as illustrated in Figure 1. These steps apply to all offsets, including those generated under approved international offset standards and the eventual approved domestic offset standards.

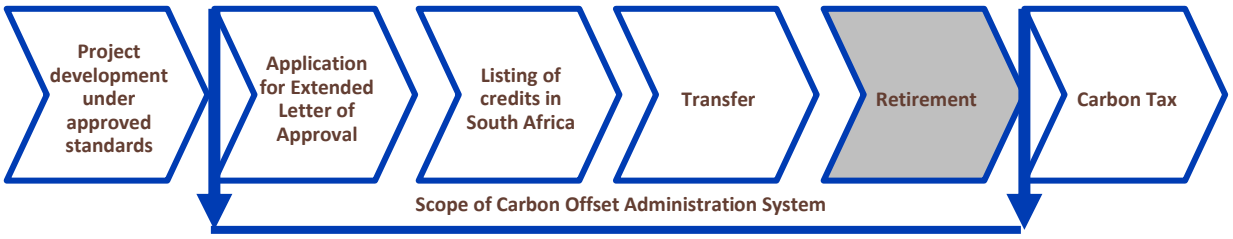

FIGURE 1: THE ROLE OF THE COAS SYSTEM[2]

The COAS system is embedded within the offset scheme but does not require further adaptation. Item 10 is an important part of the process but falls outside the scope of this project. The draft framework and accompanying documentation, then, must address elements 1 to 4 of this offset scheme.

The rest of this document describes the draft framework development including the underlying principles and goals (Section 3); the necessary components of a candidate offset standard (Section 4); the evaluation criteria to be applied by the framework (Section 5); and the process by which the framework can be implemented, including the composition of the Technical Committee responsible for its application (Section 6). The appendices include additional detailed information including a glossary that defines key terms and an application of the framework to the three approved international offset standards.

[2] Adapted from Department of Energy (2016).

2. SUMMARY OF FRAMEWORK STRUCTURE AND PROCESS

This section provides a high-level overview of the framework and associated procedures, as context for the detailed descriptions in the subsequent sections. For details on the application and definition of a standard under the framework, see Section 4. For the criteria by which standards will be evaluated, see Section 5. For a description of the role-players and process involved with implementing the framework (including a detailed decision tree flow chart), see Section 6.

The draft framework was developed as an excel spreadsheet and designed to operate as neutrally as possible (i.e., independent of the parties that are conducting the review of standards) and to minimize the administrative burden for the reviewers and the standards developers. It is primarily composed of a "Threshold Assessment" that ensures all required components of a standard are accounted for (described in Section 4.2) and an "Approval Checklist" that itemizes all of the minimum requirements that must be satisfied by a standard to be approved (described in Section 5). Both the Threshold Assessment and the Approval Checklist are derived (and standardized) from the accepted international standards, with considerations for the South African context and national goals.

The Approval Checklist within the framework sets out to evaluate and determine whether the applicant standard meets the criteria for three main sections, namely:

1. **Governance and Administration** - the degree to which the standard provides robust and transparent control and oversight of mechanisms and processes for the issuance of carbon credits and is designed to minimize the administrative burden for participants and encourage high participation;
2. **Environmental integrity** - the degree to which the standard is designed to ensure greenhouse gas emissions reductions and removals associated with South African carbon offsets projects to be real, measurable, accurate, permanent, additional, independently verifiable, and unique. Environmental integrity should be preserved to ensure "no harm" is done to the natural environment. This requires transparency, analytical rigor, and real carbon emission reductions and removals, where a ton of carbon emissions from a project registered under a domestic offset standard equates to a ton of emission reductions from the three accepted international standards; and
3. **Social, Economic, and Environmental Effects** - the degree to which the standard is designed to avoid adverse social, economic, and environmental outputs and promote projects that provide social, economic, and environmental co-benefits to local communities.

As described in Section 6, the framework spreadsheet will be used primarily by three separate entities through the application, review, and approval process: 1) the candidate standard developer (Applicant); 2) the DMRE Internal Reviewer; and 3) the Technical Committee. This process is summarized in Figure 2 and described in detail in Section 6. First, the Applicant will use it to ensure all elements of a standard are included via the Threshold Assessment. The Applicant will submit the completed Threshold Assessment as part of its application to the government. Then, a DMRE Internal Reviewer will review the Threshold Assessment and, assuming all components are present, return the framework spreadsheet to the Applicant to fill out the Approval Checklist indicating whether each criterion is satisfied and providing evidence and documentation. The Applicant will then submit the framework spreadsheet and associated documentation back to the government.

After the government receives the completed checklist from the developer, the Internal Reviewer will conduct a completeness check of the Approval Checklist, evaluating the documentation and evidence provided by the developer for each criterion. The Internal Reviewer will then transmit the framework spreadsheet to the members of the Technical Committee together with their notes and observations. The Technical Committee will conduct the substantive evaluation and provide a consensus recommendation

to the Steering Committee regarding whether the standard should be recommended for approval by the DMRE Director General.

Section 6 describes the process in detail and provides a decision-tree flowchart with more information on the specific steps and associated actions and documentation.

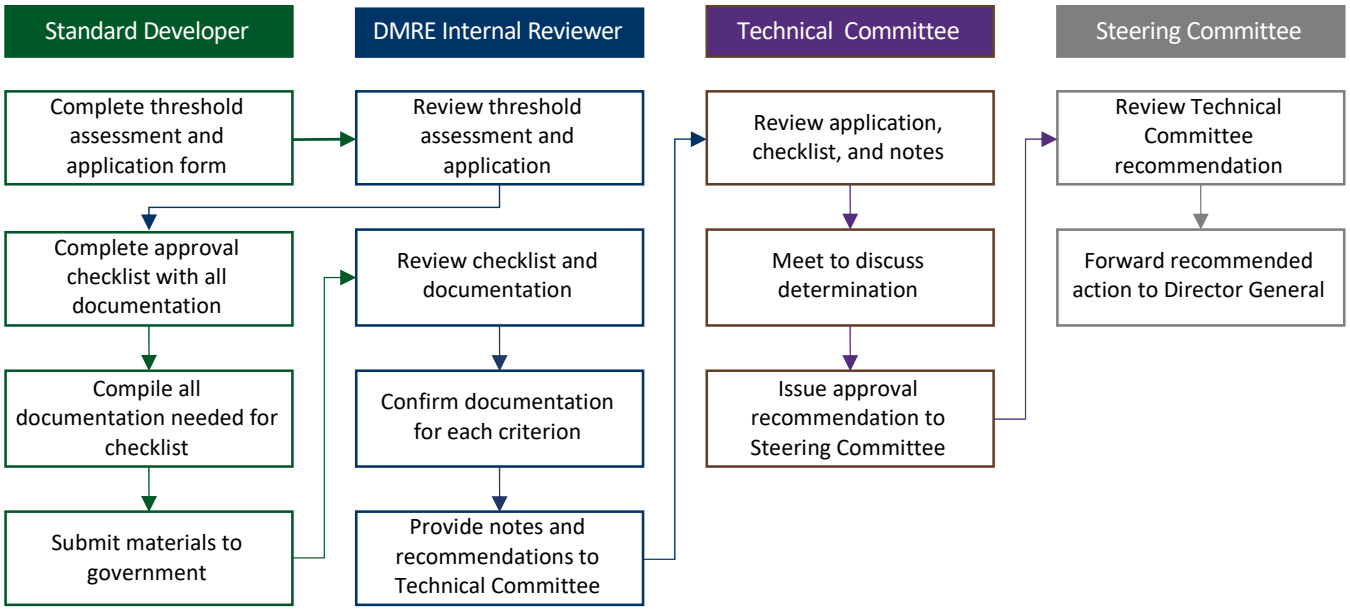

FIGURE 2: SIMPLIFIED SUMMARY OF FRAMEWORK PROCESS

3. PRINCIPLES AND GOALS OF FRAMEWORK

The framework is based on a set of key principles and objectives, including those that are broadly applicable to all international and domestic offsets – including environmental integrity (encompassing real reductions in emissions and avoidance of double-counting) and transparency – as well as additional principles that are specific to South Africa, including goals pertaining to sustainable development. The framework should, to the extent feasible, provide a mechanism that:

1. Ensures environmental integrity (i.e. real, measurable, permanent, verifiable, accurate, unique, and additional reductions with robust monitoring and verification requirements);[3]
2. Accommodates offset standards that lower the costs of the offset project certification process;
3. Allows for standards that certify projects that may be excluded from international standards, but are appropriate for the South Africa context;
4. Provides a transparent process for consideration of candidate standards;[4]
5. Accommodates social, economic, and environmental goals for co-benefits;[5] and
6. Withstands scrutiny in the international arena.

The following subsections provide brief discussions of the key objectives and how they inform the design of the framework.

3.1. ENSURE ENVIRONMENTAL INTEGRITY

Central to the design of the framework is the tenet that it is essential to protect the integrity of the offset system, meaning it upholds the intent of international and national commitments to climate change mitigation. Ensuring environmental integrity of the South Africa offsets programme ensures that a reduction in GHG emissions within the South Africa offsets programme is equivalent to a reduction in GHG emissions within other offset programmes. The framework uses the term "environmental integrity" to encapsulate the following widely-accepted principles related to carbon offsets.

- ***Real***: GHG emissions reductions or removals (and the projects or programmes that generate them) are genuine, existing in fact, with the effect that net emissions are reduced from the baseline as a result.
- ***Additional****:* Greenhouse gas emissions reduction or removal that would not have occurred in the absence of an offset crediting programme. A condition under which South African carbon dioxide equivalent emissions are no more than would have occurred under a baseline scenario that did not include a carbon offsets programme.
- ***Measurable*** and ***verifiable***: all GHG emissions reductions or removals are capable of being measured quantitatively using robust data, conservative methodologies, and recognized measurement tools (including adjustments for uncertainty and leakage).[6]
- ***Accurate***: reflects what has occurred within the project boundary, and baselines are determined in a transparent and conservative manner (taking into account uncertainty), while anthropogenic

[3] National Treasury (2014), Carbon Offsets Paper, 12; ICROA (2017), ICROA Offset Standard Review Criteria, available at https://www.icroa.org/Quality-Assurance

[4] UNFCCC (2017), Guide for Peer Review of National GHG Inventories, 15.

[5] National Treasury (2014), Carbon Offsets Paper, 13.

[6] National Treasury (2014), Carbon Offsets Paper, 13.

emissions by sources and sinks are adjusted for leakage[7] effects and permanence, in accordance with approved methodologies.

- ***Permanent***: GHG emissions reductions or removals are long-lasting, and established processes are in place to address risk of reversal, while an accepted approach is in place to address non-permanence (e.g., temporary or long-term credits issued for AFOLU project activities.

These same concepts and principles are also incorporated into rules and procedures for CDM[8], VCS[9] and GS.[10]

The South African government states that environmental integrity is the most important principle of the national offsets programme.

3.2. Lower Transaction Costs

It has been acknowledged that there are high transactions costs associated with carbon offset projects developed using the three international standards hence the desire to develop local standards that preserve environmental integrity while reducing transactions costs. The transactions costs associated with carbon offsets project typically include:

- Project design costs associated with designing the project (researching project types, stakeholder consultation, impact analysis) and developing project design documents;
- Validation costs associated with confirming the proposed project will meet the requirements of the offset program;
- Project approval administrative costs associated with complying with project approval processes imposed by offset program administrators;
- Monitoring and reporting costs associated with monitoring the emissions reductions from a project over time;
- Verification costs associated with verifying the emissions reductions of the project;
- Carbon credit issuance administrative costs associated with securing issuance of carbon credits.[11]

While available information on transactions costs is scarce, a 2015 Partnership for Market Readiness Technical Note indicated transactions costs for offset projects are typically in the range of 2020 ZAR 3.24 to 67.04/ton CO_2e (2020 ZAR 3.24 to 26.94, for CDM projects; 2020 ZAR 18.43 to 29.37, for GS; and 2020 ZAR 14.99 to 67.04, for VCS).[12] If, for example, a project costs ZAR 93.50/ton CO_2e and transactions costs added ZAR 32/ton CO_2e, this would suggest transactions costs of 34.2 percent. Available guidance suggests that differences in transactions costs between offset programs can be

[7] UNFCCC CMP (2006) Modalities and procedures for a clean development mechanism. [*CMP/2005/8/Ad1, Decision 7/CMP.1, p17 para51*]; UNFCCC (2017), Guide for Peer Review of National GHG Inventories, 15

[8] UNFCCC CMP (2006) Further guidance relating to the clean development mechanism, CMP/2005/8/Ad1, Decision 7/CMP.1, 97 para20. Available at https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms-under-the-kyoto-protocol/clean-development-mechanism/review-of-the-modalities-and-procedures-for-the-clean-development-mechanism

[9] Verra (2019), VCS Program Guide, Available at https://verra.org/project/vcs-program/rules-and-requirements/

[10] GS (2019), Gold Standard for the Global Goals – Principles and Requirements. Version 1.2, Available at https://www.goldstandard.org/project-developers/standard-documents

[11] Partnership for Market Readiness (2015), Options to Use Existing International Offset Programs in a Domestic Context, Technical Note 10, 77.

[12] Based on 2015 estimate of €.16 to 3.31/ton CO2e in Partnership for Market Readiness (2015), Options to Use Existing International Offset Programs in a Domestic Context, Technical Note 10, 80; and 28 April 2020 currency exchange rates available at www.xe.com

explained by the steps involved the project lifecycle, program fees, details involved in project design, monitoring and reporting requirements, type of validation and verification entities used, and additional project criteria (e.g. sustainable development).[13]

Concerns have been raised about the administrative requirements, auditing costs, monitoring requirements as well as the high fixed certification process costs associated with the three international standards which create a barrier to participation in a formal carbon offset system by small-scale projects and small, medium and micro enterprises (SMMEs).

There is a general recognition that enhancing the environmental integrity of a standard requires increases in information, documentation, and monitoring costs but because they have to be universally applicable, similar requirements or restrictions should be applicable for South African standards (Figure 3).

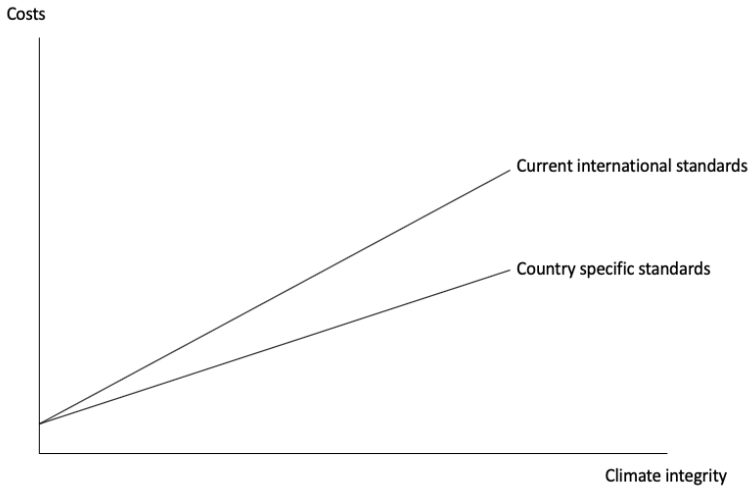

FIGURE 3: COSTS AS A FUNCTION OF ENVIRONMENTAL INTEGRITY, BY BREADTH OF PROGRAM

There are suggestions that there may be opportunities to reduce the transactions costs from domestic standards by providing simplified tools such as positive lists, enhancing local auditing capacity, and reducing documentation and monitoring requirements. These suggestions are consistent with the following cost reduction recommendations from national and international reports:[14]

- Use of positive lists to minimize validation and monitoring and reporting requirements;
- Use of Programmes of Activities (PoAs) and aggregation of projects;
- Use of standardized validation and verification forms;
- Use of guidance manuals;
- Use of simplified approaches for estimating baselines and GHG emissions reductions;
- Use of clear rules and consistent evaluations;

[13] Partnership for Market Readiness (2015), Options to Use Existing International Offset Programs in a Domestic Context, Technical Note 10, 80; Department of Environmental Affairs (2015), Discussion Document on Environmental Offsets, 38.
[14] Partnership for Market Readiness (2015), Overview of Carbon Offset Programs: Similarities and Differences, Technical Note 6, 17-18; Department of Environmental Affairs (2015), Development of Potential Verification Standards and Methodologies for Carbon Offset Projects in the AFOLU Sector in South Africa, 69-73.

- Use of transparent processes; and
- Reduced frequency of credit issuance.

The draft framework needs to carefully balance trade-offs between ensuring environmental integrity and minimizing transactions costs, allowing standards to economize on administrative and transactions costs provided they do not erode environmental integrity.

3.3. Accommodate South Africa-Specific Projects

There are concerns that renewable energy and land use projects, which might be appropriate for South Africa, are excluded or limited under some international standards. For example, there are concerns that the CDM has typically been focused on very large projects, which creates barriers for small-scale projects with high potential for co-benefits. In addition, the CDM provides for afforestation and reforestation activities, but no other land-use activities in the AFOLU sector. While there are concerns that the demand for carbon offsets might exceed the supply of local projects, the National Treasury's conclusion based on its review of multiple independent estimates of the South African carbon offsets market was that anticipated supply of South African carbon offsets would be sufficient to meet anticipated demand.[15] This focus on South African projects is expected to drive least-cost mitigation options and encourage investments in projects that could result in social, environmental, and economic co-benefits, including rural development, jobs creation, land restoration, biodiversity protection, in the development of a low-carbon economy.[16]

The draft framework allows standards that accommodate a broader range of projects that are appropriate to the national context, provided they simultaneously protect the environmental integrity of the program.

3.4. Provide Transparency

One of the barriers to both new standards and project development is the uncertainty involved in achieving approval given the changes in documentation processes for the international standards and the inability to predict whether a particular project would be approved under CDM. For this reason, building on existing systems,[17] the draft framework was designed for maximum transparency and predictability. The process will involve sufficient and clear documentation so all parties can understand how and why decisions are made.

3.5. Accommodate Social, Economic, and Environmental Goals for Co-Benefits

Co-benefits have long been a fundamental principle of the South African carbon offsets program, highlighted in the National Treasury's 2014 Carbon Offsets Paper.[18] There is a strong commitment to local projects that offer co-benefits, including climate adaptation, energy security and resilience, economic and sustainable development, employment opportunities, avoidance of environmental degradation, improvements to environmental quality, and preservation of natural ecosystems and wildlife habitats.

At the same time there are concerns that imposing specific requirements for co-benefits on carbon offsets projects could place an undue burden to the development of a carbon offsets market. Thus, the

[15] National Treasury (2014), Carbon Offsets Paper, 28.
[16] National Treasury (2014), Carbon Offsets Paper, 7.
[17] For example, transparency efforts will build upon existing reporting practices by international offset standards and national reporting of GHG emissions. UNFCCC requires annual GHG emissions reporting on 15 April. CDM provides semi-annual reporting to its Board of Directors; VCS and GS both provide annual reporting.
[18] National Treasury (2014), Carbon Offsets Paper,13.

framework emphasises environmental integrity, while it also assesses the environmental, social, and economic co-benefits, specifically guarding against standards that would allow projects that adversely affect society or cause environmental degradation (i.e. using a "do no harm" approach).

3.6. Withstand International Scrutiny

Finally, it is important that the draft framework supports an offset system that is acceptable to other countries participating in the United Nations Framework Convention on Climate Change (UNFCCC). The government has indicated an expectation that the South Africa carbon offsets program should be linked to international markets, as Article 6 of the Paris Agreements encourages international cooperation on climate change, which could result in other countries sponsoring future carbon offsets projects in South Africa. To demonstrate commitment to NDCs and to encourage future project development in South Africa, the offsets system needs to withstand international scrutiny. To this end, consideration was given as to the extent to which offset projects in South Africa could have relevance for national reporting under the Paris Agreement or the extent to which South Africa has achieved its mitigation targets under the NDCs during the relevant reporting time period. If indeed offsets may be or are to be counted towards domestic commitments under an NDC, and in light of the requirements of the Paris Agreement, a South African program should be consistent with TACCC principles (Transparency, Accuracy, Consistency, Comparability, Completeness) for reporting to the UNFCCC.[19] The status of the South African offsets program within the international arena may become even more relevant based on the adoption of a successor mechanism to the CDM programme under Article 6.4 of the Paris Agreement and ICAO's CORSIA.[20]

[19] UNFCCC (2017), Guide for Peer Review of National GHG Inventories, 15.

[20] It is, however, noted that the Article 6 mechanism under the Paris Agreement is still evolving and the relevant rules have yet to be finalised. The lack of such rules or consensus in relation to the rules, constrains the ability for this framework to align with Article 6 international market requirements. That notwithstanding, consistency with the considerations in the above-quoted documentation as well as the CDM, VCS and GS criteria, will to some degree ensure the eligibility of South African domestic offsets within the international market, particularly in relation to the developing CORSIA market.

4. DEFINITION AND COMPONENTS OF A STANDARD

The terminology for programs, standards, protocols and registries are sometimes used interchangeably and can be confusing.[21] For example, many offset programs identify themselves as "standards" (such as the Verified Carbon Standard and Gold Standard) or as "registries" (such as the American Carbon Registry). These have, however, more of the nature of offset schemes, mechanisms, or programs, as they have similar functions and general components.

While there is no single accepted international definition of a standard,[22] to develop the evaluation criteria that will be used under the South Africa Carbon Offset Framework, it is essential to first define the function and components of a standard. Section 4.1 provides a brief overview of different approaches to the concept of a standard as they are reflected in international and domestic programs. Section 4.2 then lays out the proposed approach to defining a standard for the purposes of the South Africa carbon offset framework.

4.1. STANDARDS IN PRACTICE

To identify the function and components of a carbon offset standard, it is instructive to examine both the terminology and the execution of existing systems.[23]

4.1.1. OFFSET PROGRAMS, MECHANISMS AND SCHEMES

In the broadest terms, an offset program, mechanism, or scheme is a system under which GHG emission reductions relative to an established baseline can be achieved and certified. These programs typically perform three basic functions: 1) they develop and approve standards that establish requirements or criteria for the quality of carbon offset credits; 2) they assess offset projects to determine whether they meet the requirements of the standards (usually through third-party verifiers); and 3) they operate registry systems that issue, transfer, and retire carbon credits.[24] Programs can be considered as being more "complete" or "comprehensive" compared to other instruments, insofar as they provide rules and administrative bodies for accounting, quantification, registration, monitoring, verification, certification and issuance of offsets.[25] Examples of these comprehensive offset programs include the CDM, Joint Implementation (JI), Regional Greenhouse Gas Initiative (RGGI), Climate Action Reserve (CAR), VCS, GS, and Plan Vivo. Offset Programs either have their own protocols/methodologies for a set of project types or they approve the use of protocols developed by another offset program.

In the context of these more comprehensive programs, the term "standard" can refer to a range of elements. GHG emission reduction/removal enhancement programs can incorporate standards to establish internal regulatory frameworks, with operational modalities and procedures (often called "standards") to govern processes for developing project methodologies, assessing and approving projects, auditing (validating and verifying) projects, considering project performance, issuing carbon credits and for tracking carbon credits (in a registry). For example, the CDM 'mechanism' includes the CDM Project Standard, which describes the requirements for the project cycle (project design, registration, implementation, verification, and issuance of carbon credits) within the 'program' or 'market-

[21] GHG Management Institute and the Stockholm Environmental Institute (n.d), Carbon Offset Guide, Available at: http://www.offsetguide.org/understanding-carbon-offsets/carbon-offset-programs/protocols-standards/
[22] Ibid.
[23] Appendix B provides a review of the common components described in academic literature.
[24] D Broekhoff, M Gillenwater, T Colbert-Sangree and P Cage (2019), Securing Climate Benefit: A Guide to Using Carbon Offsets, GHG Management Institute and Stockholm Environment Institute, Available at https://www.sei.org/publications/guide-to-using-carbon-offsets/
[25] A Kollmuss, M Lazarus, C Lee, M LeFranc, C Polycarp (2010), Handbook of Carbon Offset Programmes: Trading Systems, Funds, Protocols and Standards," Earthscan (note the authors of this book refer to programs as "complete standards" instead of programs).

mechanism', and the CDM Validation and Verification Standard (VVS) describes the requirements for project registration and issuance of carbon credits. The CDM accreditation standard describes the requirements for the Designated Operational Entity (DOE), which is essentially the independent carbon auditor.

In many cases, such as the ISO standards related to carbon offsets, the standards are not necessarily part of a large programme. The ISO14064-2 standard (for project level quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements) is analogous in function to the CDM Project Standard, but is available to be used outside the confines of any individual offset programme. The ISO14064-3 standard (guidance for the validation and verification of GHG assertion) relates to the CDM VVS, and the ISO14065 standard (requirements for the Validation and Verification Body-(VVB) is similar to the CDM accreditation standard. While the CDM standards are incorporated within a larger system or program, the ISO standards exist as standalone guidance for specific activities and analyses. In some cases the ISO standards have been incorporated into other programs as in the case of VCS's requirements for approving VVBs (in addition to recognising auditors (DOEs) accredited under the CDM). In the case of the ISO standards, an individual standard typically does not have its own regulatory body that registers projects, nor do they usually have registration and enforcement systems to track and ensure the legal ownership of offset credits. The ISO standards are accepted by the South African National Accreditation System (SANAS) for accrediting carbon auditors and developing carbon emission reduction/removals projects. In the context of the ISO standards related to carbon offsets, then, the term "standard" refers to quite focused, standalone guidance.

The 2019 Carbon Offset Regulations refers to three of these offset programs – CDM, VCS and GS - as international "standards." In the international context, these are actually "programs" for facilitating (or enabling) GHG emission reductions and crediting and they include standards. It is clear, however, that the South Africa carbon tax regulations use the term "standard" to refer to a more comprehensive set of activities consistent with all of the functions of the CDM, VCS and GS. For purposes of the framework development, it is critical to identify which functions of these "standards" need to be incorporated into the South Africa conception of a standard.

Figure 4 unpacks the functions of the three approved international programs, illustrating some of the functions and components of a domestic standard, as envisioned under the South Africa offset scheme. The top row in Figure 4 identifies the key players in a GHG emission reduction/removals program. The key documents and processes in an offset project lifecycle are shown in the rows depicting the conceptualization phase, the detailed design phase for project registration, and finally the implementation and monitoring phase for credit issuance by a GHG emission reduction/removals program. Thus, a standard, for purposes of the South Africa offset scheme needs to ensure that all of these functions are either provided for or accommodated. This project cycle essentially makes up the "project development under approved standards" block shown on the left of the COAS system in Figure 1 (in Section 1). This illustrates how a carbon credit, generated under a GHG emission reduction/removal enhancement standard, must be transferred into South Africa's COAS, so that retirement certificates can be obtained for submission to SARS, to claim carbon tax offsets.

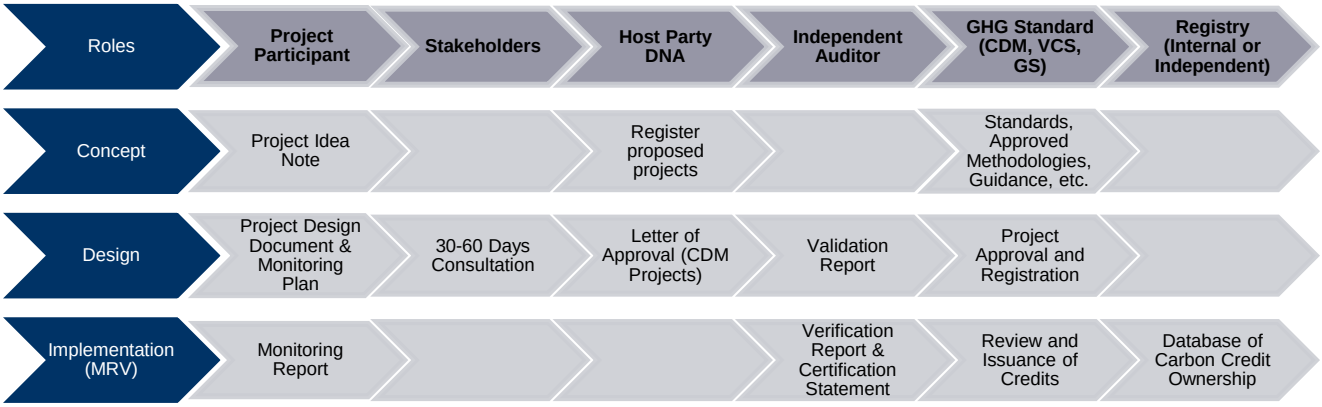

FIGURE 4: SIMPLIFIED PROJECT CYCLE AND ROLES FOR GHG EMISSION REDUCTIONS AND REMOVALS

4.1.2. PROJECT-LEVEL PROTOCOLS AND METHODOLOGIES

As illustrated above, the accepted international offset programs (CDM, VCS, GS) have embedded in their architecture a number of requirements (standards, procedures, guidelines, methodologies, tools, etc.) for a set of project types, or approve the use of protocols developed by another recognised offset program. These protocols and methodologies (the terms are often used interchangeably within and between programs) address GHG accounting rules and program requirements for project development, implementation, MRV, and certification. In effect they set out the rules and procedures to assess eligibility, additionality, co-benefits and baselines as well as project emissions for a particular project type.[26] These protocols provide common definitions, accounting frameworks and quantification options that can be adopted or adapted by individual offset programs or standards. In this sense, these protocols can be seen as building blocks for the development of offset standards and programs.[27] Approved methodologies provide guidance and/or specifications on the quantification of GHGs, as well as monitoring and reporting.

For purposes of the South Africa framework, it will be important to ensure that approved standards provide these functions.

4.2. COMPONENTS OF A STANDARD UNDER THE SOUTH AFRICA CARBON OFFSET SYSTEM

The framework for the approval of South African standards is designed to operate in conjunction with a wider administrative system under COAS, including the South African Carbon Offset Registry, as well as various roles prescribed for the Administrator in terms of the Offset Regulations. In this sense "standards" to be evaluated using the framework will be subject to a registration system created by COAS. In view of the fact that COAS is intended to operate as the overarching administrative body for credits from a number of existing carbon offset programs, namely VCS, CDM and GS, the expectations of any "standard" to be approved thereunder, is that such a standard will need to substantively fulfil the requirements, including administrative functions of the accepted programs. In other words, it would be challenging simply to adopt a portion of a standard, such as a standard for quantification, monitoring, reporting if that was not part of a comprehensive program to ensure project registration, eligibility, issuance of credits, and the like, to generate a valid credit that can be transferred into the COAS registry.

[26] GHG Management Institute and the Stockholm Environmental Institute (n.d), Carbon Offset Guide, Available at http://www.offsetguide.org/understanding-carbon-offsets/carbon-offset-programs/protocols-standards/

[27] A Kollmuss, M Lazarus, C Lee, M LeFranc, C Polycarp (2010), Handbook of Carbon Offset Programmes: Trading Systems, Funds, Protocols and Standards," Earthscan.

This in turn would require an accompanying governance system for such a standard. This is necessary to avoid having to duplicate such additional functions within COAS to administer a domestic standard and to ensure sufficient oversight and functionality within the standard itself.

Additionally, the programs cited in the Carbon Offset Regulations (namely VCS and GS), themselves self-identify as "standards"; these terms are used interchangeably, to some degree within the market. With this in mind, our definition of the minimum requirements of a "standard" includes considerations relevant to "programs", including both voluntary and compliance as well as international, regional, and domestic programs. This enables elicitation of the core functions and requirements of such programs, so that a South African specific standard can be developed which fulfils a similar role.

As the previous two sections demonstrate, there is no universally accepted definition of a carbon offset system. In some contexts, CDM, VCS, and GS would be defined as carbon offset *programs*, with standards for specific components of those programs. For purposes of the carbon tax offset program, however, the South Africa Government has adopted the term "standard" to apply to those systems. Thus, the framework adapts the terminology as applied by the Offset Regulations.

Based on the above, together with common elements across existing standards as identified in Appendix B, it is possible to articulate the following key function and components for a carbon offset standard for approval under the South Africa system. In general, a carbon offset standard must provide for three basic functions: 1) develop and approve practices, criteria, and methodologies that ensure the quality of carbon credits; 2) assess offset projects to determine whether they meet the requirements of the standards (usually through third-party verifiers); and 3) issue carbon credits which are tracked in a registry systems that records, safeguards, tracks ownership, transfers, and retires carbon credits.[28] In the context of a domestic carbon standard, the registry system may be housed internally, or an established registry may be used (like credits issued by the VCS were initially recorded in APX and Markit registries). Registries already used by the accepted international standards would qualify to be used by a domestic standard; otherwise the registry function, performed either internally by the applicant standard or an external third-party, would need to be assessed to ensure the integrity and security of the system. Alternatively, the carbon credit registry function may eventually be subsumed in the JSE or the government's COAS system if a carbon credit registry is developed. As it stands at present, the function of COAS is to receive carbon credits transferred from issuing registries, and to grant cancellation certificates for offsets to be used for carbon tax purposes.

Thus, as a minimum requirement to qualify in structure and form as a "standard" eligible to be assessed under the framework, a candidate standard under the South Africa system must demonstrate that it includes the follow components:

- The existence of governing, technical, and administrative bodies;
- A statement of project eligibility requirements pertaining to geography, size, and project type;
- Requirements related to the evaluation of projects, including:
    - Criteria to demonstrate environmental integrity including such factors as baselines, real emission reductions, additionality, and permanence requirements,
    - Measurement and methodology requirements and a statement of how new methodologies will be developed, proposed and evaluated for approval, and

[28] D Broekhoff, M Gillenwater, T Colbert-Sangree and P Cage (2019,) Securing Climate Benefit: A Guide to Using Carbon Offsets, GHG Management Institute and Stockholm Environment Institute, Available at https://www.sei.org/publications/guide-to-using-carbon-offsets/

- Criteria and processes for the evaluation of whether projects meet sustainability co-benefits requirements, if any, of the standard;

- Requirements for crediting periods, renewal periods, or revoking of credits;
- Requirements for MRV and project cycles including project registration and validation, as well as verification and issuance requirements; and
- Rules to guard against double counting and to ensure the uniqueness of carbon credits.

Candidate standards must contain each of these elements. However, the elements do not necessarily have to be unique to each standard. For example, a candidate standard may incorporate the evaluation methodologies used by another approved standard. It is the responsibility of the parties submitting the candidate standard to provide the evidence required to demonstrate that any elements incorporated from other standards meet the minimum requirements to qualify as a standard under the South Africa offset framework.

As described in Section 6.2, candidate standard developers will initiate the framework by completing a Threshold Assessment to affirm and document that it meets each of these fundamental requirements. Following this demonstration (to be confirmed by government), the framework process proceeds to an evaluation of the quality of the standard to determine whether it can be approved for use as part of the offsets scheme based on the Approval Checklist, discussed in Section 5.

5. STANDARDS EVALUATION CRITERIA

The standard developer is to demonstrate that their product meets the minimum requirements of a standard by completing the Approval Checklist and providing evidence and documentation to satisfy all of the criteria. The Approval Checklist and associated documentation will form the basis for a completeness check and the standard review process under the framework. The application form and Threshold Assessment (with criteria itemized in Section 4.2) and Checklist (described in this section), contained in a user-friendly excel spreadsheet, will encompass all of the information needed to apply the assessment framework. Section 6 provides details on the procedures and role-players under the framework, while the remainder of this section details the minimum criteria that a standard must meet to merit approval.

The evaluation criteria within the Approval Checklist are grouped into three distinct categories: 1) governance and administration; 2) environmental integrity; and 3) social, economic, and environmental effects. The following subsections list the draft criteria that will apply to standards; there must be sufficient demonstration that each criterion is satisfied for the standard to be approved.[29] Within the Checklist, the standard will be evaluated on each criterion; on each, the standard will receive one of three scores: "does not meet criterion", "meets criterion", or "exceeds criterion". In cases where the standard exceeds or fails to meet the criterion, the findings must be accompanied by an explanation.

5.1. GOVERNANCE AND ADMINISTRATION

The criteria in this section assess the degree to which the standard provides robust and transparent control and oversight of mechanisms and processes for the issuance of carbon credits and is designed to minimize the administrative burden for participants and encourage high participation.

1. **Legal Entity**: The standard is a recognised legal entity (under South African law) and has managerial and technical personnel with the requisite authority and resources to satisfy the following sub-criteria:

    1.a. Has a defined and publicly available institutional structure, with designated roles and responsibilities;

    1.b. Identifies the required competency levels and training requirements of governance, technical, and administrative staff;

    1.c. Develops and maintains systems to ensure the independence, accuracy, and integrity of the standard;

    1.d. Ensures management and personnel are free from any undue internal and external commercial, financial, and other influences that may adversely affect the quality of their work, the integrity of the standard, or create real or perceived conflicts which create or may create unfair advantage for any person or organization;

    1.e. Ensures the protection of confidential information and proprietary rights, including procedures for protecting the electronic storage and transmission of information and results;

    1.f. Has documented rules and operating procedures (a management system), with well-functioning storage and retrieval systems for all documents and records; and

[29] In other words, it is not sufficient for a candidate standard to state that it will meet a criterion; it must provide written documentation of the specific approach used.

1.g. Demonstrates adequate operational resources and financial stability, including adequate liability insurance.

2. **Governing Body**: The standard is governed by an authority or committee composed of at least three members that meets formally at least annually, has final decision-making and oversight responsibilities, and oversees the functions and duties of the technical and administrative bodies. The governing body makes decisions in accordance with publicly available rules and procedures of the standard, and reviews these rules and procedures at least annually, based on recommendations made by the administrative body and technical body.

3. **Technical Body**: The standard has a Technical Body to consider validation and verification recommendations made by third-party auditors, prior to project registration and credit issuance by the Governing Body. The Technical Body also reviews and approves the methodologies employed by the projects, whether these are developed specifically for the proposed projects or are methodologies already approved under other international standards (i.e. CDM or VCS approved methodologies) and satisfies the following sub-criteria:

    3.a. Composed of at least 3 members;

    3.b. Members hold advanced university degrees in economics, environmental studies, engineering or related fields and have knowledge, direct professional experience, and competency pertaining to carbon offset accounting methodologies and principles;

    3.c. Have sufficient diversity of expertise and experience to fully evaluate the range of issues that may be raised by projects and methodologies of the standard; and

    3.d. Meets formally at least 2 times per year and considers each project registration and credit issuance individually.

4. **Administrative Body**: The standard has the administrative capacity for the operationalization of the standard, keeping proper record of approved projects and carbon credits issued, and reporting activities to the Governing Body at least annually.

5. **Stakeholder consultation:** The standard developer has conducted appropriate stakeholder engagement around the design and procedures of the standard, including posting public notice of their intent to submit the standard for approval under the framework; providing full documentation of the standard for review and comment by interested parties; responding to all comments received in writing; and documenting all stakeholder comments and responses.

6. **Guidelines and procedures**: The standard provides a clear and up-to-date guidebook on the procedures and processes project developers must follow for methodology approval, project approval/registration, review processes or procedures for project developers to request additional information or clarity on outcomes, the issuance of credits, and ongoing monitoring.

7. **Eligibility**: The standard lays out clear eligibility requirements pertaining to geography, size, and project type that are consistent with existing laws and regulations.

8. **Project tracking**: The standard includes a mechanism to track the progress (or cessation) of all projects submitted to the standard, including statuses of approved, pending, withdrawn, rejected, credits issued, etc.

9. **Transparency**: The standard includes a mechanism for each credit generated to have all records and associated documentation (including project plans, monitoring reports, validation and verification reports, etc.) to be publicly available (online).

10. **National approval**: The standard accommodates review and approval of all projects and programmes of activities by the South Africa government.

11. **Registry**: The standard uses a secure registry (internal or outsourced) that assigns a unique serial number for each credit, tracks ownership and identifies the credit's current status, requires periodic accounting audits, includes a mechanism to transfer credits to COAS for use as offsets, and ensures that all registry personnel are free of financial, commercial, and fiduciary conflicts of interest, including financial interests in the carbon offsets generated.
12. **Crediting periods**: The standard includes clear crediting periods that allow for reassessment of the project at regular renewal intervals and the potential revocation of credits and aligns with South African carbon tax cycles and/or international offset markets.
13. **Public participation**: The standard requires projects to provide transparency in all matters; public comment on methodologies, individual offset projects, and changes in procedures; and public participation including notification of affected stakeholders and mechanisms to respond to objections raised.
14. **Revision mechanisms**: The standard includes provisions for how the standard may be modified after initial approval, which must include notification and explanation to the South Africa national government.

5.2. Environmental integrity

The criteria in this section assess the degree to which the standard is designed to ensure transparency, analytical rigor, and real carbon emission reductions and removals, where a ton of carbon emissions from a project registered under a domestic offset standard equates to a ton of emission reductions from the three accepted international standards.

15. **Real reductions**: The standard requires sufficient and credible evidence to demonstrate the real reductions of each tonne of CO_2e credited, so that emission reductions or removal enhancements are neither overestimated nor understated, and measured against accepted baselines.
16. **Unique**: The standard includes a mechanism to ensure that there is no risk of double counting the same emission reductions or removal enhancements across registries or other programmes.
17. **Additionality**: The standard uses credible methodologies to ensure that projects' emission reductions or removal enhancements would not have otherwise occurred in the absence of the project, and include sub-criteria which:
    - 17.a. Require either a project-specific baseline or a standardized baseline that has been approved by the Technical Body and the South African government[30] or approved by one of the three accepted international programmes;
    - 17.b. Prohibit issuance of credits for actions/projects that are required by law;
    - 17.c. Require that technologies used (if any) emit less GHGs than comparable technologies;
    - 17.d. Ensure any novel additionality testing approaches are approved by any of the three accepted international programmes or are approved by the Technical Body, subject to public engagement, and approved by the South Africa government; and
    - 17.e. Ensure that any positive lists (which designate additionality by default for a type of offset activities) are reasonable for South Africa, approved by the Technical Body, subject to public engagement, and approved by the South Africa government.[30]

[30] The process for government review and approval of novel methodologies, standardized baselines, and positive lists will be developed separate from the framework for the approval of domestic standards.

18. **Measurability**: The standard ensures that all measurement of emission reductions and removal enhancements are based on robust data and conservative methodologies, approved by the Technical Body and the South Africa government or approved by one of the three accepted international programmes.

19. **Permanence**: The standard requires demonstration that projects' emission reductions and removal enhancements are permanent or includes mechanisms to account for, address, and compensate for risk of non-permanence/reversal.

20. **Leakage**: The standard requires identification of leakage risks via all pathways including likely market adjustments and, where leakage risk exists, rigorous analysis of the potential magnitude of the leakage and adjustments of the net carbon reduction to address the magnitude.

21. **Validation**: The standard uses third-party validation of all methodologies and data used in project development, prior to project registration.

22. **Monitoring and reporting**: The standard requires ongoing monitoring and specified periodic reporting of projects' emission reductions/removals.

23. **Verification and certification**[31]: Before credits can be issued, the standard requires *ex-post* verification conducted by third-party auditor who is either internationally registered under CDM, VCS, or GS or nationally accredited by SANAS using a certification at least as rigorous as ISO 14065. The verification body provides a certification statement attesting to the GHG emissions reductions/removals of the project achieved under that monitoring period.

5.3. Social, Economic, and Environmental Effects

The criteria in this section assess the degree to which the standard is designed to avoid adverse social, economic, and environmental outputs and promote projects that provide social, economic, and environmental co-benefits to local communities. In responding to these criteria, standards must demonstrate how they will design project documentation and assessment procedures to ensure compliance on these criteria.

24. **Employment**: The standard requires demonstration that projects will not have an adverse impact on employment opportunities for vulnerable groups (i.e. youth, disadvantaged groups, and/or women).

25. **Sustainability**: The standard requires demonstration that projects are not in conflict with the sustainable development goals of South Africa.

26. **Economic development**: The standard requires demonstration that projects will not have an adverse impact on local economic development.

27. **Rights of interested and affected parties**: The standard requires demonstration that projects will not impair the rights of local communities and stakeholders.

28. **Environmental quality**: The standard requires demonstration, in the form of a project statement, or if such project triggers the requirements of an Environmental Impact Assessment under South African law, then in the content of such impact assessment, that a project is in compliance with environmental legal requirements and will not have a significant adverse impact on:

    28.a. air quality;

[31] A combined validation/verification approach, as adopted by the VCS, may be accommodated.

28.b. water quality;

28.c. soil quality;

28.d. wildlife habitats; and

28.e. natural ecosystems.

6. PROCEDURES FOR APPLICATION OF THE FRAMEWORK

The framework is designed to operate as neutrally as possible (i.e., independent of the parties that are conducting the review of standards) and to minimize the administrative burden for the reviewers and the standards developers.

The Threshold Assessment and Approval Checklist, described above in Sections 4.2 and 5, respectively, will be part of a user-friendly excel spreadsheet. As summarized in Section 2, it will firstly be used by the Applicant (the standard developer) to ensure all elements of a standard are satisfied or accommodated; secondly by the DMRE Internal Reviewer receiving the application, to facilitate a completeness check at the point of submission of the standard; and thirdly by the Technical Committee to determine whether the standard qualifies and should be recommended to the Steering Committee and DMRE Director General for approval.

The following subsections describe details pertaining to the procedures, including the institutional design of the framework (Section 6.1) and the process for executing, presenting and explaining the results of the framework (Section 6.2).

6.1. FRAMEWORK INSTITUTIONAL DESIGN

The framework provides an overall approach for the review, evaluation, and approval of candidate standards. A critical element of that framework is the set of people and institutions who manage and execute the elements of the framework. The approach described in this section, to the extent possible, builds on existing institutions and leverages experience and expertise within the South Africa government.

The recommended key role players in the framework execution are summarised in Table 1. Each of the four primary roles are detailed further in the following subsections.

TABLE 1: SUMMARY OF INSTITUTIONAL ROLE-PLAYERS

Actor	Administration /Role	Composition	Resources /Funding
DMRE Internal Reviewer	Administration: according to existing DMRE employment and portfolio protocols, as amended where applicable Role: DMRE internal management and processing of applications; interactions with Applicants; initial review of standard under framework; and support to the Steering Committee and Technical Committee	DMRE official	Resources: dependent on the number and complexity of applications Funding: departmental budgets; application fees; support from donor funders
Applicant	Administration: various depending on nature of the legal person and/or corporate and/or other factors Role: preparing and submitting application materials; coordinating with DMRE Internal Reviewer and presenting to Technical Committee to provide all necessary information and documentation; operating candidate standards (approved under the framework) in accordance with its applicable institutional architecture	Candidate standard representative; various depending on nature of the legal person and/or corporate and/or other factors, including but not limited to the institutional architecture applicable to the candidate standard that it operates	
Technical Committee	Administration: according to applicable regulations and existing and/or revised protocols - taking into account its role, composition, resources requirements, funding and the focus of the carbon offsets allowance legal regime Role: applying the framework and making recommendations to the Steering Committee for approval or rejection of a candidate standard	Individuals with appropriate technical knowledge and expertise	Resources: dependent on the number and complexity of applications Funding: departmental budgets; application fees; support from donor funders

Actor	Administration /Role	Composition	Resources /Funding
Steering Committee	Administration: according to the DNA and carbon offset regulations and existing and/or revised protocols - taking into account role, composition, resources requirements, funding and the focus of the carbon offsets allowance legal regime Role: to make recommendations to the DMRE Director General or delegated authority for approval or rejection of a candidate standard	Composed according to the applicable regulations and the existing structure and/or a suitable revised structure that reflects the current departmental arrangements and protocols, taking into account the focus of the carbon offsets allowance legal regime	Resources: dependent on the number and complexity of applications Funding: departmental budgets; application fees; support from donor funders

6.1.1. DMRE Internal Reviewer

The Internal Reviewer is the outward-facing government administrator who supports the Technical Committee and Steering Committee, reviews submissions from candidate standard developers (Applicants) to ensure they are complete, conducts the initial review and assessment of the Approval Checklist submitted by Applicants, liaises with the Applicant, provides day-to-day organization of the Technical Committee, and liaises between the Technical Committee and the Steering Committee.

6.1.2. Applicant

In the offset framework processes, the Applicant is a representative of the candidate standard, and is more than a passive actor. The Applicant actively engages with the DMRE Internal Reviewer to ensure that the candidate standard has all of the elements of a standard and that those elements are clearly documented and demonstrated. The Applicant is responsible for preparing and submitting applications and supporting documentation; presenting the standard to the Technical Committee during the review process; responding to requests for additional information and documentation to support a comprehensive review; and managing and operating candidate standards (approved by the Minister or delegated authority), in accordance with applicable institutional architecture.

6.1.3. Technical Committee

The Technical Committee applies the framework criteria to the candidate standards. This Committee supports and complements the Steering Committee to which it makes its recommendations. The members collectively have the technical skills and applied experience to interpret and evaluate the candidate standards.

The Technical Committee should consist of sector technical experts with representatives from relevant government departments and agencies, academia, industry and non-governmental organisations. The Committee could be composed of experts from relevant departments (including the Departments of Mineral Resources and Energy; Agriculture; and National Treasury) as well as scientific research institutions (for example, SANAS, SABS, SANEDI and CSIR), independent industry experts or industry associations, non-governmental organisations (NGOs) and relevant academic institutions.

The Technical Committee may be constituted from nominees drawn from the following pool of experts: at least one (each) international and local expert in carbon offset projects, including consultants, auditors, and Designated Operational Entities (i.e., one international and one local expert); at least one international or local academic with expertise in carbon offsetting; and a representative from each of the two government departments, DMRE and DFFE. Each of the above nominees would need to be suitably independent and recusal procedures would need to be in place to avoid conflicts of interest.

Members should have expertise in the following areas:

- setting of baselines under existing international programs such as the CDM, VCS or GS;
- design of carbon offset project methodologies;
- financial aspects of carbon offset project administration;
- validation, verification, and certification of carbon offset projects; and
- monitoring of emissions.

The Technical Committee should be empowered to solicit impartial outside (governmental or non-governmental) expertise in cases where there are additional technical issues not covered by the expertise of the Technical Committee.

6.1.4. Steering Committee

Under the proposed institutional design, the Steering Committee will provide oversight for the execution of the offsets framework, review the evaluations of the Technical Committee regarding individual candidate standards, make recommendations to the Director General, and organize occasional reviews of the framework system. They should be empowered to make recommendations to the Director General for approval or rejection of a candidate standard on the recommendation of the Technical Committee. Thus the Technical Committee reports to the Steering Committee.

Should this proposed institutional design be adopted, then the

The Steering Committee could be composed of nominees from each existing government department contained in the DNA Regulations that have experience in or familiarity with carbon offset projects, including:

- DMRE;
- Environment, Forestry, and Fisheries (DEFF),
- Human Settlements, Water, and Sanitation;
- Foreign Affairs;
- Trade and Industry (DTI);
- Agriculture, Land Reform and Rural Development (DALA);
- Transport;
- National Treasury;
- Science and Technology; and
- Health.[32]

The chairperson is the nominated representative of the DMRE. The Steering Committee is tasked with developing its own terms of reference, which are required to meet certain minimum requirements,[33] and may confer with outside experts at their discretion.

[32] Regulation 4(2) of the DNA Regulations.

[33] Meetings of the Steering Committee; Decisions of the Steering Committee; Powers and Duties of the Sub-committees and Expert Advisory Committee ; Establishment of Sub-committees and an Expert Advisory Committee (no further powers and functions of the Expert Advisory Committee are set out in the DNA Regulations, reference to them is only made in the terms of reference for the Steering Committee)

6.2. Framework Implementation and Presentation of Results

The requirements and criteria for assessment of candidate standards under the framework have been elaborated in Section 5. This section explains how these are intended to be actualised through the framework processes and reporting formats and explores the inter-linkages between the requirements/criteria and the approval processes/reporting formats. It has been drafted on the basis that application of the framework should minimize the administrative burden and transaction costs for both government and the candidate standards developers and that the framework must operate as neutrally as possible.

The steps in the execution process described below include recommended turnaround times for the relevant participant to complete the task described. In cases where there are turnaround times specified for the Technical Committee, Steering Committee, DMRE Director General, or Minister of Minerals and Energy, the government has an option to extend the due date if they notify the Applicant of expected delays at least 2 weeks before the currently applicable due date.

This section draws together the various elements and principles (described in earlier sections), that underpin the framework's design. Consequently, while this section relies upon such design, it does not repeat the analysis and information that is provided elsewhere.

Figure 5 shows a detailed decision tree flow chart of the framework process, including actions by the Applicant, DMRE Internal Reviewer, Technical Committee, Steering Committee, DMRE Director General, and Minister of Minerals and Energy. In the figure, green arrows indicate a positive continuation decision, while red arrows indicate negative findings. Each step and decision point is described in further detail in the rest of this section.

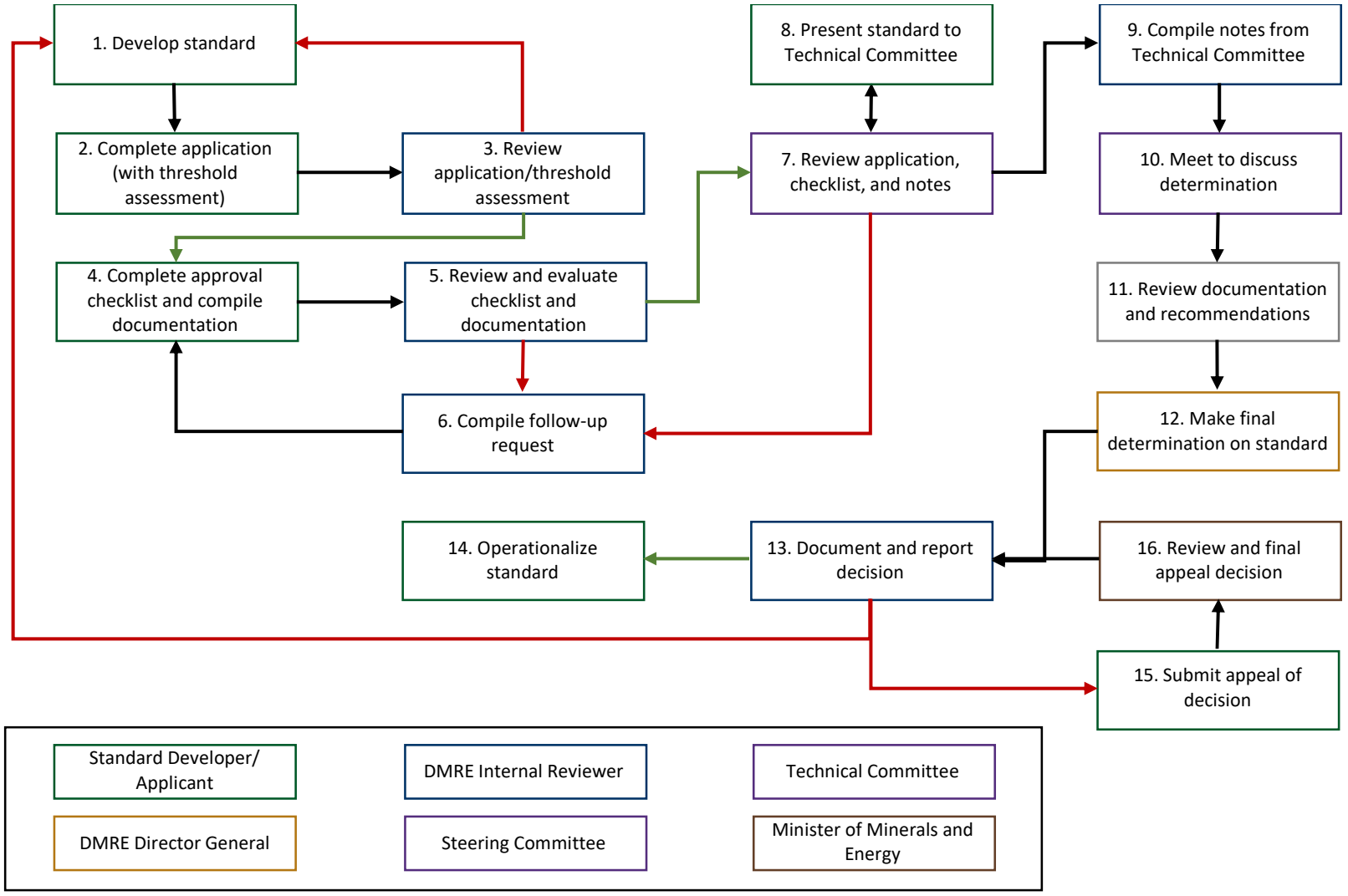

FIGURE 5: FRAMEWORK PROCESS DECISION TREE FLOW CHART[34]

[34] The diagram shows the steps in the development and review of an offsets standard. Responsibilities are colour coded by party. For the relevant decision nodes, green arrows indicate the path for a positive outcome, red arrows for a negative outcome.

1. **Applicant develops standard, conducts stakeholder outreach, and compiles all supporting documentation**

   Since the framework and all associated assessment criteria and procedures will be publicly available, Applicants can develop their standards based on information regarding what will be required for the standard to be approved under the framework. This will allow standard developers to conduct a self-assessment and determine whether they want to a) submit their application to proceed to the checklist stage, or b) self-select out of the framework process if they identify aspects of the checklist that their standard and its supporting documentation will not satisfy.

   One of the criteria for a standard to be approved under the framework is that the standard developer conducts stakeholder engagement around the standard's design and protocols (Criterion 5). As such, the Applicant will need to conduct the necessary stakeholder engagement as part of this step.

2. **Applicant fills out and returns application and Threshold Assessment**

   The Applicant will fill out the application including the Threshold Assessment (which determines whether all required components are included) and transmit the application materials to the DMRE, thereby submitting the standard for consideration under the framework and initiating the framework process with government.

3. **DMRE Internal Reviewer reviews application materials**

   After receiving the application, the DMRE Internal Reviewer will undertake a review of the application and Threshold Assessment to determine whether the Applicant has provided all necessary application materials and whether they have provided sufficient evidence that the candidate standard meets the definition of a standard under the framework.

   After completion of this step, the next action depends on the results of the Internal Reviewer's findings. If the Internal Reviewer finds that the application is complete and that the candidate standard meets the definition of a standard under the Threshold Assessment, then the Internal Reviewer will issue a *Continuation Letter* and the Applicant will proceed to Step 4. If the Internal Reviewer does not find the application and Threshold Assessment to be satisfactory, they will issue a *Discontinuation Letter*, notifying the Applicant of what deficiencies are present and the Applicant will return to Step 1 to remedy them before resubmitting their application.

   The turnaround time for this step is 10 business days.

4. **Applicant fills out checklist and compiles supporting documentation**

   After the Internal Reviewer has determined that the application is complete and that the candidate standard meets the definition of a standard under the Threshold Assessment, the Applicant will be charged with filling out the Approval Checklist and compiling the needed documentation to support the review of each criterion. As noted in Step 1, the Applicant will have had access to the checklist from the outset of the of the process which will enable them to prepare in advance; at this stage the Applicant will be charged with filling out the checklist and compiling objective documentation to support evaluation by the Technical Committee.

   If needed, this step will also encompass the provision of additional information requested by the Internal Reviewer, as described in Step 6.

   For the initial response on the Approval Checklist, there is no need for a recommended turnaround time. However, it is recommended that the Applicant be required to transmit a notice of intent to submit the Approval Checklist two weeks before submitting it to allow the government to begin preparations for review.

For responding to follow-up requests, the turnaround time for this step is 10 business days or as agreed between Applicant and Internal Reviewer.

5. Internal Reviewer evaluates checklist and documentation

The Internal Reviewer will review the application, checklist, and supporting documentation for completeness. They will conduct a thorough completeness check to determine whether the Applicant has sufficiently filled out the required elements of the framework spreadsheet and provided all the referenced documentation needed to conduct the assessment. This step also encompasses reviews of any follow-up information that has been requested by either the Internal Reviewer or by members of the Technical Committee (see Step 6).

If the Internal Reviewer finds that some information or documentation provided is insufficient for a full review of the candidate standard, they will proceed to Step 6. If they instead find that the materials provided are complete, either on their first review or on follow-up responses, they will compile and submit the checklist, documentation, and findings to each member of the Technical Committee, proceeding to Step 7.

The turnaround time for this step is 5 business days.

6. Internal Reviewer requests additional information/documentation from Applicant

If needed, the Internal Reviewer will use an *Information Request Document* to notify the Applicant that more documentation is required. This information request may be prompted by either the Internal Reviewer's completeness check in step 5 or by the Technical Committee's follow-up requests under step 7.

After receiving the request, the Applicant will return to step 4 to compile and provide additional information and documentation needed for a full assessment.

7. Technical Committee members review checklist, documentation, and findings

Each member of the Technical Committee will perform a separate, independent review of the standard using the checklist and documentation provided, developing an independent assessment (using the forms embedded in the framework spreadsheet) of each criterion in the Approval Checklist. This review will be initiated after the Internal Reviewer transmits the checklist and all supporting documentation to the members of the Technical Committee (step 5), and make a presentation of the candidate standard as described in step 8 below.

8. Applicant presents candidate standard to Technical Committee

Approximately one week after the Internal Reviewer initially transmits the Approval Checklist and all documentation to the Technical Committee, they will coordinate a meeting between the Applicant and the Technical Committee. During this meeting, the Applicant will present the candidate standard to the Technical Committee, and the Technical Committee will ask questions of the Applicant. Following this meeting, the Technical Committee members will resume their review of the candidate standard as described in step 7.

Within one week after the meeting with the Applicant, the Technical Committee members will notify the Internal Reviewer if they have additional documentation requests for the Applicant to support the completion of their review. If one or more members have follow-up requests, the Internal Reviewer will return to step 6 to compile the requests into a single *Information Request Document*. If no additional information is required, Technical Committee members will complete their reviews and submit their findings to the Internal Reviewer.

This step concludes when each member of the Technical Committee sends their independent assessments to the Internal Reviewer for compilation in step 9. The turnaround time for this step is

20 business days, starting from the day that they Technical Committee members receive the full information.[35]

9. Internal Reviewer compiles notes from Technical Committee members

After receiving responses from all members of the Technical Committee, the Internal Reviewer will compile the assessments into one framework spreadsheet file, making notes of agreements and disagreements across assessments. The Internal Reviewer will circulate this file to all members of the Technical Committee.

The turnaround time for this step is 5 business days.

10. Technical Committee meets to discuss findings and reach decision

At the Technical Committee meetings, members will compare their individual findings (based on the Internal Reviewer's compilation and associated notes) and discuss areas of disagreement. Based on their internal deliberations, the members will collectively develop a recommendation on whether the standard should be approved as well as an explanation for the decision. To expedite the documentation of their recommendation, the Technical Committee should document meeting minutes, all decisions and concerns of the Committee, and draft a summary report for delivery to the Steering Committee.

This meeting should occur within 5 business days of the conclusion of step 9.

11. Steering Committee reviews recommendations and documentation

Members of the Steering Committee may confer with their respective government departments and/or outside experts as needed. The Steering Committee will convene and reach a consensus on their final recommendations pertaining to the candidate standard.

The Steering Committee will issue its final recommendations and associated explanations to the DMRE Director General, sending copies of all documentation to the Internal Reviewer.

The turnaround time for this step is 10 business days.

12. Director General makes final determination on standard

The Director General will make the final determination on whether the standard is approved under the framework, providing the decision and justification to the Internal Reviewer, who will proceed to report the decision to the Applicant.

The turnaround time for this step is 10 business days.

13. Internal Reviewer documents and reports decision

The Internal Reviewer will compile all of the findings and notes from the Technical Committee, Steering Committee, and DMRE Director General, and, in cases where the Director General approves the standard, will draft a *Standard Approval Letter* to the Applicant advising them of the Director General's decision. In case of rejection of the Applicant's standard, the *Standard Disapproval Letter* will include itemization of which criteria were found to be unsatisfactory by the Director General and an explanation for the decision.

If the Director General approves the standard, the Applicant will proceed to operationalize the standard in Step 14. If the Director General rejects the standard, the Applicant may return to Step

[35] In other words, 20 business days after the Technical Committee members receive the requested follow-up information from the Applicant via the Internal Reviewer or after the after the members inform the Internal Reviewer that they have no additional information requests following the Applicant's presentation in step 8.

1 to revise the standard and subsequently reapply, or proceed to Step 15 to file a one-time appeal of the Director General's decision.

The turnaround time for this step is 10 business days.

14. Applicant operationalizes standard

If the standard is approved by the Director General, then the Applicant may proceed to operationalizing the standard through completing the framework execution for that candidate standard.

15. Applicant submits appeal of decision

If the standard is not approved, the Applicant may choose to file a once-off appeal to the Minister of Minerals and Energy. In such cases, the Applicant will compile their justifications for appeal and submit to the Minister of Minerals of Energy.

The turnaround time for this step is 15 business days after the receipt of the *Standard Disapproval Letter* from the Internal Reviewer.

16. Minister of Minerals and Energy makes final appeal decision

The Minister will provide the Steering Committee with an opportunity to respond to the grounds of the appeal. The Minister will review the response and recommendations of the Steering Committee, the decision of the Director General, and the appeal filing from the Applicant to determine whether the standard should be approved or rejected.

The Minister will make the final determination based on the notes and recommendations from the Steering Committee and the appeal request submitted by the Applicant, and will provide documentation of their decision, including the reasons for the decision, to the Internal Reviewer, who will repeat Step 13 with the additional documentation from the Minister. If the decision is to not accept the standard (and deny the appeal), then this concludes the execution of the framework for the candidate standard. The Applicant may return to Step 1 to re-initiate the process after making needed revisions to the candidate standard. If instead the Minister determines that the standard should be accepted under the framework, then the Applicant proceeds to Step 14.

The turnaround time for this step is 30 business days.

A. GLOSSARY

TABLE 2: DEFINITION OF TERMS USED IN FRAMEWORK

Term	Definition for Framework
Additionality	Greenhouse gas emissions reduction or removal that would not have occurred in the absence of an offset crediting programme. A condition under which South African carbon dioxide equivalent emissions are no more than would occurred under a baseline scenario that did not include a carbon offsets programme
Baseline	A reasonable, conservative scenario estimate of the greenhouse gas emissions that would have likely occurred in the absence of a proposed carbon offset project.
Environmental integrity	.
COAS	The carbon offset administrative system, as defined and regulated by the Offset Regulations
Co-benefits	Additional environmental, social, and economic project benefits supplemental to primary benefit of greenhouse emissions reductions. Examples of co-benefits include avoidance of environmental degradation, climate adaptation, protection of habitats and wildlife biodiversity, energy security and resilience, rural electrification, jobs creation, sustainable development.
Environmental integrity	This condition requires greenhouse gas emissions reductions and removals associated with South African carbon offsets projects to be real, measurable, accurate, permanent, additional, independently verifiable, and unique. Environmental integrity mustensure "no harm" is done to the natural environment.
Expert Panel	Group of international climate change experts who will review initial pilot testing of proposed standards using the proposed carbon offsets framework.
Framework	Conceptual process for reviewing carbon offset standards for potential use in the South Africa carbon offsets programme.
Internal Reviewer	Representative of the Department of Mineral Resources and Energy (DMRE) assigned to perform initial, "threshold" test of proposed standards, review documentation submitted by standard developer for completeness, provide review notes to Technical Committee, review Technical Committee's recommendations regarding proposed standard, and liaise between the Technical Committee, Steering Committee, DMRE Director General, and other role players.
Leakage	An increase in greenhouse gas emissions outside a project boundary brought about by an offset project.
Offset	A measurable reduction or removal of greenhouse gas emissions that results because of a specific activity or project.
Offset scheme	The South African scheme developed in terms of the Offset Regulations for the listing, transfer, and retirement of offsets under COAS.
Permanence	A condition that exists when reduction or removals of greenhouse gas emissions are at low risk of reversal.
Project Steering Committee (PSC)	The South Africa interdepartmental team responsible for strategic direction of the project to develop the carbon offsets framework and guidebook.
Standard	A comprehensive technical document designed for the review of carbon offset projects that includes the following key components: (1) a government, technical, and administrative body; (2) a statement of project eligibility requirements; (3) requirements for the evaluations of projects; (4) requirements for crediting periods, renewal periods, and revocation of credits; (5) requirements for monitoring, reporting, and verification; and (6) rules to prevent double counting and uniqueness

Term	Definition for Framework
Steering Committee	The South African government team responsible for providing oversight for the execution of the offsets framework, reviewing the evaluations of the Technical Committee regarding individual candidate standards, making recommendations to the Director General, and organizing occasional reviews of the framework system.
Technical Committee	The South African interdepartmental team responsible for assessing standard eligibility for use in the South Africa carbon offsets programme using the carbon offset framework.
Transaction costs	Administrative costs associated with offset project design, validation, project approval, monitoring and reporting, verification, and carbon credit issuance.
Validation	Process of independent evaluation required to confirm a carbon offset project meets the requirements of the associated standard's rules and processes.
Verification	Process of independent evaluation to confirm reported greenhouse gas emissions reductions and removals are accurate in comparison to agreed-upon project criteria.

B. COMMON ELEMENTS OF CARBON OFFSET STANDARDS

This appendix sets out various categories in terms of which commentators and representative bodies have sought to categorize the key elements of a carbon offset standard or program. There is no uniformity between these; however, a number of commonalities can be identified, as shown in Table 3.

TABLE 3: COMMON CRITERIA FOR CARBON OFFSET STANDARDS

Commentator/ Body	Criteria
Kollmuss et al (2008) [36]	When commenting on the voluntary carbon market, Kollmuss *et al* identify the following shared features of standards: 1. The existence of Additionality and Baseline Methodologies 2. Eligibility requirements for project types accepted by each Standard 3. Project location 4. Start Dates and Crediting Periods for each Standard 5. Co-Benefits Requirements for each Standard 6. Project Auditing Requirements 7. Use by the Standard of a Registry 8. Rules on double counting
Kollmuss et al (2008b)[37]	In reviewing both compliance and voluntary offset standards and programs the authors identify the following: 1. Existence of an authority and administrative bodies 2. Requirements on project eligibility types including project priorities and disqualifications 3. Project location requirements 4. Requirements pertaining to project size 5. Requirements for project start dates 6. Limitations on crediting periods 7. Requirements for co-benefits 8. Additionality requirements 9. Quantification protocols 10. Validation and registration 11. Monitoring, verification and certification 12. Registration and fees
Lovell (2010)[38]	In relation to voluntary offset standards, Lovell identified the following as minimum criteria: 1. additionality (whether an offset project would have happened anyway), 2. the offset approval process (registries, verification, use of 3rd party auditors etc.), 3. project eligibility (e.g. whether to include industrial gas projects, forestry and so on), and

[36] A Kolmuss, H Zink, C Polycarp (2008), Making Sense of the Voluntary Carbon Market: A Comparison of Carbon Offset Standards, Stockholm Environmental Institute and Tricorona.
[37] A Kollmuss, M Lazarus, C Lee and C Polycarp (2008), A Review of Offset Programs: Trading Systems, Funds, Protocols, Standards and Retailers, Research Report, Stockholm Environment Institute.
[38] HC Lovell (2010), Governing the carbon offset market, *Climate Change* 1(3), 353-362. https://doi.org/10.1002/wcc.43

Commentator/ Body	Criteria
	4. sustainable development 'co-benefits' (such as job creation, improved local air quality etc., benefits that go beyond the project's greenhouse gas reductions).
World Bank Partnership for Market Readiness (2015)[39]	1. Geographic and sectoral (project type) eligibility requirements 2. Shared Principles and Goals: require environmental integrity and economic efficiency translated into: ▪ Eligibility of projects types under the program ▪ Processes for the development and approval of methodologies ▪ Additionality and baseline rules ▪ Requirements for third-party validation and verification ▪ Transparency and stakeholder participation 3. Requirements for Methodology Design: ▪ Bottom Up or Top Down Methodology development ▪ Use of Standardised Approaches 4. Governance Structures: Executive Bodies; Program Administrators, Advisory Boards, Third Party Auditors 5. MRV and Project Cycles: ▪ Project Registration Procedures including Validation ▪ Verification and Issuance Procedures 6. Sustainable development requirements or goals
Paris Agreement (2015)	Article 6.2 requirements for Internationally Transferred Mitigation Outcomes: 1. Must promote sustainable development 2. Must ensure environmental integrity 3. Must ensure transparency including in governance 4. Robust accounting to avoid double counting Whilst Article 6.2. does not necessarily represent minimum criteria of existing standards, in order to be tradeable under a future Article 6.2. ITMO mechanism, domestic offsets should satisfy these requirements. For this reason they have been included for consideration of what a domestic standard should entail.
International carbon reduction offset alliance (ICROA) Offset Standard Review Criteria (2017)[40]	In order to be included in the ICROA Code new offset standards must meet the following criteria: 1. The standard must be designed and managed by an independent organisation/group of organisers 2. The standard must have a robust governance process: must be transparent, independent decision makers must manage the standard; it must provide oversight to validator/verifier's work. 3. The standard must be linked to an independent publicly accessible registry to track credits and ensure uniqueness 4. Offsets are validated and verified by an independent organization 5. Offsets are unique

[39] Partnership for Market Readiness (2015),Overview of Carbon Offset Programs: Similarities and Differences, Technical Note 6.
[40] ICROA (2017), ICROA Offset Standard Criteria, Available at: https://www.icroa.org/resources/Documents/ICROA%20Offset%20Standard%20Review%20Criteria.pdf

Commentator/ Body	Criteria
	6. Offsets must be real 7. Offsets must be measurable 8. Offsets must be permanent 9. Offsets must be additional 10. Legal requirements to avoid environmental and social impacts must be fulfilled There are a number of remaining "principles" that are discretionary, including fulfilment of its "do no harm" principle, stakeholder consultation, and innovativeness.
Michaelowa et al (2019)[41]	1. Governance and accounting procedures: Most schemes have a governance body responsible for overseeing the activity cycle and a dedicated GHG Registry. 2. Defined project scope and eligibility: Most schemes allow for both projects and programs of activities (PoAs); have defined crediting periods, define eligible host countries/jurisdictions, and provide explicit project type exclusions. 3. Environmental integrity requirements: Most schemes have requirements related to MRV, additionality, double-counting. 4. Monitoring, reporting and verification (MRV) requirements: Methodologies are often developed using a bottom-up manner and monitoring approaches are typically defined within methodologies. 5. Sustainable development (SD) contributions: Most schemes refer to sustainable development, though approaches vary. 6. Linkages with other carbon pricing instruments: Most offsets mechanisms are linked to related policies in some way.
GHG Management Institute and Stockholm Environmental Institute (2019)[42]	The authors identify the following three key components of an Offset Program: 1. Rules and eligibility requirements for project design and implementation, such as additionality requirements, baseline methodologies, accepted project types, and procedures for project validation. 2. Rules for monitoring, reporting, verification, and certification. 3. Use of registration and enforcement mechanisms that clarify ownership, assist with trading and retirement of credits, and help prevent double counting.
CORSIA Emissions Unit Eligibility Criteria (2019)[43]	The CORSIA Emissions Unit Eligibility Criteria identifies the following key design elements that offset credit programs should include: 1. Clear methodologies and a defined process for the development of new methodologies 2. Clear eligibility criteria related to types of activities (project vs. program of activities), sectors, project types, and geographic locations 3. Procedures for the issuance and retirement of credits 4. Clear and transparent procedures for the identification and tracking of carbon credits 5. Clearly defined processes that clarify ownership of credits 6. Procedures for the validation and verification, including accreditation processes for validators and verifiers.

[41] A Michaelowa, I Shishlov, S Hoch, P Bofill and A Espelage (2019), Overview and Comparison of existing carbon crediting schemes, Nordic Initiate for Cooperative Approaches and Perspectives Climate Group.
[42] GHG Management Institute and the Stockholm Environmental Institute (n.d.), "Carbon Offset Guide," Available at: http://www.offsetguide.org/understanding-carbon-offsets/carbon-offset-programs/protocols-standards/
[43] International Civil Aviation Organization (2019), CORSIA Emissions Unit Eligibility Criteria. Available at https://www.icao.int/environmental-protection/CORSIA/Documents/ICAO%20document%2009.pdf

C. DRAFT APPLICATION OF FRAMEWORK TO INTERNATIONAL STANDARDS

This appendix summarizes information about the three international standards (Clean Development Mechanism (CDM), Verified Carbon Standard (VCS), and Gold Standard (GS) – as it pertains to the criteria of the draft framework. Table 4, Table 5, and Table 6 show the information broken out by the category of the criteria.[44]

TABLE 4: APPLICATION OF GOVERNANCE AND ADMINISTRATION CRITERIA TO INTERNATIONAL STANDARDS

Governance and Administration Criteria	CDM	VCS	GS
LEGAL ENTITY The standard is a recognised legal entity (under South African law) and has managerial and technical personnel with the requisite authority and resources to satisfy the following sub-criteria:			
a. Has a defined and publicly available institutional structure, with designated roles and responsibilities;	Clearly defined structure including UNFCCC Secretariat, CMP, Executive Board, working groups, and technical panels	Registered nonprofit corporation with bylaws that lay out the structure.	Registered nonprofit corporation with a clearly defined structure
b. Identifies the required competency levels and training requirements of governance, technical, and administrative staff;	Clearly specified competence levels, experience, and education listed for all panel membership, DOEs, EB members, etc.	Competency information detailed in bylaws	

[44] Information regarding CDM, VCS, and GS that appears in Tables 4 through 6 below are drawn from a comprehensive review of the following sources, unless otherwise indicated in the corresponding table: Gold Standard for the Global Goals, version 1.2 (2019); The Gold Standard Foundation (2013), Afforestation/Reforestation (A/R) Requirements; The Gold Standard Foundation (2018), 2018 Annual Report: Pathways to Scale; The Gold Standard Foundation (2019), Standard Documents, Available at https://www.goldstandard.org/project-developers/standard-documents; The Gold Standard Foundation (2019), GS Registry, Available at https://registry.goldstandard.org/projects?q=&page=1; The Gold Standard Foundation (2019), Technical Advisory Committee Governance, Guidelines, and Responsibilities; The Gold Standard Foundation (2019), Stakeholder Consultation and Engagement Requirements, Version 1.2; Republic of South Africa, DMRE (2004), Sustainable Development Criteria for Approval of Clean Development Mechanism Projects by the Designated National Authority of the CDM; UNEP (2005), Introduction to the CDM; (UNFCCC (2019), CDM Registry, Available at https://cdm.unfccc.int/Projects/projsearch.html; UNFCCC (2019), CDM Methodology Booklet, 11th edition; UNFCCC (2018), Achievements of the Clean Development Mechanism 2001-2018; UNFCCC (2013), Afforestation and Reforestation Projects under the Clean Development Mechanism; UNFCCC (2012), Tool for the demonstration and assessment of additionality (Version 7.0.0) (EB 70 report), Bonn, Germany: United Nations Framework Convention on Climate Change; UNFCCC (2011), Guidelines on the Demonstration of Prior Consideration of the CDM (Version 4) (EB 62 report, annex 13), Bonn, Germany: United Nations Framework Convention on Climate Change; UNFCCC (2005), List of Sectoral Scopes, Version 4; Verra (2019), The VCS Program, Available at https://verra.org/project/vcs-program/; Verra (2019), VCS Registry, Available at https://www.vcsprojectdatabase.org/#/home; Verra (2019), VCS Standard v 4.0; Verra (2018), Board of Directors; Verra (2016), VCS Fact Sheet; World Bank Partnership for Market Readiness (2015), Overview of Carbon Offset Programs: Similarities and Differences, World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO; World Wildlife Fund (2018), Making Sense of the Voluntary Carbon Market: A Comparison of Offset Standards.

Governance and Administration Criteria	CDM	VCS	GS
c. Develops and maintains systems to ensure the independence, accuracy, and integrity of the standard,	The UNFCCC is ultimately responsible for ensuring the independence, accuracy, and integrity of the standard through regular meetings of the EB at least three times a year, where updates and revisions are made and voted upon that reflect scientific advances and best practices.	The VCS was developed and is continually revised over time by an expert committee with inputs from thousands of stakeholders. Revisions reflect scientific advances and best practices.	GS was developed by a group of NGOs seeking to create a more rigorous and sustainable development-oriented carbon offset standard. GS has evolved into GS for the Global Goals and is continually revised over time by an expert committee with inputs from thousands of stakeholders. Revisions reflect scientific advances and best practices.
d. Ensures management and personnel are free from any undue internal and external commercial, financial, and other influences that may adversely affect the quality of their work, the integrity of the standard, or create real or perceived conflicts which create or may create unfair advantage for any person or organization;	"While individuals selected to the Executive Board of the Clean Development Mechanism are made to swear under oath that no conflicts of interest will get between themselves and the companies they regulate, there are no rules or criteria requiring members to recuse themselves from deliberations when a conflict arises or is perceived." [Source: NY Times]	Verra requires all board members and employees to abide by strict conflict of interest policies and to declare on an annual basis that they have not engaged in any conduct that violates Verra's Conflict of Interest Policy. In addition, board members are required to report any potential conflicts of interest at each meeting of the board and to recuse themselves where any conflicts exist. Finally, employees are required to annually disclose any gifts (regardless of value) they have received over the prior year from anyone who is doing business, has done business, or is seeking to do business with Verra. In addition, Verra has a whistleblower policy.	The GS Foundation has policies in place to prevent program staff, board members, and management from having any possible conflict of interest. These policies are memorialized in the Employee Handbook (which each employee is required to sign), independent contractor agreements (Conflict of Interest Declaration), and the Board Manual (memorandum on fiduciary duties under Swiss law). Each member of GS staff, board, and outside vendor teams have an obligation to keep the Secretariat apprised of any conflicts throughout their term of service. Where conflicts have arisen and been disclosed in the past, they have been managed through meeting or vote recusal.
e. Ensures the protection of confidential information and proprietary rights, including procedures for protecting the electronic storage and transmission of information and results;	Access to confidential information is restricted.	Access to confidential information is restricted.	Access to confidential information is restricted.
f. Has documented rules and operating procedures (a management system), with well-functioning storage and retrieval		As part of its accounting policies and procedures, Verra has a records retention policy that identifies the	The GS registry has strong security systems, with Amazon used as its data center supplier and auth0 used for data authentication.

Governance and Administration Criteria	CDM	VCS	GS
systems for all documents and records; and		types of documents that must be retained and for how long.	
g. Demonstrates adequate operational resources and financial stability, including adequate liability insurance.	The CDM is part of the UNFCCC, which is financially stable under the United Nations.	Verra is a registered 501(c)(3) not-for-profit organization under the laws of the United States of America. Verra has been continuously governed and operational since 2007 when it was first established in Switzerland, and 2009 when it was established in the US. Verra has a diversified source of revenues and thus does not depend entirely on the VCS Program for financial sustainability.	GS is a professionally run non-for-profit organisation headquartered in Geneva, Switzerland. The Gold Standard Foundation has a plan for the long-term administration of the standard across multiple decades.
GOVERNING BODY The standard is governed by an authority or committee composed of at least three members that meets formally at least annually, has final decision-making and oversight responsibilities, and oversees the functions and duties of the technical and administrative bodies. The governing body makes decisions in accordance with publicly available rules and procedures of the standard, and reviews these rules and procedures at least annually, based on recommendations made by the administrative body and technical body.	The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) is the ultimate decision-making body of the CDM Parties to the Kyoto Protocol. The CMP meets annually.	VCS Board: Governance board and approves all substantive changes to the standard or the program, procedures, new standards, or guidelines. Between three and fifteen members, per the Bylaws. Assessment of potential members will consider diversity, age, skills and experience in the context of the Board of Directors' needs. Meets at least annually, and potentially more frequently.	The Gold Standard Board of Directors: Provides financial oversight and strategic governance of the Gold Standard Foundation. Seven members on the board.
TECHNICAL BODY The standard has a Technical Body to consider validation and verification recommendations made by third-party auditors, prior to project registration and credit issuance by the Governing Body. The Technical Body also review and approve the methodologies employed by the projects, whether these are developed specifically for the	Secretariat: provides institutional and technical support to the EB and its panels and working groups, and supports the EB's broader supervisory role for the CDM processes. Methodological Bodies: Meth Panel (MP) (Methodologies Panel); SSC WG (Working group for small-scale CDM project activities)	AFOLU Steering Committee: Oversight of the VCS' AFOLU program, including development of new frameworks and technical issues AFOLU Expert Assessment Panel: Reviews qualifications of AFOLU experts and recommends candidates to VCS Some VCS advisory groups are ad-hoc groups of outside experts,	The Gold Standard has a Technical Governance Committee as well as a Technical Advisory Committee (TAC). The TAC is an independent body composed of market specialists that provide expertise, guidance, and decisions on methodology approval, rule changes and appeals. Land-use & Forests Advisory Panel. A specialist advisory group

Governance and Administration Criteria	CDM	VCS	GS
proposed projects or are methodologies already approved under other international standards (i.e. CDM or VCS approved methodologies) and satisfies the following sub-criteria:	CCS WG (Working group on carbon dioxide capture and storage) AR WG (Working group on afforestation and reforestation project activities) Methodological Bodies support the EB in the creation of methodological standards, guidelines and clarifications, and other methodological matters applicable to proposed and registered CDM project activities.	created for specific purposes, and disbanded when work is complete AFOLU Technical Working Groups Standardized Methods Steering Committee VCS Program Advisory Group: Multi-stakeholder body that helps ensure VCS Program continues to serve its users in an effective and efficient manner and drives practical and robust solutions to mitigate climate change. [Source: Verra]	established to support the development of GS LULUCF scheme [Source: Gold Standard]
a. Composed of at least 3 members;	MP - 10 members, SSC WG – 5 members and 1 MP member, AR WG – 5 members, CCS WG – 5 members and 1 MP member.	AFOLU Steering Committee - 8, VCS Advisory Group - 12 members, AFOLU Expert Panel - 9 members.	The Technical Governance Committee has 16 members.
b. Members hold advanced university degrees in economics, environmental studies, engineering or related fields and have knowledge, direct professional experience, and competency pertaining to carbon offset accounting methodologies and principles;	Competence requirements for experts applying for MP membership include: - Familiarity with CDM and CMP; - Experience and/or knowledge relevant to the CDM project activity cycle; - Relevant working experience of at least three years on methodological issues related to project-based mechanisms; - Demonstrated technical/scientific expertise, inter alia through peer-reviewed publications, in at least one of the following areas: (a) Baseline and monitoring methodologies; (b) Implementation of CDM project activities; - Ability to communicate effectively, in written and verbal English; -Excellent drafting skills, strong operational and analytical skills, and ability to work as a member of a team;	Requirements for VCS Advisory Group: - Strong knowledge of voluntary and/or compliance GHG program mechanics, including the development of projects, the use of quantification methodologies, and the role of validation/verification bodies. Strong technical expertise is desirable. - Experience working with a variety of carbon standards, including the UNFCCC's CDM, voluntary market standards, and relevant mechanisms that may eventually be established under Article 6 of the Paris Agreement. - Strong understanding of carbon market dynamics, including the drivers of corporate demand in the voluntary carbon market and government climate change policies. - Direct experience selling and/or purchasing carbon credits is desirable.	Market experts that can provide expertise, guidance and decisions on methodology approval, rule changes and appeals.

Governance and Administration Criteria	CDM	VCS	GS
	- Advanced university degree in economics, energy, environmental studies, natural sciences, or engineering.	- User or other stakeholder of the VCS Program.	
c. Has sufficient diversity of expertise and experience to fully evaluate the range of issues that may be raised by projects and methodologies of the standard; and	See above	See above	See above
d. Meets formally at least 2 times per year and considers each project registration and credit issuance individually.	Typically meet 4-5 times a year.	Meet at least twice a year.	NA
ADMINISTRATIVE BODY The standard has the administrative capacity for the operationalization of the standard, keeping proper record of approved projects and carbon credits issued, and reporting activities to the governing body at least annually.	The Executive Board of the CDM as defined in Article 12 of the Kyoto Protocol. The EB is comprised of 10 members from parties to the Kyoto Protocol as follows: One member from each of the five United Nations regional groups; Two other members from parties included in Annex 1 of the protocol; Two other members from parties not included in Annex 1; and one representative of the small island developing states. The EB meets at least 3 times a year.	VCS Association (VCSA) manages the VCS Program day to day operations: - Conducts accuracy reviews of projects prior to registration and issuance. - Oversees the validation/verification bodies operating under the VCS Program - Manages the methodology approval process. - Convenes steering committees, advisory committees, or working groups to support its work.	The Gold Standard Secretariat is responsible for: -Stakeholder consultation approval. - Review and approval of registration of projects. - Review and approval of issuance of credits. - Strategic and technical development, including new methodology and tool approvals, operational performance. - Registry management.

Governance and Administration Criteria	CDM	VCS	GS
STAKEHOLDER CONSULTATION The standard developer has conducted appropriate stakeholder engagement around the design and procedures of the standard, including posting public notice of their intent to submit the standard for approval under the framework; providing full documentation of the standard for review and comment by interested parties; responding to all comments received in writing; and documenting all stakeholder comments and responses.	NA	NA	NA
GUIDELINES AND PROCEDURES The standard provides a clear and up-to-date guidebook on the procedures and processes project developers must follow for methodology approval, project approval/registration, review processes or procedures for project developers to request additional information or clarity on outcomes, the issuance of credits, and ongoing monitoring.	The CDM Methodology Booklet 11th edition, updated Nov 2019	VCS Standard v4.0, updated Sept. 2019	Gold Standard for the Global Goals Principles & Requirements, Version 1.2, updated Oct. 2019
ELIGIBILITY The standard lays out clear eligibility requirements pertaining to geography, size, and project type that are consistent with existing laws and regulations.	Requirements for validation and verification differ according to project size and type. Projects must take place in non-Annex I countries. Eligible sectors: – Renewables – Energy Efficiency – Waste Management – Agricultural Manure – Afforestation/reforestation – Agricultural Practice – Methane abatement (coal mines) – N_2O Abatement – Other industrial gases	Requirements for validation and verification differ according to project size and type, projects can take place anywhere as long as they comply with local laws. Eligible sectors: – Renewables – Energy Efficiency – Waste Management – Agricultural Manure – Afforestation/reforestation – Agricultural Practice – Methane abatement (coal mines) – N_2O Abatement – Other industrial gases	Requirements for validation and verification differ according to project size and type, projects can take place anywhere as long as they comply with local laws. Eligible sectors: – Renewables – Energy Efficiency – Waste Management – Agricultural Manure – Afforestation/reforestation

Governance and Administration Criteria	CDM	VCS	GS
		– ODS Destruction – Reduced Emissions from Deforestation & Degradation – Improved Forest Management – Avoided Conversion of Grasslands & Shrublands – Wetlands Restoration & Conservation	
PROJECT TRACKING The standard includes a mechanism to track the progress (or cessation) of all projects submitted to the standard, including statuses of approved, pending, withdrawn, rejected, credits issued, etc.	All projects, their statuses, and associated documents are posted in the CDM registry.	All projects, their statuses, and associated documents are posted in the VCS registry.	All projects, their statuses, and associated documents are posted in the GS registry.
TRANSPARENCY The standard includes a mechanism for each credit generated to have all records and associated documentation (including project plans, monitoring reports, validation and verification reports, etc.) to be publicly available (online).	All associated documents are posted for projects in the CDM registry.	Section 3 of the VCS Program Guide requires that "There must be sufficient and appropriate public disclosure of GHG related information to allow intended users to make decisions with reasonable confidence." All associated documents are posted for projects in the VCS registry.	All associated documents are posted for projects in the GS registry.
NATIONAL APPROVAL The standard accommodates review and approval of all projects and programmes of activities by the South Africa government.	DNA approval is required for all projects. DNA verifies that project is voluntary and verifies sustainable development contribution.	Sufficient to show that projects are compliant with local and national environmental laws; no explicit host country approval is necessary.	Sufficient to show that projects are compliant with local and national environmental laws; no explicit host country approval is necessary.
REGISTRY The standard uses a secure registry (internal or outsourced) that assigns a unique serial number for each credit, tracks ownership and identifies the credit's current status, requires periodic accounting audits, includes a mechanism to transfer credits to COAS for use as offsets, and ensures that all registry personnel are free of	CERs in registry with unique serial number: https://cdm.unfccc.int/Projects/projsearch.html	VCUs in registry with unique serial number: https://verra.org/project/vcs-program/registry-system/	GS CERs and GS VERs assigned unique serial numbers, can be tracked in registry: https://registry.goldstandard.org/projects?q=&page=1

Governance and Administration Criteria	CDM	VCS	GS
financial, commercial, and fiduciary conflicts of interest, including financial interests in the carbon offsets generated.			
CREDITING PERIODS The standard includes clear crediting periods that allow for reassessment of the project at regular renewal intervals and the potential revocation of credits and aligns with South African carbon tax cycles and/or international offset markets.	Non-Forestry: 10 years non-renewable or 7 years with the option to renew up to two times (21 year maximum) AFOLU: 30 years non- renewable or 20 years renewable twice (60 year maximum)	Non-Forestry: 10 years non-renewable or 7 years with the option to renew up to two times (21 year maximum) AFOLU: Minimum 20 years renewable four times (100 year maximum) or 100 years non-renewable For projects with harvesting, length of crediting period must include at least one complete harvest/cutting cycle	Non-Forestry: 10 years non-renewable or 7 years with the option to renew up to two times (21 year maximum) AFOLU: Minimum 30 years; Maximum 50 years
PUBLIC PARTICIPATION The standard requires projects to provide transparency in all matters; public comment on methodologies, individual offset projects, and changes in procedures; and public participation including notification of affected stakeholders and mechanisms to respond to objections raised.	30-day public comment period Two rounds of stakeholder comments, in which project developer must: 1) Invite local stakeholders to comment on the project; 2) Provide a summary of the comments received; 3) Review comments received and submit a report to the DOE demonstrating how relevant concerns were addressed.	30-day public comment period. Project proponents demonstrate to the VVB what action they have taken in response to a local stakeholder consultation as part of validation.	Public participation requirements include: 1)Public comment period; 2)Appeals body and public grievance mechanism to remediate issues throughout crediting period; 3) Detailed guidelines for stakeholder consultation; must last at least three months and is ongoing while the project moves through the project cycle, with comments continually informing design.
REVISION MECHANISM The standard includes provisions for how the standard may be modified after initial approval, which must include notification and explanation to the South Africa national government.		The methodology approval process includes the evaluation and approval of a methodology concept by Verra, a 30-day public comment period for the full draft methodology element, two independent assessments by properly accredited validation/verification bodies (VVBs), and final review and approval of the methodology by Verra. Note that Verra also reviews the methodology documentation prior to the public comment period,	Revision of an existing methodology can be triggered by a request from a potential applicant intending to certify a project under GS (though it can be triggered by any stakeholder). Revisions may also be triggered by GS where there is an identified need to do so. First a track-change version of the methodology with proposed changes is required to be developed. Based on the review of proposed changes, GS technical staff assesses if there is need for involving external

Governance and Administration Criteria	CDM	VCS	GS
		and reviews the updated methodology documentation and assessment reports at the end of each VVB assessment. Minor methodology element revisions and certain new modules and tools may be approved through a streamlined methodology approval process, whereby the approval process is the same as the full methodology approval process, with the exception that only one VVB assesses the methodology.	and independent subject matter experts. If a need is identified the revised methodology is sent to experts for review and comments. The consolidated comments from GS review and external experts' review are sent to the Technical Advisory Committee (TAC). The TAC may provide any additional comments before consolidated feedback is sent to the applicants. There are 2-3 rounds of discussions between applicants and GS before all issues can be closed, after which the proposed revisions are reviewed and decided upon by TAC. If revisions are approved by TAC, then revision is made. This process typically takes 2-4 months. General revisions to GS rely on public stakeholder consultations to make rule-making transparent, and informed. The GS Public Stakeholder Consultation Policy covers public comments provisions and requirements, and how they are considered.

TABLE 5: APPLICATION OF ENVIRONMENTAL INTEGRITY CRITERIA TO INTERNATIONAL STANDARDS

Environmental integrity Criteria	CDM	VCS	GS
REAL REDUCTIONS The standard requires sufficient and credible evidence to demonstrate the real reductions of each tonne of CO_2e credited, so that emission reductions or removal enhancements are neither overestimated nor understated, and	Emissions reductions proven by validation and verification by a Designated Operational Entity (DOE).	Emissions reductions proven by validation and verification by a Validation and Verification Body (VVB). VCS Standard v4.0	Emissions reductions proven by validation and verification by a Gold Standard Validation and Verification Body (GS VVB). Gold Standard for the Global Goals Principles and Requirements, version 1.2

Environmental integrity Criteria	CDM	VCS	GS
measured against accepted baselines.			
UNIQUE The standard includes a mechanism to ensure that there is no risk of double counting the same emission reductions or removal enhancements across registries or other programmes.	In-house registry with unique serial numbers for offsets.	In-house registry with unique serial numbers for offsets.	In-house registry with unique serial numbers for offsets.
ADDITIONALITY The standard uses credible methodologies to ensure that projects' emission reductions or removal enhancements would not have otherwise occurred in the absence of the project, and include sub-criteria:	UNFCCC additionality tool used; rules include: 1) Identification of alternatives to project activity; 2) Investment analysis to determine that proposed project activity is either (a) not the most financially attractive or (b) not financially feasible; 3)Barrier analysis; 4)Common practice analysis. Usually determined project-by-project, some small-scale positive lists developed, and technologies on a positive list automatically considered additional.	VCS Program rules require projects to demonstrate additionality and set an appropriate baseline in accordance with the applied methodology. New methodologies can include new approaches for the demonstration of additionality, either within the methodology or as a separate tool; both subject to VCS Methodology Approval Process. VCS Standard v4.0	Several methodologies under development applying a positive list for additionality. UNFCCC additionality tool used, including small-scale projects. Validated by the DOEs and further checked by the GS Secretariat. Positive list approach for GS micro-scale projects. Gold Standard for the Global Goals Principles and Requirements, version 1.2
a. Require either a project-specific baseline or a standardized baseline that has been approved by the Technical Body and the South African government or approved by one of the three accepted international programmes;	Baseline set according to approved methodologies on a project-by-project basis, in one of three ways (UNFCCC, 2018b): – existing actual or historical emissions; – emissions from a technology that represents an economically attractive investment; or – average emissions of similar project activities undertaken in the previous five years under similar circumstances and	Determined on a project-by-project basis, although standardized approaches are used and under development for some project types. "The baseline scenario for the project shall be determined in accordance with the requirements set out in the methodology applied to the project, and the choice of baseline scenario shall be justified" (VCS Standard 4.0) AFOLU projects must reassess the	Determined project-by-project. ""Baseline" means the amount of greenhouse gas emissions that would be produced in the absence of the carbon credit project, also known as the business-as-usual scenario, which forms the basis for calculating a project's emissions reductions and helps determine additionality." (The Gold Standard Requirements) Baseline setting in VER projects is

Environmental integrity Criteria	CDM	VCS	GS
	whose performance is among the top 20% of their category. Standard approaches used and under development for some project types.	baseline every 10 years and have this validated at the same time as the subsequent verification. VCS Standard v4.0	similar to that in CDM. Gold Standard for the Global Goals Principles and Requirements, version 1.2
b. Prohibit issuance of credits for actions/projects that are required by law;	Baseline requirements account for existing laws and mitigation targets.	Baseline requirements account for existing laws and mitigation targets.	Baseline requirements account for existing laws and mitigation targets.
c. Require that technologies utilized (if any) emit less GHGs than comparable technologies;	NA	NA	NA
d. Ensure any novel additionality testing approaches are approved by any of the three accepted international programmes or are approved by the Technical Body, subject to public engagement, and approved by the South Africa government; and	NA	New methodologies can include new approaches for the demonstration of additionality, either within the methodology or as a separate tool; both are subject to VCS Methodology Approval Process VCS Methodology Approval Process v3.7	New methodologies can include new approaches for the demonstration of additionality, either within the methodology or as a separate tool; both are subject to GS Methodology Approval Process - see the Revision Mechanism in Governance
e. Ensure that any positive lists (which designate additionality by default for a type of offset activities) are reasonable for South Africa, approved by the Technical Body, subject to public engagement, and approved by the South Africa government.	NA	For methodologies or modules using an activity method that uses the activity penetration option for establishing a positive list, an interim assessment shall be undertaken by the VCSA within three years of the initial or previous (where the activity method has already undergone post-approval assessment) approval of the activity method. VCS Methodology Approval Process v3.7	GS uses the CDM positive list, determined by the CDM's SSC Working Group and the CDM-EB (EB meeting – 63). Project types included in the positive list are deemed to have inherent barriers in their operation and maintenance, thereby making them a strong case for needing carbon revenue. Gold Standard does not have a specific formal process in place to update this positive list of projects and would rely on the CDM working group to update this list as appropriate.
MEASURABILITY The standard ensures that all measurement of emission reductions and removal enhancements are based on robust	CDM requires all projects to apply an eligible CDM methodology. The CDM methodology will set out the procedure for the monitoring and	The VCS requires all projects to apply an eligible VCS methodology. VCS methodologies set out the procedures for determining the	All GS projects are required to use GS or CDM approved quantification methodologies that include guidelines on accurate

Environmental integrity Criteria	CDM	VCS	GS
data and conservative methodologies, approved by the Technical Body and the South Africa government or approved by one of the three accepted international programmes.	measurement of the appropriate data parameters for a given project activity. A DOE verifies emission reduction of a registered CDM project activity by cross-checking of monitoring data.	baseline scenario, and the procedures for the monitoring and measurement of the appropriate data and parameters for a given project activity, including a full and transparent estimation of uncertainty. These methodologies also set out the quantification methods for baseline, project and leakage emissions, which are ultimately used to determine the net emission reductions or removals of a project. VCS Standard v4.0	measurement methods for generating emission units. Gold Standard for the Global Goals Principles and Requirements, version 1.2
PERMANENCE The standard requires demonstration that projects' emission reductions and removal enhancements are permanent or includes mechanisms to account for, address, and compensate for risk of non-permanence/reversal.	Categorizes carbon offsets as either temporary Certified Emission Reductions (t-CERs) which are valid for five years or long-term Certified Emission Reductions (l-CERs), which may be valid for the lifetime of a project and are reassessed every five years.	AFOLU pooled buffer account, which sets aside percentage of issued VCUs and can be withdrawn when emission reductions are reversed. Amount of buffer credits determined on a project-by-project basis with the AFOLU Non-Permanence Risk Tool. VCS Standard v4.0 AFOLU Non-Permanence Risk Tool	All land use and A/R projects transfer 20% of credits into the GS Compliance Buffer account, which is used to mitigate losses if the compliance pathway mechanism fails to prevent loss of sequestered carbon. Gold Standard for the Global Goals Principles and Requirements, version 1.2 GHG Emissions Reductions & Sequestration Product Requirements
LEAKAGE The standard requires identification of leakage risks via all pathways including likely market adjustments and, where leakage risk exists, rigorous analysis of the potential magnitude of the leakage and adjustments of the net carbon reduction to address the magnitude.	Leakage is defined as "net change of anthropogenic emissions by sources of greenhouse gases which occurs outside the project boundary, and which is measurable and attributable to the CDM project." Project developers must deduct leakage which is "measurable" and "attributable" to the project from the emission reductions calculated against the baseline. CDM has tools	Potential for leakage must be identified and quantified per the applied methodology, depending on project type and size. Any leakage shall be subtracted from the number of GHG emission reductions and removals eligible to be issued as VCUs. Integrated Forest Management (IFM) projects have pre-determined Market Leakage Discount Factors that must be applied to those projects emission reduction	GS has tools and methods to calculate leakage based on project type. GS requires project developers to investigate possible leakage sources, and discount baseline emissions accordingly. All land-use and forest projects must assess leakage following their applicable methodology (each methodology provides detailed guidance on type of leakage to be accounted for and how to be accounted for). Leakage is accounted

Environmental integrity Criteria	CDM	VCS	GS
	to calculate leakage from different project types.	calculations. VCS Standard v4.0	for and discounted from the carbon units generation of a project on the first year of the crediting period. Gold Standard for the Global Goals Principles and Requirements, version 1.2
VALIDATION The standard uses third-party validation of all methodologies and data used in project development, prior to project registration.	Project documents go to the DOE for validation. If successful, they go to the DNA and undergo public comment. If approved by the DNA, after close of public comment period, project documents receive final validation by DOE.	After project documents have been submitted to Verra, they are submitted to a VVB. The VVB assess documents and if successful project documents receive final validation by VVB. VCS Standard v4.0	Once a project is listed, it has two years to reach the final project design certification phase through validation by a GS VVB. Project documents are submitted to a GS VVB. GS VVB conducts a site visit. If successful, the project documents receive final validation by the GS VVB. Gold Standard for the Global Goals Principles and Requirements, version 1.2
MONITORING AND REPORTING The standard requires ongoing monitoring and specified periodic reporting of projects' emission reductions/removals.	Monitoring pursuant to initial monitoring report.	Monitoring pursuant to initial monitoring report. VCS Standard v4.0	Annual reporting required after initial verification. Gold Standard for the Global Goals Principles and Requirements, version 1.2
VERIFICATION AND CERTIFICATION Before credits can be issued, the standard requires *ex-post* verification conducted by third-party auditor who is either internationally registered under CDM, VCS, or GS or nationally accredited by SANAS using a certification at least as rigorous as ISO 14065. The verification body provides a certification statement attesting to the GHG emissions reductions/removals of the project achieved under that monitoring period.	Independent ex-post determination by a DOE of the monitored reductions in emissions. CERs cannot acquire value in the international carbon market unless verified.	Independent ex-post determination by a VVB of the monitored reductions in emissions. VCUs cannot acquire value in the international carbon market unless verified. VCS Standard v4.0	An initial verification is completed either within two years of the project implementation date or design certification, whichever is later. Independent ex-post determination by a GS VVB of the monitored emissions reductions. Includes a site visit. If approved, the project becomes eligible for issuance of GS CERs, GS VERs, or Impact Statements. Gold Standard for the Global Goals Principles and Requirements, version 1.2

TABLE 6: APPLICATION OF SOCIAL, ECONOMIC, AND ENVIRONMENTAL EFFECTS CRITERIA TO INTERNATIONAL STANDARDS

Social, Economic, and Environmental Effects Criteria	CDM	VCS	GS
EMPLOYMENT The standard requires demonstration that projects will not have an adverse impact on employment opportunities for vulnerable groups (i.e. youth, disadvantaged groups, and/or women).	Consideration from SA DNA criteria: Impact of the project on employment levels (specify the number of jobs created/lost; the duration of time employed, distribution of employment opportunities, types of employment, categories of employment changes in terms of skill levels and gender and racial equity); Impacts of the project on local skills development	The project proponent must communicate all relevant laws and regulations covering workers' rights in the host country. VCS Standard v4.0, 3.16 Safeguards	Projects must apply principles of non-discrimination, particularly gender-based discrimination, equal treatment, and equal pay for equal work. Project developers must ensure there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2
SUSTAINABILITY The standard requires demonstration that projects are not in conflict with the sustainable development goals of South Africa.	Sustainability criteria determined by host country DNA and DNA approval required for project registration, No ex-post verification requirement. No universal sustainable development metric applied to all projects. CDM sustainable development co-benefit description tool (SD tool) assists to determine sustainable development co-benefits of a CDM project activity or PoAs. The use of the SD tool is entirely voluntary.	Project proponents are required to describe how the project contributes to achieving any nationally stated sustainable development priorities, including any provisions for monitoring and reporting same. This requirement is publicly available in Section 1.13 of the VCS Project Description Template, v3.3 and Section 1.10 of the VCS Monitoring Report Template, v3.4. VVBs are required to identify, discuss and justify conclusions regarding the sustainable development contributions of the project within their auditing documentation. This requirement is publicly available in Section 3.1 of the VCS Validation Report Template,	Sustainability provisions include: – Contribution to at least three SDGs; – Metrics to assess SDGs defined in monitoring plan; – SDG validation and verification required by GS VVB, ex-ante and ex-post; – Social, economic, environmental and ecological safeguard principles. Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2

Social, Economic, and Environmental Effects Criteria	CDM	VCS	GS
		v3.4 and Section 4.1 of the VCS Verification Report Template, v3.4.	
ECONOMIC DEVELOPMENT The standard requires demonstration that projects will not have an adverse impact on local economic development.	Consideration from SA DNA criteria: – Impact of the project on existing economic activity in the area; – Contribution of the project to the development of previously underdeveloped areas or specially designated development nodes.	The project proponent is charged with identifying potential negative environmental and socio-economic impacts, and taking take steps to mitigate these impacts. VCS Standard v4.0, 3.16 Safeguards	Project developer is required to demonstrate financial sustainability of projects implemented, including those that occur beyond Project Certification period. Projects must consider economic impacts and demonstrate a consideration of potential risks to the local economy and how these have been taken into account in project design, implementation, operation, and after the project has concluded. Particular focus is given to vulnerable and marginalised social groups in targeted communities and to ensure benefits are socially-inclusive and sustainable. Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2
RIGHTS OF INTERESTED AND AFFECTED PARTIES The standard requires demonstration that projects will not impair the rights of local communities and stakeholders.	Public comment and stakeholder comment periods required. Consideration from SA DNA criteria: – Alignment with local developmental objectives; – Impact of the project on the provision of, or access to, basic services to the area; – Impact of the project on the relocation of communities (if applicable); – Impact of the project on the provision of social amenities to the community in which the project is situated; – Impact of the project on community social structures;	The project proponent is supposed to demonstrate respect for local stakeholders' property rights and when feasible, take measures to help secure rights. Projects are required to avoid encroachment on private, stakeholder, or government property and relocation of people from their lands without consent. The project may affect property rights if free, prior, and informed consent is obtained from those concerned and a transparent agreement has been reached that includes provisions for just and fair compensation. In the event there are any ongoing or unresolved conflicts over property	Mandatory requirements and assessment questions addressed in GS Safeguarding Requirements, include: – GS does not support projects that may contribute to violations of a State's human rights obligations and core international human rights treaties, and seeks to support the protection and fulfilment of human rights. – Project must avoid community exposure to increased health risks and must not adversely

Social, Economic, and Environmental Effects Criteria	CDM	VCS	GS
	– Impact of the project on social heritage; and – Equitable distribution of project benefits	rights or usage or resources, the project must not undertake any activity that could exacerbate the conflict or influence the outcome of an unresolved dispute. VCS Standard v4.0, 3.16 Safeguards	affect the health of the workers and the community. – Local communities must be informed of their rights under Applicable Law, the scope and nature of the proposed commercial development; and the potential consequences of such development. – Project must provide for equitable sharing of benefits from commercialisation of knowledge, innovation, or practice, consistent with their customs and traditions. – Project must not involve or be complicit in the involuntary relocation of people. Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2
ENVIRONMENTAL QUALITY The standard requires demonstration, in the form of a project statement, or if such project triggers the requirements of an Environmental Impact Assessment under South African law, then in the content of such impact assessment, that a project is in compliance with environmental legal requirements and will not have a significant adverse impact on:		The project proponent shall identify potential negative environmental and socio-economic impacts, and shall take steps to mitigate them. VCS Standard v4.0, 3.16 Safeguards	All projects applying to become Gold Standard certified are required to undergo a detailed Safeguard analysis that entails checking if the project meets all social, environmental and economic safeguards listed in the Gold Standard for the Global Goals Safeguarding Principles and Requirements. In case the project does not meet any of the listed safeguards, it is required to mitigate the associated risk and monitor that the risk has been alleviated over the entire duration of crediting. Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2

Social, Economic, and Environmental Effects Criteria	CDM	VCS	GS
a. air quality;	Consideration from SA DNA criteria: – Impact of the project on air quality	The project must justify the use of fertilizers, chemical pesticides, biological control agents and other inputs used and their possible adverse effects. VCS Standard v4.0, 3.16 Safeguards	Project must avoid release of pollutants, including releases of pollutants to air, water, and land due to routine and accidental circumstances. Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2
b. water quality;	Consideration from SA DNA criteria: – Impact of the project on water pollution	The project shall justify the use of fertilizers, chemical pesticides, biological control agents and other inputs used and their possible adverse effects. VCS Standard v4.0, 3.16 Safeguards	Projects must ensure that water resources are conserved and that any discharged wastewater is of a high enough standard to allow beneficial reuse. At each Performance Certification, a project assess whether it is in an area of physical water stress or scarcity Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2
c. soil quality;	Consideration from SA DNA criteria: – Impact of the project on the sustainability of use of water, minerals, or other non-renewable natural resources; – Impact of the project on the generation or disposal of solid waste.	The project must justify the use of fertilizers, chemical pesticides, biological control agents and other inputs used and their possible adverse effects. VCS Standard v4.0, 3.16 Safeguards	The following impacts on soil quality must be identified, and appropriate measures put in place to protect them: – Soil types; – Biota; and – Erosion. Measures must be incorporated into the project to minimise soil degradation (e.g., through crop rotation, composting, no use of heavy machinery, use of N-fixing plants, reduced tillage, no use of ecologically harmful substances). Gold Standard for the Global Goals,

Social, Economic, and Environmental Effects Criteria	CDM	VCS	GS
			Safeguarding Principles & Requirements, Version 1.2
d. wildlife habitats; and	Consideration from SA DNA criteria: – Changes in local or regional biodiversity arising from the project	The project proponent shall identify potential negative environmental and socio-economic impacts, and shall take steps to mitigate them. VCS Standard v4.0, 3.16 Safeguards	GS requires proof that no measurable adverse impacts have occurred to habitat, specifically "on the criteria or biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values" A robust, appropriately designed, and long-term Habitats and Biodiversity Action Plan must be developed to achieve net gains of those biodiversity values for which the critical habitat was designated. Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2
e. natural ecosystems.	Consideration from SA DNA criteria: – Any other positive or negative environmental impacts of the project (such as impacts on noise, safety, visual impacts, or traffic)	The project proponent shall identify potential negative environmental and socio-economic impacts, and shall take steps to mitigate them. VCS Standard v4.0, 3.16 Safeguards	GS certification ensures a precautionary approach to natural resource conservation and avoids negative environmental impacts. Gold Standard for the Global Goals, Safeguarding Principles & Requirements, Version 1.2