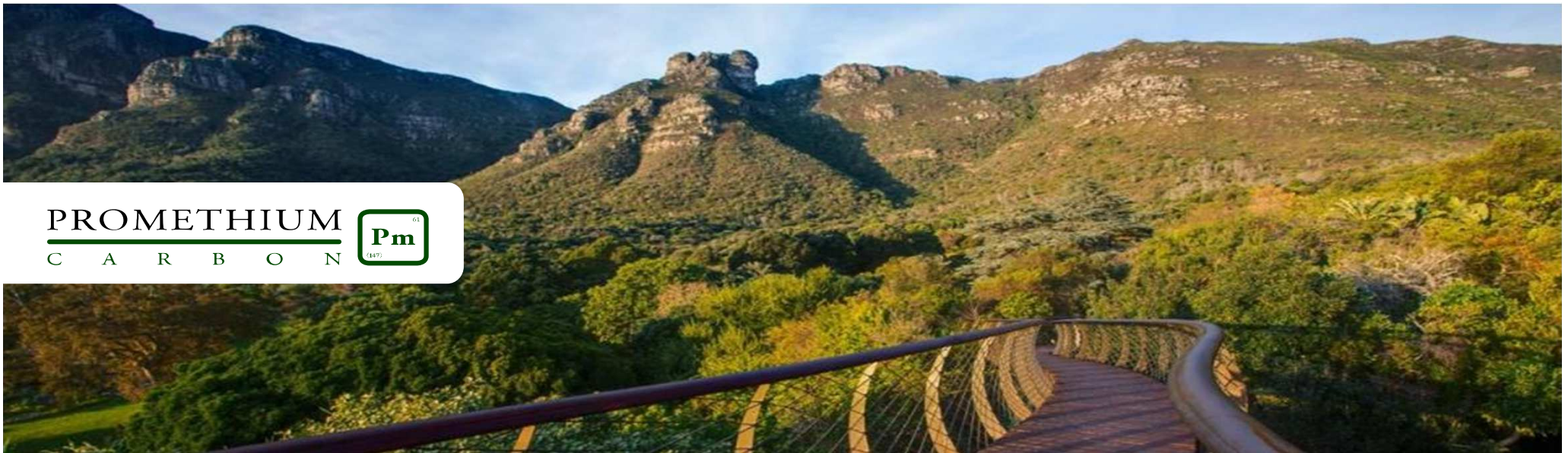


UNLOCKING CARBON CREDITS: GENERATION AND USE

15 FEBRUARY 2023

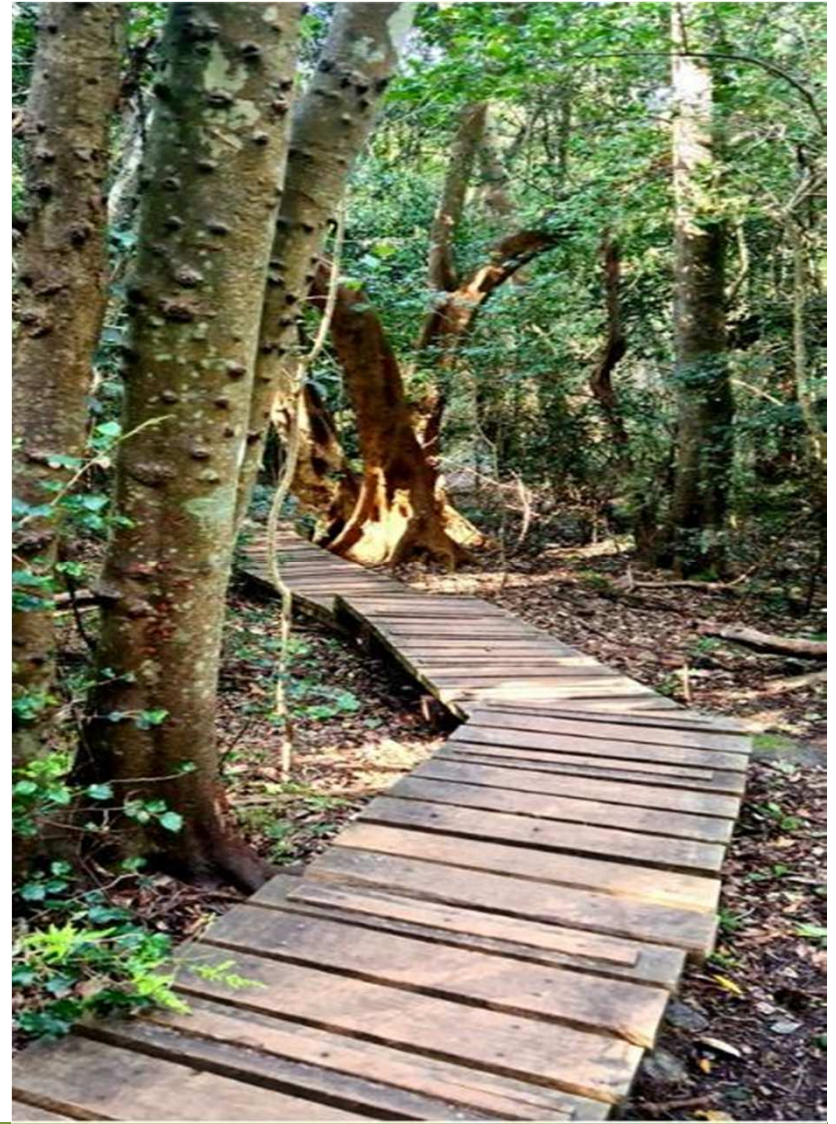


PROMETHIUM
C A R B O N



Contents

- What are Carbon Credits?
- Why are Carbon Credits Useful?
- Developing a Carbon Credit Project
 - Identifying a project
 - Choosing a methodology
 - Validating a project
 - Verification of emissions reduction
 - Issuance of credits
- How to use carbon credits
 - Climate objectives
 - Voluntary commitments
 - Carbon budgets
 - Carbon tax
- Carbon Markets
- Q&A



Introduction



Promethium has been providing carbon and climate change advisory services since 2003. Our focus is on assisting companies and governments in Southern African and globally to navigate the transition to the fast-emerging, global low-carbon economy.

Our work covers the full range of climate change services:

Mitigation: Carbon footprints (direct & indirect emissions), target setting, emission reduction projects, carbon credits

Adaptation: Risk and Vulnerability Assessments, Scenario Planning, Climate Change Policies & Strategies

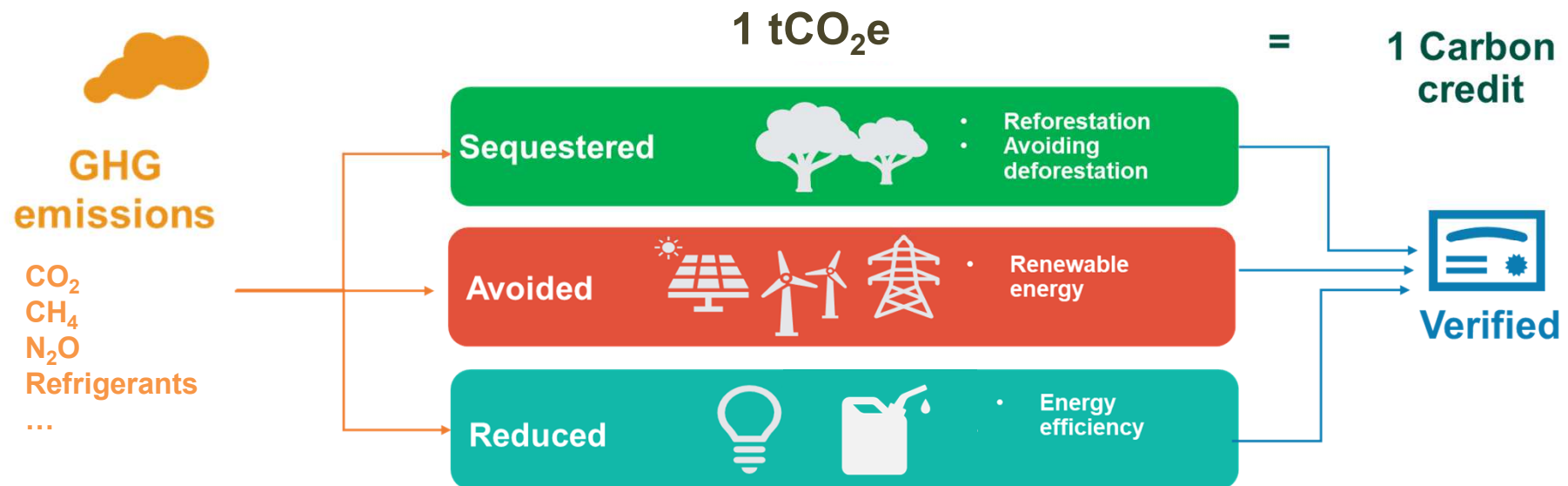
Reporting: CDP, Climate Related Financial Disclosure

Regulatory: Mandatory GHG Reporting, Carbon Tax, Climate Change Impact Assessments

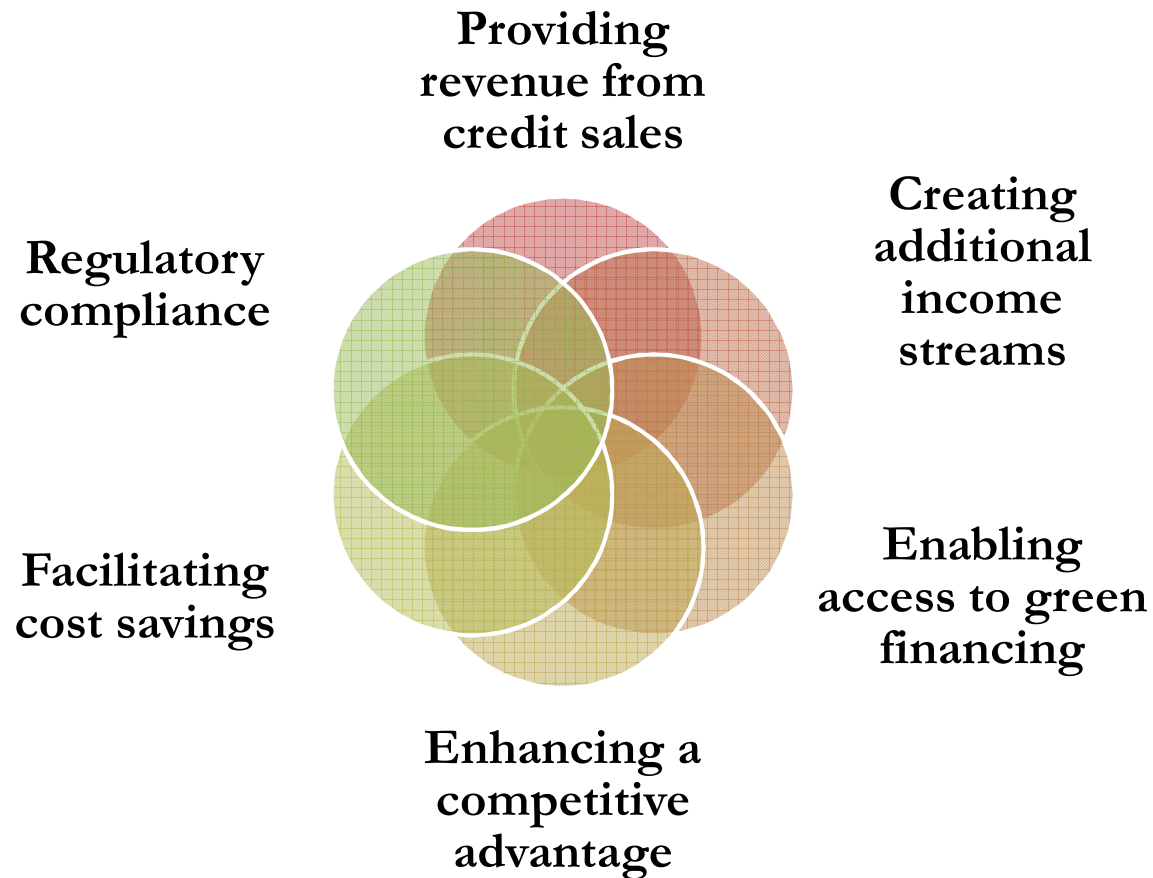


What are carbon credits?

A carbon credit represents the output of a verification of the sequestration, avoidance, or reduction of greenhouse gas (GHG) emissions, where the equivalent of **one metric ton of sequestered, avoided, or reduced GHG emissions is equivalent to one carbon credit.**



Why Carbon Credits?

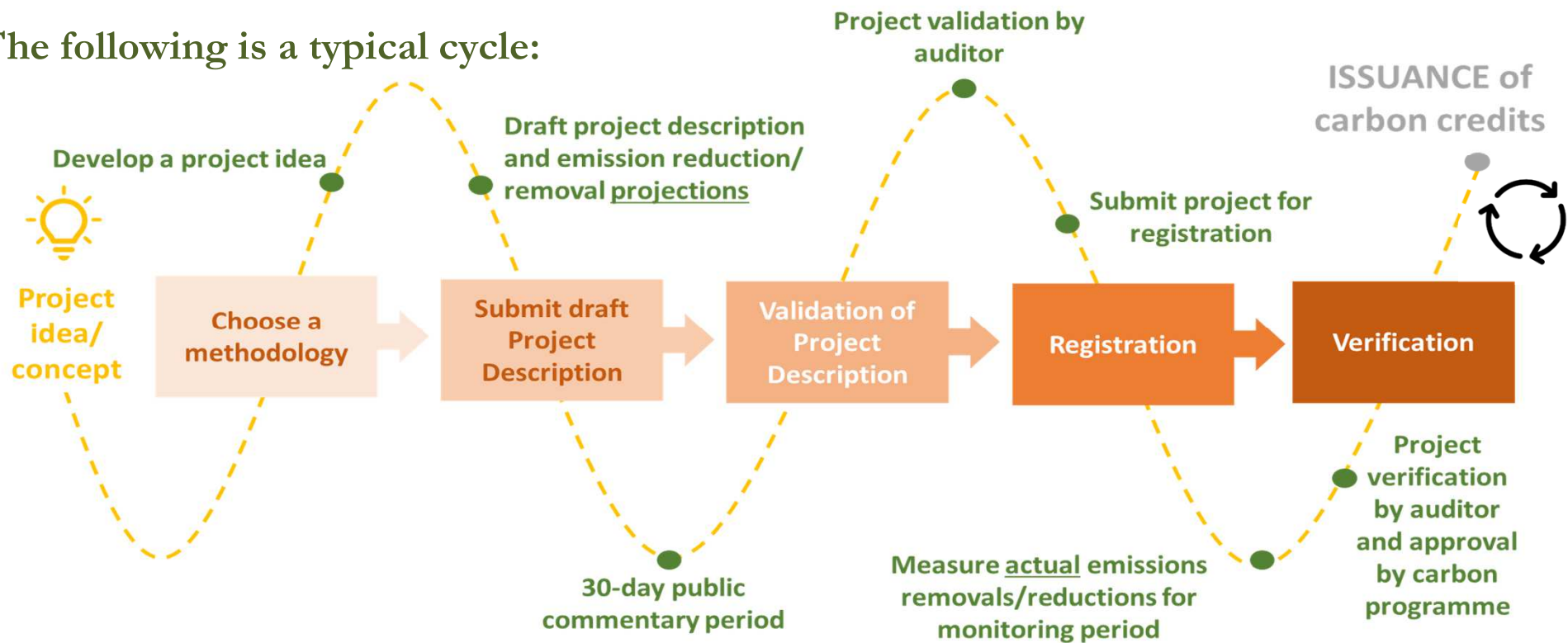


Selling carbon credits can contribute to climate change mitigation as well as bolster revenue.

Buying carbon credits provides a least cost mitigation option for buyers to reduce or offset their emissions.

Developing a Carbon Credit Project

The following is a typical cycle:



What is a 'methodology'?

A methodology refers to a set of rules and procedures that outline how to calculate, monitor, and verify the reduction or removal of greenhouse gas emissions associated with a specific project or activity

Identifying Carbon Credit Projects

1st Phase

The **Eligibility Assessment and Project Design Report** is a crucial step in the process of evaluating and designing a project to determine its eligibility for carbon credits based on various criteria:

Applicability of a Methodology

- Does the project align with an approved methodology?
- Is it compatible with the methodology's requirements?

Project Start Date

- Does the project start date comply with the validation audit deadline
- Typically set within 2 years from the project's start date

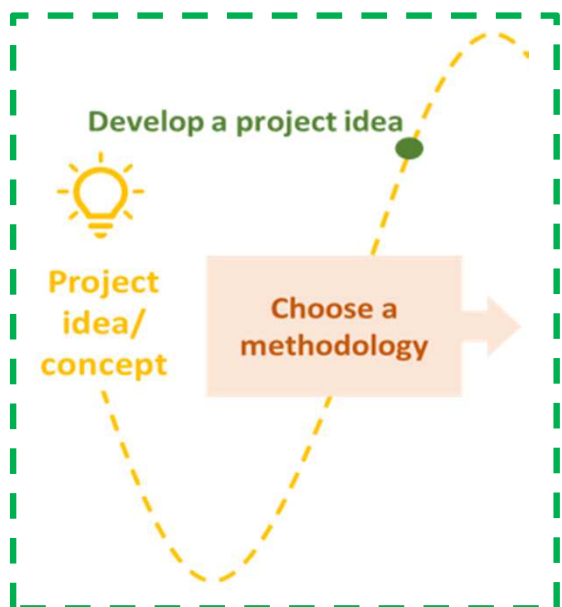
Additionality

- Does the project's GHG emissions reduction go beyond what would have occurred without the project?
- A financial analysis to establish the project's "additionality" is often used.

Carbon Credit Yield

- The potential quantity of carbon credits that the projects could generate is established.
- To qualify for carbon credits, projects must demonstrate a reduction in net emissions below a defined baseline.

Developing a Carbon Credit Project



More information on concept of additionality:

Project activities must be additional to what would have happened in the absence of the project or activity. I.e., project must result in emissions reductions that would not have occurred under a business-as-usual scenario.

Ensures that carbon credits represent real and measurable reductions, rather than simply reflecting emissions reductions that would have occurred anyway, without the project or activity.



Determine suitable Standard for project

Applicability against an approved methodology

Demonstrate additionality



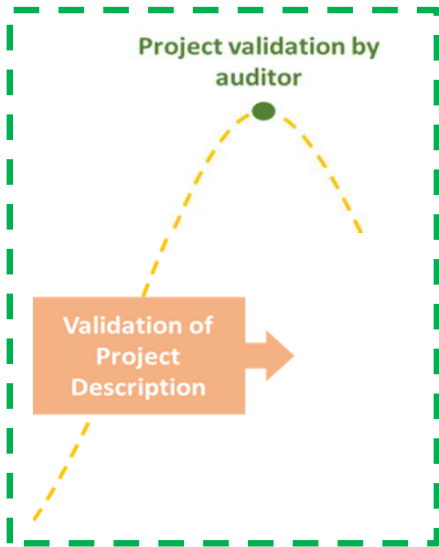
Eligibility for land-based projects can be varied depending on the methodology. From revegetation, to agroforestry, to conservation.

The biggest task lies with proving that there is an increase in carbon stock since the implementation of the project (baseline).

Demonstrate that reductions would not have occurred without revenue from the sale of carbon credits.

Additionality is intrinsic to the environmental integrity of a carbon project.

Validation Process



- To validate and verify the emissions reductions, project developers work with accredited organisations or auditors that are accredited by international bodies to ensure their competence and impartiality in evaluating projects.
- The project undergoes a validation process to ensure it meets the criteria set by the chosen methodology and international standards. This step often includes a review of the project's additionality, baseline emissions, and its overall design.

The project will be registered by the selected carbon program if the validation shows compliance with the principles of the program and monitoring methodology. Once registered the project will be in a position to earn carbon credits.



Validation Process Costs



- The financial aspects of project validation for carbon credit projects include expenses such as validation fees, data collection, consultation, travel, and administrative costs.
- Organisations must pay fees to accredited auditors or validation bodies for their services. These fees can vary depending on the project's complexity, location, and the chosen auditor
- It is important to obtain quotes and budget for such costs carefully, plan for contingencies, select auditors wisely, and seek grants or subsidies to manage costs effectively and ensure that the expenses do not outweigh the financial benefits of carbon credit projects.

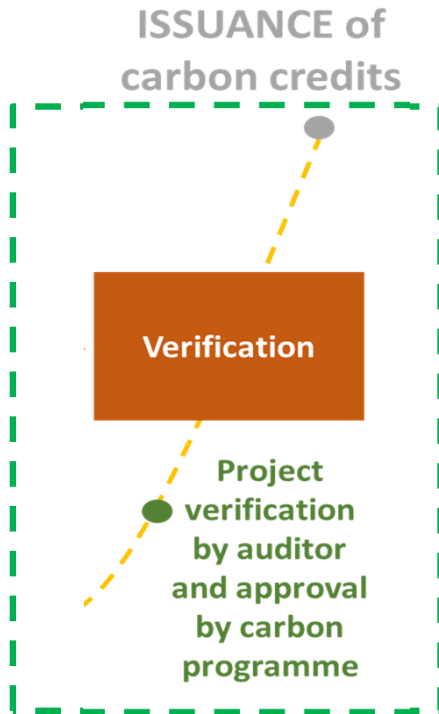
Financial Benefits



Expenses



Verification Process



- Verification occurs after enough emissions reductions have been accumulated to justify the cost of verification. The verification must be done by an accredited organisation or auditor.
- The auditors verify the calculated emissions reduction by confirming the monitoring of the project was conducted as laid out in the methodology supported by documented evidence and the data collected during monitoring.

Periodic **verification** audits are conducted to confirm that the project is **achieving the anticipated emissions reductions** as claimed.

If the project demonstrates its compliance with the methodology and successfully reduces emissions, it will be issued with carbon credits. Carbon credits represent the **actual emissions reductions achieved by the project**.

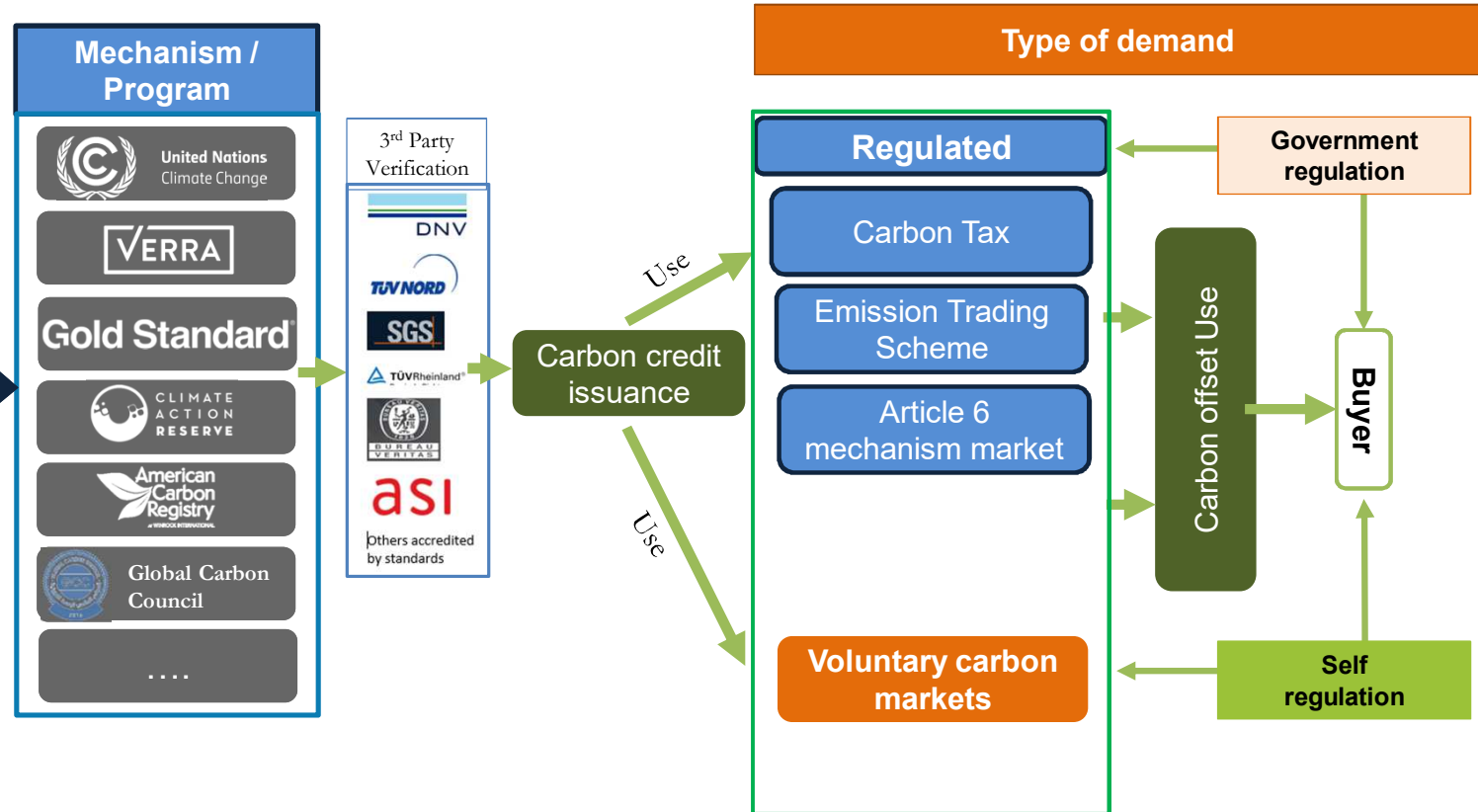
Issuance Costs

Issuance fees represent the cost per credit when a carbon credit is issued by a program. The fees vary between programs and can depend on factors such as the type of issuance, the program's specific pricing structure, and the volume of credits issued.

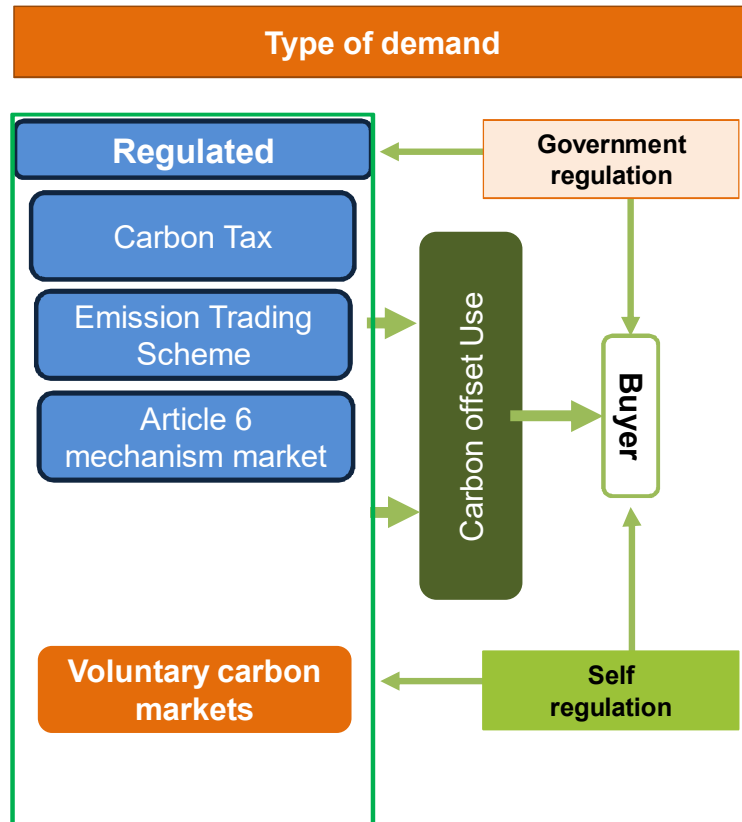
Program	Issuance Fee (per credit)
Gold Standard	\$0.15 (1st issuance, ex-post)
	\$0.30 (Option 1, cash, ex-post)
	\$0.10 (Option 2, share of proceeds, ex-post)
Verified Carbon Standard (VCS)	\$0.20
Plan Vivo	\$0.40 ($\leq 50,000$ PVC p.a.)
	\$0.35 ($> 50,000$ PVC p.a.)
Social Carbon	\$0.05 (0 - 10,000 units issued)
	\$0.12 ($> 10,000$ units issued)
Climate Action Reserve	\$0.19

Use of Carbon Credits

The distinctions between compliance and voluntary crediting mechanisms is blurring, as there are increasing number of hybrid systems



Use of Carbon Credits



Trade-offs when considering generating/buying/selling carbon credits

Emissions targets

- Carbon footprint

Regulatory requirements

Revenue

from credits

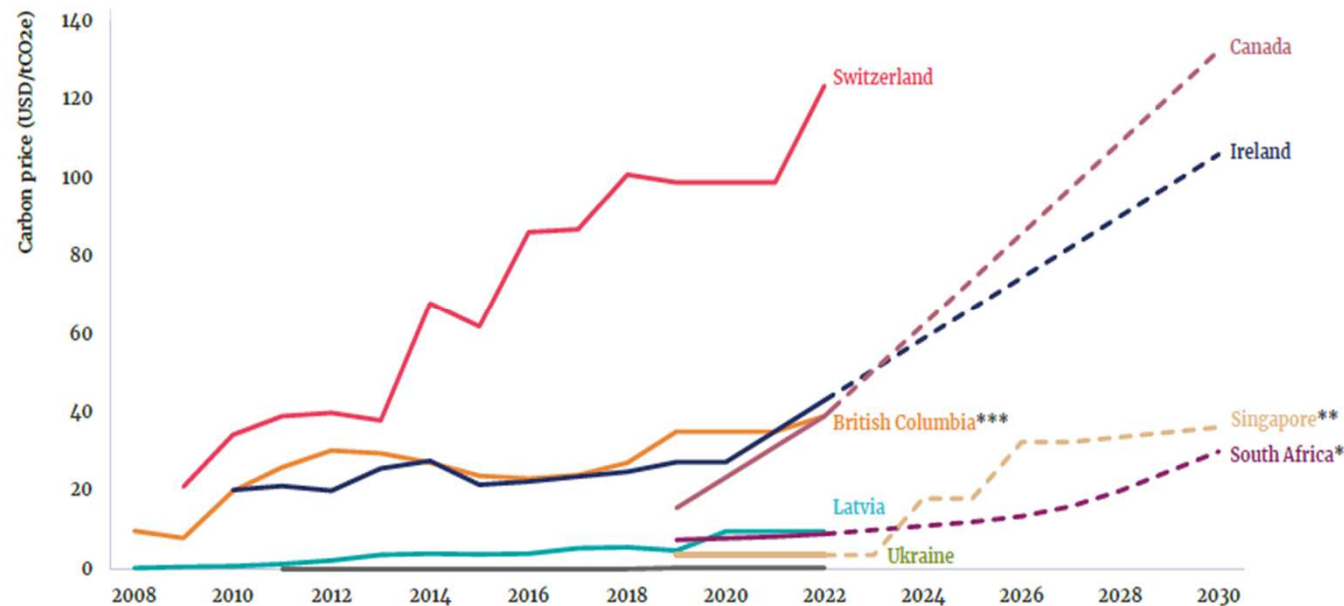
Cost to mitigate

Cost of credits



Carbon Market Trends

There has been a significant increase in demand for carbon credits globally



Dotted line indicates scheduled price increases for those jurisdictions that have communicated future price trajectories.

*Estimated path based on the government's ambition to increase the tax rate by at least USD 1 per year, and to increase the rate more rapidly from 2026 to reach USD 30/tCO₂e in 2030 and USD 120/tCO₂e beyond 2050.

**This is a low range projection as the Singapore government plans to reach a carbon tax rate of SGD 50-80/tCO₂e (36-58 USD/tCO₂e) by 2030.

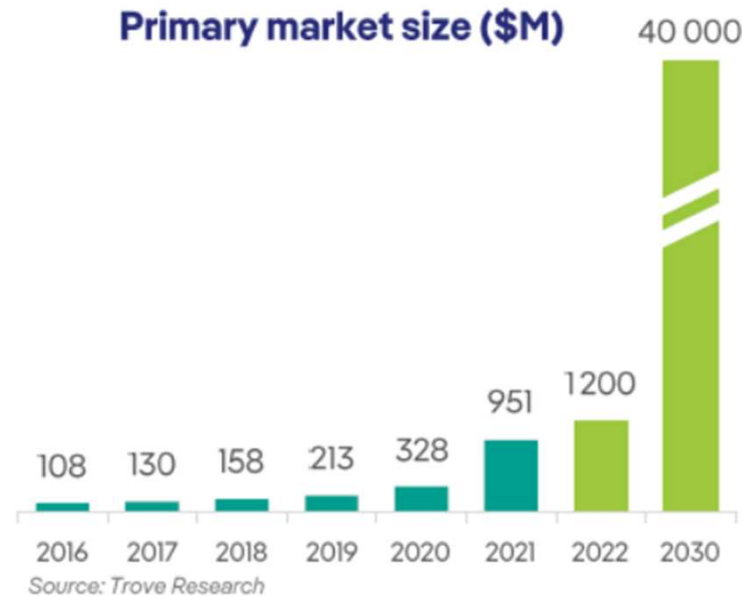
***British Columbia has committed to meet or exceed the federal benchmark carbon price.



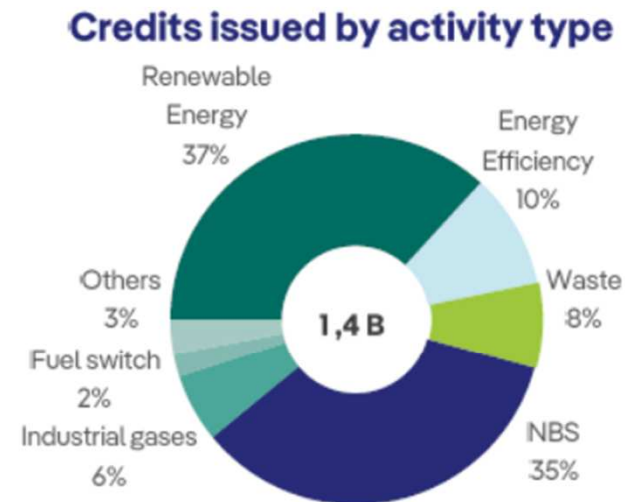
Aims to expand
Africa's
participation in
voluntary carbon

The Voluntary Carbon Market (VCM)

- Carbon credits are traded on 2 markets: compliance and **voluntary**
- The **VCM** is where private individuals, corporations and other actors issue, buy and sell carbon credits outside of regulated or mandatory carbon pricing mechanisms



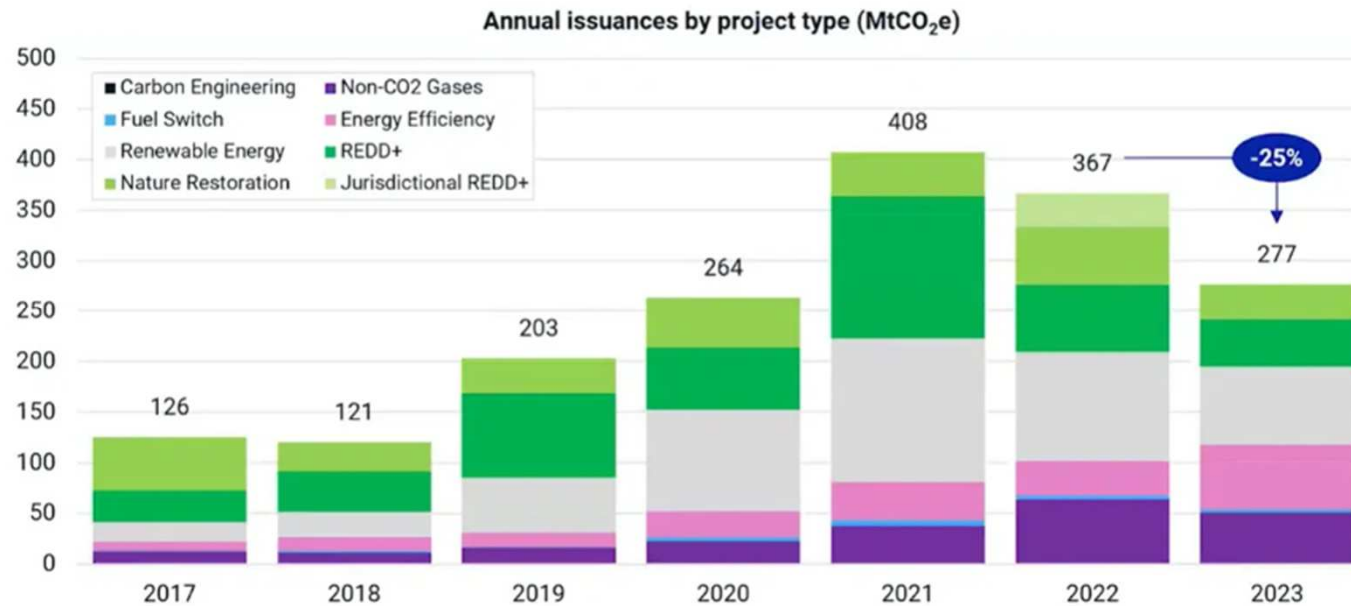
VCM 2021 tripled 2020 value and VCM 2022 was up by 20%.



Source: Climate Focus dashboard Jan 2023

Nature-based Solutions (NbS) represent 35% of the credits.

Issuances by Project type



REDD+ has only recently been finalised (the new consolidated methodology) and are awaiting crucial baseline data to be published by Verra for each country.

Note:

Not all methodologies are appropriate for southern African ecosystems.

REDD+ is not suited for South Africa as it is designed for tropical and subtropical rainforests.

[Carbon Market Chronicles: 2023 Unveiled and 2024's Inflection Points \(carboncredits.com\)](https://carboncredits.com)

REDD - 'Reducing emissions from deforestation and forest degradation' in developing countries.

REDD+ additional forest-related activities that protect the climate - sustainable management of forests and conservation and enhancement of forest carbon stocks.

Questions?



PROMETHIUM
C A R B O N



www.promethium.co.za



0861 CARBON



Dr Philip Goyns

Philip@promethium.co.za

Thank You

