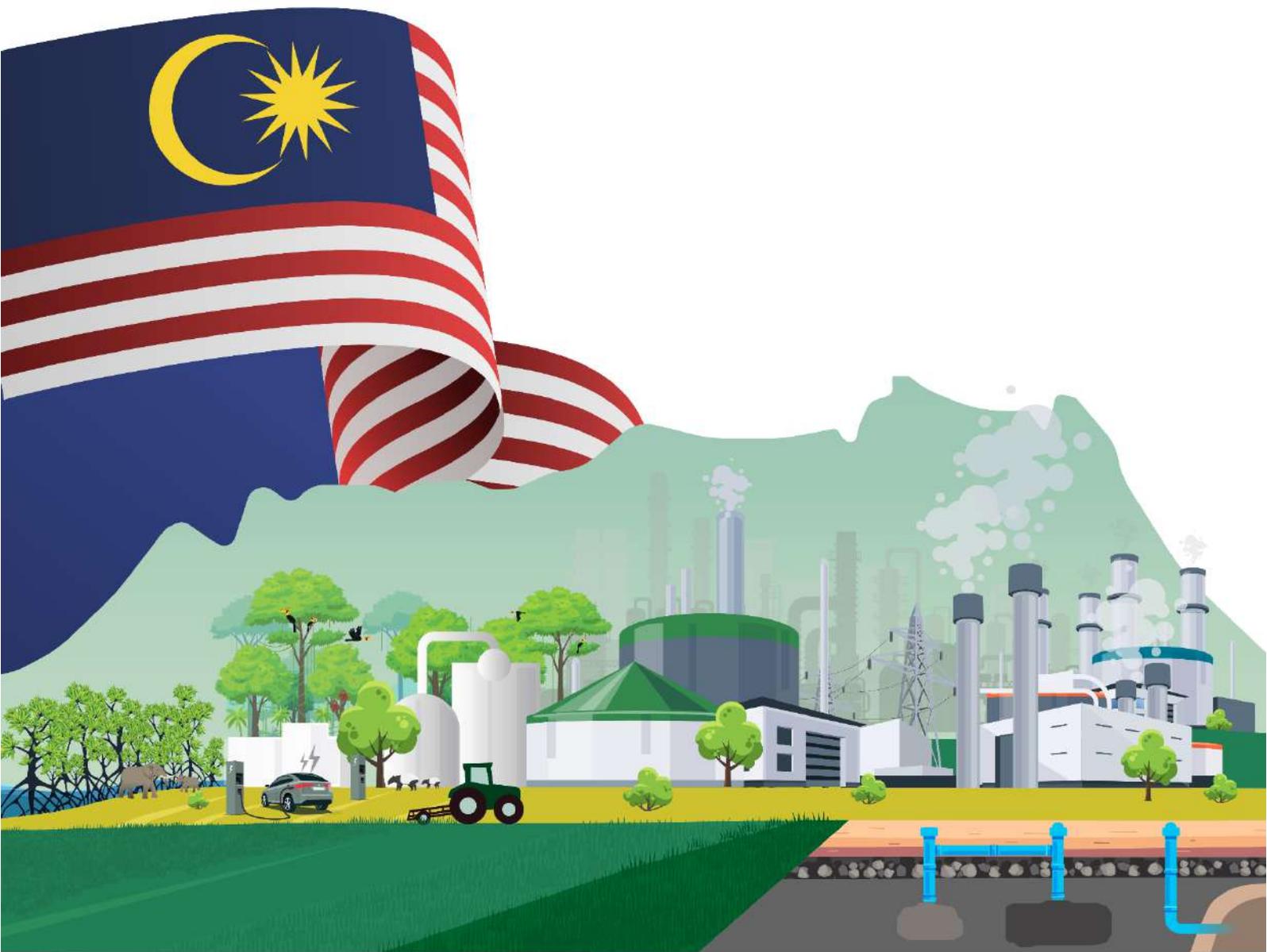


VCM Handbook

Your Comprehensive Project
Development Toolkit



Prepared by:



Jointly published by:

Bursa Malaysia Berhad and Malaysian Green Technology and Climate Change Corporation (MGTC)

© Bursa Malaysia & MGTC 2025.

All rights reserved. No part of this publication may be reproduced, copied, stored in any retrieval system or transmitted in any form without prior permission from Bursa Malaysia and MGTC.

COPYRIGHT

First Printing, October 2023

Version 1.1, November 2023

Version 1.2, March 2025

This Voluntary Carbon Market Handbook is published by Bursa Malaysia Berhad.

Published in Malaysia by:

Bursa Malaysia Berhad (30632-P)

Exchange Square, Bukit Kewangan,

50200 Kuala Lumpur,

Wilayah Persekutuan Kuala Lumpur

T: (603) 2034 7000 / (603) 2332 7000

E: bcx@bursamalaysia.com

W: www.bursamalaysia.com

Copyright © 2025 BURSA MALAYSIA BERHAD & MALAYSIAN GREEN TECHNOLOGY AND CLIMATE CHANGE CORPORATION.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or any means, except brief extracts for the purpose of review, without the prior permission in writing of the publisher and copyright administrator from BURSA MALAYSIA BERHAD (30632-P) and MALAYSIAN GREEN TECHNOLOGY AND CLIMATE CHANGE CORPORATION (462237-T). It is advisable also to consult the publisher if in any doubt as to the legality of any copying which is to be undertaken. To the extent permitted by law, BURSA MALAYSIA BERHAD and MALAYSIAN GREEN TECHNOLOGY AND CLIMATE CHANGE CORPORATION will not be liable for any loss or damage, whether in contract, tort (including negligence), breach of statutory duty or otherwise, even if foreseeable, arising under or in connection with the use of reliance on any information, data or content obtained via our services, including (without limitation) the analysis outputs presented.

Table of Contents

Table of Contents	4
List of Exhibits.....	8
Disclaimer.....	16
Chapter 1: Background on Climate Change	18
1.1 Chapter Summary	18
1.2 Introduction	18
1.3 Global Response and National Commitment to Climate Change.....	20
Chapter 2: Introduction to the Voluntary Carbon Market (VCM)	24
2.1 Chapter Summary	24
2.2 Introduction to Carbon Markets.....	25
2.2.1 Carbon Credit and Carbon Allowance	25
2.2.2 Carbon Markets	27
2.2.3 Voluntary Carbon Market	30
2.2.4 Participants of a VCM.....	32
2.2.5 Carbon Standards.....	37
2.2.6 Challenges and Gaps in Scaling Up the VCM.....	39
2.3 Introduction to the VCM in Malaysia	42
2.3.1 Role of Carbon Markets in Malaysia	42
2.3.2 Background of Bursa Carbon Exchange (BCX)	45
2.3.3 Unique Aspects of BCX	46
2.3.4 Salient Features of the BCX	48
2.3.5 Onboarding as a BCX Participant.....	50
Chapter 3: Guidance on Voluntary Carbon Market Mechanism in Malaysia.....	52
3.1 Chapter Summary	52
3.2 At National Level	53
3.2.1 National Level Setup and Requirements.....	53
3.2.2 Key Institutions and Contacts	54
3.2.3 Technical Requirements for VCM and REDD Plus Carbon Projects	56
3.2.4 Corresponding Adjustment.....	57
3.2.5 Registration of Carbon Projects and Reporting to the NSCCC	59
3.2.6 REDD Plus Finance Framework (RFF)	60
3.3 At State Level	61
3.3.1 Introduction	61
3.3.2 State-Level Regulations.....	62
3.3.3 Development of Carbon Projects at State Level.....	63

Chapter 4: Types of Eligible Projects	84
4.1 Chapter Summary	84
4.2 Verra and Gold Standard Sectoral Scopes	85
4.2.1 Projects According to VCS Sectoral Scopes.....	86
4.2.2 Projects According to GS Sectoral Scopes.....	90
4.3 Examples of Applicable Projects in Malaysia	91
4.4 Positive Lists of Technology.....	93
4.4.1 Verra	93
4.4.2 Gold Standard	95
4.5 Excluded Projects.....	96
4.5.1 Verra	96
4.5.2 Gold Standard	98
4.6 Methodologies Applicable for Eligible Projects in Malaysia	106
4.6.1 Verra – Approved Methodologies under the VCS for each sectoral scope ..	106
4.6.2 Gold Standard – Approved Methodologies under GS for each sectoral scope	116
4.7 Double Counting	138
4.7.1 Verra – Double Counting and Projects Registered under Other GHG Programmes	138
4.7.2 Gold Standard – Double Counting.....	139
4.8 Other Requirements	140
4.8.1 AMS-I.C. Thermal energy production with or without electricity.....	140
4.8.2 AMS-I.D. Grid connected renewable electricity generation	140
4.8.3 AMS-III.E. Avoidance of methane production from decay of biomass through controlled combustion, gasification or mechanical/thermal treatment.....	141
4.8.4 AMS-III.F. Avoidance of methane emissions through composting	142
4.8.5 AMS-III.H. Methane recovery in wastewater treatment.....	143
4.8.6 ACM0001 Flaring or use of landfill gas.....	144
4.8.7 VM0005 Methodology for Conversion of Low-Productive Forest to High-Productive Forest.....	145
Chapter 5: How to Formulate a VCM Project	148
5.1 Chapter Summary	148
5.2 General Process.....	148
5.2.1 Idea Formulation	148
5.2.2 Feasibility Study	149
5.2.3 Introduction to Verra.....	149
5.2.4 Introduction to Gold Standard	175
Chapter 6: How to Formulate a Methodology under the VCM?	202

6.1 Chapter Summary	202
6.2 Verified Carbon Standard (VCS)	204
6.2.1 VCS Overarching Rules and Guidance for Methodology Development	204
6.2.2 VCS Procedures for Development of a New Methodology	209
6.2.3 VCS Methodology Revisions	220
6.2.4. Applicable Fees for Methodology Development under Verra	225
6.3 Gold Standard for the Global Goals (GS) General Process	226
6.3.1 GS Guiding Principles and Requirements	226
6.3.2 GS New Methodology Development	227
6.3.3 GS Methodology Revision – Approved Methodology	236
6.3.4 Applicable Fees for Methodology Development under Gold Standard	244
Chapter 7: Case Studies in Malaysia	246
7.1 Chapter Summary	246
7.2 Introduction	246
7.3 Nature-Based Solutions Case Study	246
7.3.1 Kuamut Rainforest Conservation Project in Sabah, Malaysia	246
7.4 Technology-Based Solutions Case Studies	254
7.4.1 Case 1 - Landfill Gas Recovery and Utilisation at Bukit Tagar Sanitary Landfill, Hulu Selangor, in Malaysia	254
7.4.2 Case 2 - Sungei Kahang POME Biogas Recovery for Energy Project in Johor, Malaysia	259
7.4.3 Case 3 - Fuel-Switch Project Deriving Carbon Assets from the Use of Non-Edible Raw Agriculture-Derived Oil System (NERADO System) To Replace Heavy Fuel Oil for Aluminium Dross Recycling in Malaysia	262
Chapter 8: Relevant Government Incentives	267
8.1 Chapter Summary	267
8.2 Incentives for Carbon Credits	268
8.2.1 Further Tax Deduction for Carbon Projects (FTC)	268
8.3 Incentives for Green Investment	269
8.3.1 General Incentives	269
8.3.2 Sector-specific Incentives	272
Chapter 9: Frequently Asked Questions (FAQs)	276
9.1 General	276
9.2 Carbon Credits	277
9.3 Crediting Period	277
9.4 Registration	278
9.5 Project-Specific	280
9.6 The VCM Directory	281

Appendices	282
Appendix 1.....	282
Appendix 2.....	285
Appendix 3.....	294
Appendix 4	298
List of Acronyms	302

List of Exhibits

Exhibit 1: Major types of greenhouse gases.....	18
Exhibit 2: Causes and impacts of climate change.....	19
Exhibit 3: Consequences of climate change across multiple sectors.	20
Exhibit 4: Global and national commitments to climate change.	21
Exhibit 5: National low-carbon policies, action plans and financing support.....	22
Exhibit 6: Differences between carbon credits and carbon allowances.....	26
Exhibit 7: Key characteristics of carbon credits.	27
Exhibit 8: Carbon market ecosystem.	29
Exhibit 9: Differences between compliance and voluntary carbon markets.....	30
Exhibit 10: Key principles of a voluntary carbon market.	31
Exhibit 11: Movement of voluntary carbon credits under Article 6.	31
Exhibit 12: Key players of a VCM.....	33
Exhibit 13: Types of platforms related to carbon trading.	35
Exhibit 14: Key aspects of standardised contracts.	36
Exhibit 15: Examples of international carbon standards.	38
Exhibit 16: Implementation phases of CORSIA.	39
Exhibit 17: Key challenges identified in the VCM ecosystem.....	40
Exhibit 18: Fundamental principles for high-quality carbon credits.	41
Exhibit 19: Carbon rating services and frameworks in the market.....	42
Exhibit 20: Cumulative investments required for Malaysia to achieve net zero.	44
Exhibit 21: Key actors and players in the Malaysian VCM ecosystem.	45
Exhibit 22: Launch of Bursa Carbon Exchange, 9 December 2022.	46
Exhibit 23: Unique aspects of BCX.	46
Exhibit 24: Salient features of the BCX in a nutshell.	48
Exhibit 25: Auctions conducted by BCX since 2023.	49
Exhibit 26: NRECC (now known as NRES) Minister's speech during the launch of Bursa Carbon Exchange.....	54
Exhibit 27: Responsibilities of the Ministry of Natural Resources and Environmental Sustainability (NRES).....	55
Exhibit 28: Information to be submitted to the ministry responsible for NSCCC and to NSC REDD Plus.....	56
Exhibit 29: Carbon project scope and activity design.	56
Exhibit 30: Overview of principles and criteria for carbon project activity.....	57
Exhibit 31: Overview of transfer of ITMOs between seller and buyer countries, which requires a CA.	58
Exhibit 32: Announcement on carbon trading by the Minister of NRECC (now known as NRES) on 9 December 2022.	59
Exhibit 33: Specific details and information on carbon projects to be submitted to NSCCC.	60
Exhibit 34: The Role of Forests in Climate Change Mitigation.	60
Exhibit 35: Forestry activities policy and law in Malaysia.	63
Exhibit 36: Procedure to apply for a Carbon Storage Licence in Sarawak.	72
Exhibit 37: Procedure to apply for a Carbon Storage Permit in Sarawak.....	73
Exhibit 38: Sixth Schedule: Fees, levies and other payments (Rule 44).....	74
Exhibit 39: Procedure to develop a carbon project in Sarawak.	75
Exhibit 40: Third Schedule: Rate of fees (Rule 3).....	78
Exhibit 41: Fourth Schedule: Rates of statutory charges (Rule 41 (3)).	79
Exhibit 42: VCS sectoral scopes categorisation.	85

Exhibit 43: GS sectoral scopes categorisation.....	86
Exhibit 44: Definition of forest classification in Malaysia.	87
Exhibit 45: Carbon projects in Malaysia as of 27 November 2024.	92
Exhibit 46: Verra's Positive Lists of Technologies.....	93
Exhibit 47: GS, CDM Tool 32 - Positive list of technologies.	95
Exhibit 48: Excluded project activities under the VCS Program.....	97
Exhibit 49: Type of applicable projects and examples of projects in Malaysia.	99
Exhibit 50: Approved methodologies under the VCS and CDM programmes.	106
Exhibit 51: Approved methodologies under the GS and CDM programmes.	117
Exhibit 52: Grid connected renewable energy produced from biogas engines.	141
Exhibit 53: Empty fruit bunches (EFBs) are a biomass source used to produce pellets (a source of energy) in Sabah.	142
Exhibit 54: Palm oil mill effluent (POME) treatment in a Johor palm oil mill by using anaerobic digester tanks.	144
Exhibit 55: Methane recovery from a landfill gas project in Selangor.	145
Exhibit 56: Logging activities in one of the Forest Management Units (FMUs) in Sabah.	146
Exhibit 57: Elements of developing a VCM Project.	148
Exhibit 58: Idea formulation.....	149
Exhibit 59: Key elements in conducting a feasibility study.....	149
Exhibit 60: A Verra VCM project framework.....	150
Exhibit 61: Typical VCM project timeline.....	151
Exhibit 62: Opening a Verra Registry account.	154
Exhibit 63: Verra account application step-by-step procedure.....	154
Exhibit 64: Definition of each account type.....	155
Exhibit 65: Finding a suitable methodology.....	156
Exhibit 66: Pipeline listing process for "Under Development" status.....	160
Exhibit 67: Pipeline listing process for "Under Validation" status.....	160
Exhibit 68: List of documents to be submitted for projects Under Development and Validation.....	161
Exhibit 69: Project validation and verification process.....	162
Exhibit 70: List of documents to be submitted to VVB for validation and verification.....	162
Exhibit 71: List of documents to be submitted to Verra Registry for registration and issuance request.	165
Exhibit 72: Evidence of proof of right.....	166
Exhibit 73: Flow of the project review process.....	167
Exhibit 74: Project registration and issuance of VCU process.....	168
Exhibit 75: List of documents to be uploaded by Verra to the Registry for registration....	169
Exhibit 76: VCU issuance process and initial VCU issuance requirements.	170
Exhibit 77: VCU issuance process.....	171
Exhibit 78: VCU retirement process.....	172
Exhibit 79: VCU cancellation process.....	172
Exhibit 80: Project maintenance process.....	173
Exhibit 81: Key components in developing a Gold Standard carbon project.....	175
Exhibit 82: Mandatory requirements for all Gold Standard Projects.....	176
Exhibit 83: Five core principles that projects must adhere to.....	177
Exhibit 84: Gold Standard VCM project certification process.....	178
Exhibit 85: Gold Standard VCM project timeline.....	179
Exhibit 86: Gold Standard VCM project development fees.....	180
Exhibit 87: Steps to open a Gold Standard Impact Registry account.....	181
Exhibit 88: Finding a suitable methodology.....	183

Exhibit 89: Steps for conducting stakeholder consultation.....	189
Exhibit 90: Pathway options for methodology development.....	205
Exhibit 91: Engagement options or additional support for methodology development..	205
Exhibit 92: Methodology status in the development stage.....	206
Exhibit 93: Approved methodology versions.....	206
Exhibit 94: Requirements of methodology grace periods.....	207
Exhibit 95: Methodology grace periods.....	207
Exhibit 96: Compensation for methodology developers.....	208
Exhibit 97: VCS methodology compensation rebate.....	208
Exhibit 98: Stages for new methodology development.....	209
Exhibit 99: Criteria of proposed methodology.....	210
Exhibit 100: Methodology Idea Note Submission process.....	211
Exhibit 101: Potential outcomes of Verra's evaluation of the Methodology Idea Note.....	212
Exhibit 102: Methodology Concept Note submission process.....	213
Exhibit 103: Potential outcomes of Verra's evaluation of the Methodology Concept Note.....	214
Exhibit 104: List of documents to be submitted to Verra for the Draft Methodology Development process.....	215
Exhibit 105: Draft Methodology Development process.....	216
Exhibit 106: Public stakeholder consultation process.....	217
Exhibit 107: VVB assessment process.....	218
Exhibit 108: Scope of assessment.....	218
Exhibit 109: Verra's potential review outcomes.....	220
Exhibit 110: Types of methodology revisions.....	221
Exhibit 111: Steps for major revision.....	222
Exhibit 112: Verra's potential review outcomes for major revision.....	223
Exhibit 113: Criteria of proposed minor revision.....	224
Exhibit 114: Verra's potential review outcomes for minor revision.....	224
Exhibit 115: Applicable Fee for Methodology Development (new and revision).....	225
Exhibit 116: New methodology development.....	227
Exhibit 117: New methodology approval pathways.....	228
Exhibit 118: Stages for new methodology approval procedure.....	229
Exhibit 119: Decision communicated/status of review process.....	230
Exhibit 120: The review process by methodology working group.....	232
Exhibit 121: The completeness check outcome.....	233
Exhibit 122: Outcome of TAC's decision.....	234
Exhibit 123: Methodology revision for approved methodology.....	236
Exhibit 124: Types of methodology revisions.....	237
Exhibit 125: Review process outcome.....	238
Exhibit 126: Review process by working group.....	239
Exhibit 127: Stakeholder consultation.....	240
Exhibit 128: Methodology revision requirements.....	241
Exhibit 129: Secretariat decisions.....	242
Exhibit 130: Applicable Fee for Methodology Development (new and revision).....	244
Exhibit 131: Kuamut Rainforest Conservation Project logo.....	246
Exhibit 132: Kuamut Rainforest Conservation Project in Sabah, Malaysia.....	247
Exhibit 133: Location map of the Kuamut Rainforest Conservation Project.....	248
Exhibit 134: APD project in Kuamut Rainforest Conservation Project.....	250
Exhibit 135: Village of Kuamut, Sabah.....	251
Exhibit 136: Project team installing the water gravity system.....	251

Exhibit 137: Biodiversity conservation of rare, threatened or endangered mammals and birds in the Kuamut Project.....	252
Exhibit 138: Bukit Tagar Sanitary Landfill, Hulu Selangor.....	254
Exhibit 139: Gas engines at the Bukit Tagar Sanitary Landfill.....	256
Exhibit 140: Actual vs. estimated CER issuances for Bukit Tagar Project.....	257
Exhibit 141: Site operating team (left) and internal auditees (right).....	258
Exhibit 142: POME Biogas Recovery for Energy Project in Sungei Kahang.....	259
Exhibit 143: Baseline of project – Methane emissions from open lagoons treating POME.	260
Exhibit 144: Monitoring audit (left) and monitoring equipment (right).....	261
Exhibit 145: Comparison of actual vs. estimated CER issuances for Sungei Kahang Project.	261
Exhibit 146: Site operating team (left) and internal auditees (right).....	262
Exhibit 147: JTS facility.....	263
Exhibit 148: JTS furnace.....	264
Exhibit 149: Estimated project impact.....	265
Exhibit 150: Overview of the FTC Process.....	269
Exhibit 151: Categories of incentives under the Green Technology Tax Incentive.....	270
Exhibit 152: Examples of qualifying projects for GITA that could be eligible for carbon credits.....	270
Exhibit 153: Incentives available for EVs in Malaysia.....	273
Exhibit 154: Incentives for CCS.....	274



Foreword by Prime Minister

Salam Malaysia MADANI.

The Synthesis Report for the Sixth Assessment Report (AR6) released by the Intergovernmental Panel on Climate Change (IPCC) in March 2023 confirmed that global greenhouse gas (GHG) emissions have continued to increase, as a result of “unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals”. Widespread impacts such as drought, floods, and storms, attributed to human-caused climate change, have been observed. This represents a clear and present threat to water and food security, health and well-being, settlements and infrastructure, and biodiversity and ecosystems, which no nation can afford to ignore.

As at the end of 2019, Malaysia reported net GHG emissions of 116 million tonnes of carbon dioxide equivalent after taking into account the net sink of the land use, land-use change and forestry (LULUCF) sector (Malaysia’s Fourth Biennial Update Report to the UNFCCC, 2022). Our contribution of carbon emissions at global level remains very small. In year 2021, Malaysia accounted for less than 0.7% of global GHG emissions. Nevertheless, we recognise that climate change is an unprecedented global issue that requires international cooperation. Malaysia is actively contributing towards global efforts to address climate change, by unconditionally setting commitments to reduce our economy-wide GHG emissions intensity against our gross domestic product (GDP) by 45% in 2030 compared to 2005 levels and aspire to achieve net-zero GHG emissions by as early as 2050. Accordingly, a Long-Term Low Emissions Development Strategy (LT-LEDS) is being developed to guide the realisation of these aspirations.

Globally, a Voluntary Carbon Market (VCM) has been regarded as an important carbon pricing instrument in driving the climate agenda. Carbon markets can effectively facilitate the energy transition and decarbonisation efforts, and hence address climate change. In this regard, on 17 September 2021, the Cabinet agreed to develop a national carbon pricing policy and implementation framework for a carbon market, which includes the emissions trading system (ETS). This also resulted in the announcement of a Voluntary Carbon Market (VCM) initiative under Budget 2022, and the mandate was given to Bursa Malaysia to develop a facilitative platform for carbon credits to be traded between green asset owners and corporates transitioning towards low-carbon practices. It was a welcomed development when Bursa Malaysia launched the world’s first Shariah carbon exchange – Bursa Carbon Exchange (BCX) - on 9 December 2022.

In line with the concept of Malaysia MADANI, BCX will play a crucial role in promoting climate action and sustainable development in our nation. It is my firm belief that the VCM will generate a ripple effect on the nation's economy; by creating job opportunities, benefitting local communities, and ushering in a green economy that is inclusive in Malaysia. Access to the VCM would importantly help ensure our local companies are more competitive in global markets, and able to unlock access to global green supply chains.

Being one of the fruits of collaboration between Bursa Malaysia and the Malaysian Green Technology and Climate Change Corporation (MGTC), this national VCM Handbook is a step forward to spur the growth of our domestic carbon market ecosystem. It will be a living document that will provide initial guidance for interested parties to develop carbon projects in Malaysia. It is important that these projects yield high-quality carbon credits under internationally recognised standards and be aligned to the broader United Nations Sustainable Development agenda (UN SDG 2030). With the publication of this national VCM Handbook, it is my hope to see more domestic carbon credit projects successfully developed in the coming years, and that corporates will have ample access to locally produced carbon credits through Malaysia's very own VCM. I extend my appreciation to Bursa Malaysia and MGTC for producing this valuable publication.

I encourage potential Malaysian carbon market ecosystem players to seize opportunities and stay abreast of the latest developments related to the VCM, leveraging resources provided by related agencies towards progressing on the nation's climate change aspirations.

Most importantly, I genuinely hope that everyone in Malaysia will collectively contribute his or her part to systematically change our economic model that, for a long time, has brought hazards to the environment and the larger society. I will end this foreword with a quote attributed to a renowned philosopher and social scientist, to guide and inspire us:

*The ultimate goal of economic activity
is to promote the common good and
the flourishing of society as a whole.
- Ibn Khaldun*

Dato' Seri Anwar bin Ibrahim
Prime Minister of Malaysia

Acknowledgements

The invaluable contributions of all stakeholders are gratefully acknowledged. We would like to express our appreciation to the following ministries, agencies, departments and organisations that supported the development of the Voluntary Carbon Market Handbook.

Ministries & Agencies

NRES	Ministry of Natural Resources and Environmental Sustainability (Previously known as the Ministry of Natural Resources, Environmental and Climate Change – NRECC)
FRIM	Forest Research Institute Malaysia
JPSM	Forestry Department of Peninsular Malaysia
MFF	Malaysia Forest Fund
REDD Plus Malaysia	Reducing Emissions from Deforestation and Forest Degradation-Plus Malaysia
MUDeNR	Ministry of Natural Resources and Urban Development, Sarawak

State Governments

BPEN Johor	Economic Planning Division Johor State
UPEN Kelantan	Kelantan State Economic Planning Unit
UPEN Melaka	Economic Planning Unit Melaka State
UPEN Negeri Sembilan	Economic Planning Unit Negeri Sembilan State
BPEN Pahang	Economic Planning Department Pahang State
BPEN Perak	Economic Planning Division Perak State
BPEN Perlis	Economic Planning Division Perlis State
SUK Pulau Pinang	Penang State Secretariat
UPEN Selangor	Economic Planning Unit Selangor State
UPEN Terengganu	Economic Planning Unit Terengganu State

State Forestry Departments

Forest Department Sarawak
Pahang State Forestry Department
Sabah Forestry Department
Selangor State Forestry Department

Organisations

Berjaya EnviroParks Sdn Bhd
Bureau Veritas Certification (M) Sdn Bhd
Cenergi-SEA Berhad
ClimatEra Consulting Sdn Bhd
Eco-Ideal Consulting Sdn Bhd
Global Tunikara Sdn Bhd
Green Lagoon Technology Sdn Bhd
Permian Global
Permian Malaysia Sdn Bhd
Shell Malaysia Ltd
South Pole
YTL SV Carbon Sdn Bhd
Melaka Green Technology Corporation

Disclaimer

The information and guidance provided in this handbook are intended for general informational purposes only. While every effort has been made to ensure the accuracy, completeness and reliability of the content, we make no representations or warranties of any kind, express or implied, about the suitability, applicability or reliability of the information contained within.

The content of this Handbook is based on research, expert opinions and best practices available at the time of writing. However, it is important to note that knowledge and understanding in various fields are constantly evolving, and new information may emerge that could change or update the perspectives and recommendations provided herein.

The use of the information and techniques described in this Handbook is at the reader's own risk. We shall not be held liable for any direct, indirect, incidental, consequential or punitive damages or any other losses, injuries or inconveniences arising from the use of this Handbook or reliance on the information contained within.

The Handbook may include references, links or citations to external sources, websites or resources. These external sources are provided for convenience and further exploration of the topics discussed. However, we do not endorse or take responsibility for the accuracy, relevance or content of such external sources.

The inclusion of specific products, services, organisations or individuals in this Handbook does not imply endorsement or recommendation. Readers should exercise their own judgement and conduct further research or seek professional advice before making decisions or taking action based on the information provided.

The content of this Handbook is not intended to replace or substitute professional advice or consultation in any field. Readers with specific concerns or issues should seek appropriate professional assistance or consult relevant authorities.

We reserve the right to make changes, updates or corrections to the content of this Handbook at any time without prior notice.

By using this Handbook, readers acknowledge and accept the aforementioned disclaimers and release the authors, contributors, publishers and related parties from any and all liabilities.

Chapter 1

Background on Climate Change

1.1 Chapter Summary

1.2 Introduction

1.3 Global Response and National Commitment to Climate Change



Chapter 1: Background on Climate Change

1.1 Chapter Summary

This chapter provides an overview of the international and national policies on climate change, focusing on the commitment to sustainability and decarbonisation. It highlights the growing recognition of the urgent need to address climate change and the role of both international and national policy frameworks in tackling this global challenge.

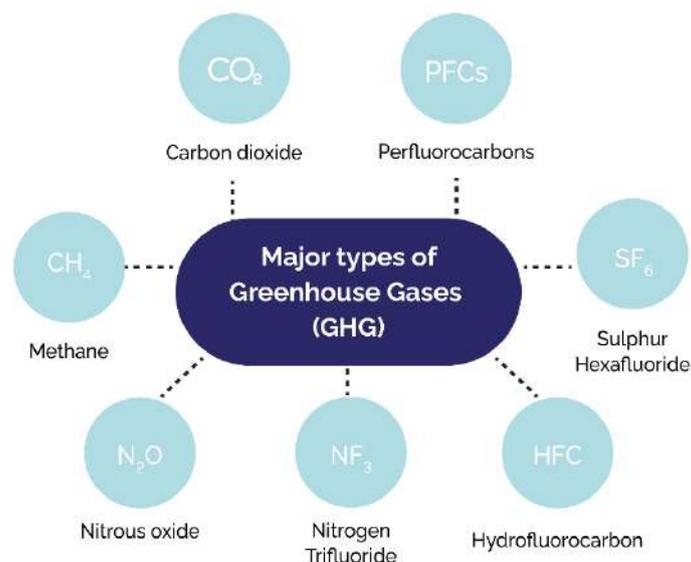
The chapter begins by emphasising the interconnectedness of climate change and the importance of coordinated efforts at the international level. It discusses key international agreements, such as the Paris Agreement, which aims to limit global warming to well below 2°C. The chapter also highlights the significance of countries' commitments to reducing greenhouse gas emissions, fostering sustainable development and supporting vulnerable nations in adapting to the impacts of climate change. This chapter provides an overview of Malaysia's national strategies and efforts aimed at major emission sectors, demonstrating its commitment to combating climate change and promoting a low-carbon, sustainable future.

1.2 Introduction

Climate change is the phrase used to describe the long-term changes in weather patterns that have been seen over the past century and which are mostly related to human activities that cause the atmosphere to absorb enormous amounts of greenhouse gases (GHG). The phenomenon has become a critical issue, threatening the environment and leading to various economic and social impacts on the planet.

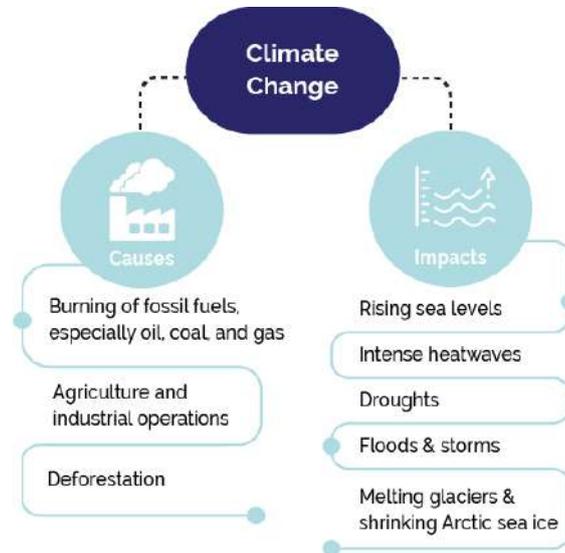
The GHG trap heat in the earth's atmosphere, leading to the greenhouse effect and causing the temperature to rise, thus warming the planet. The following Exhibit 1 shows the major types of GHG.

Exhibit 1: Major types of greenhouse gases.



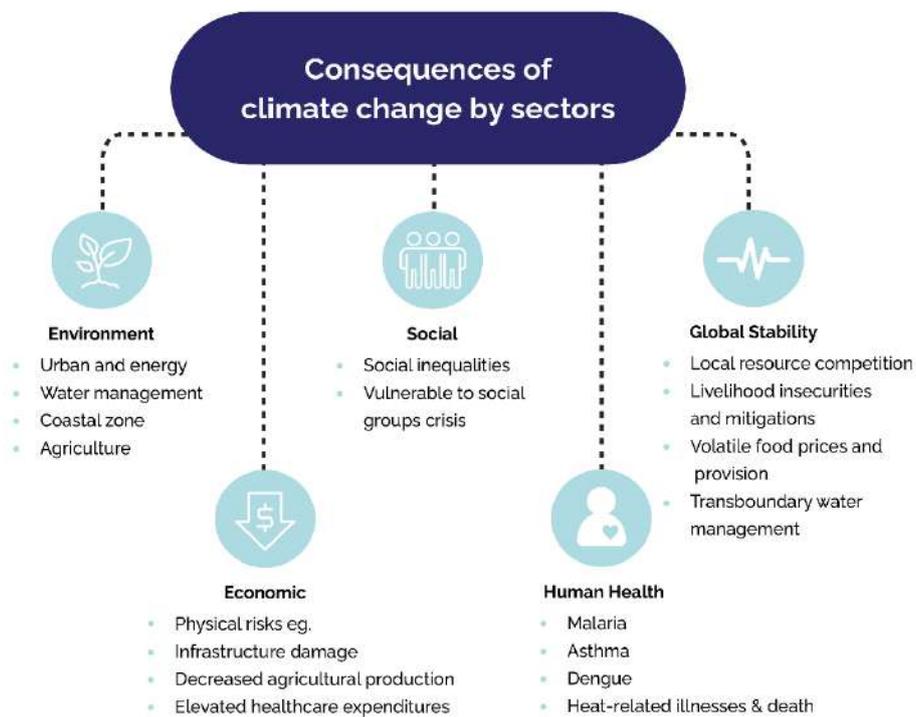
The burning of fossil fuels, particularly oil, coal and gas, is the primary cause of GHG emissions. In addition, agriculture, industrial activities and deforestation contribute significantly to GHG emissions. The consequences of climate change are already evident worldwide. Exhibit 2 shows the main causes and the impacts of climate change.

Exhibit 2: Causes and impacts of climate change.



The Intergovernmental Panel on Climate Change (IPCC) has warned that the earth's temperature could rise by 1.5°C or more above pre-industrial levels by the end of the century if action is not taken to reduce GHG emissions. International efforts to address climate change impacts include the United Nations Framework Convention on Climate Change (UNFCCC), signed by most of the countries in the world, which aims to stabilise GHG concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system. The Paris Agreement, adopted in 2015, is a landmark global agreement that aims to limit global warming to well below 2°C above pre-industrial levels while pursuing efforts to limit the temperature increase to 1.5°C. The impacts of climate change often have cascading effects across multiple sectors, as shown in Exhibit 3. Refer to Appendix 1 for details.

Exhibit 3: Consequences of climate change across multiple sectors.



1.3 Global Response and National Commitment to Climate Change

To address climate change, several global agreements and initiatives have been formulated and established. The Malaysian government has made several commitments in response to the global climate change treaty, as shown in Exhibit 4. Appendix 2 provides an overview of the commitments made by the Malaysian government in addressing climate change and the SDG Goals.

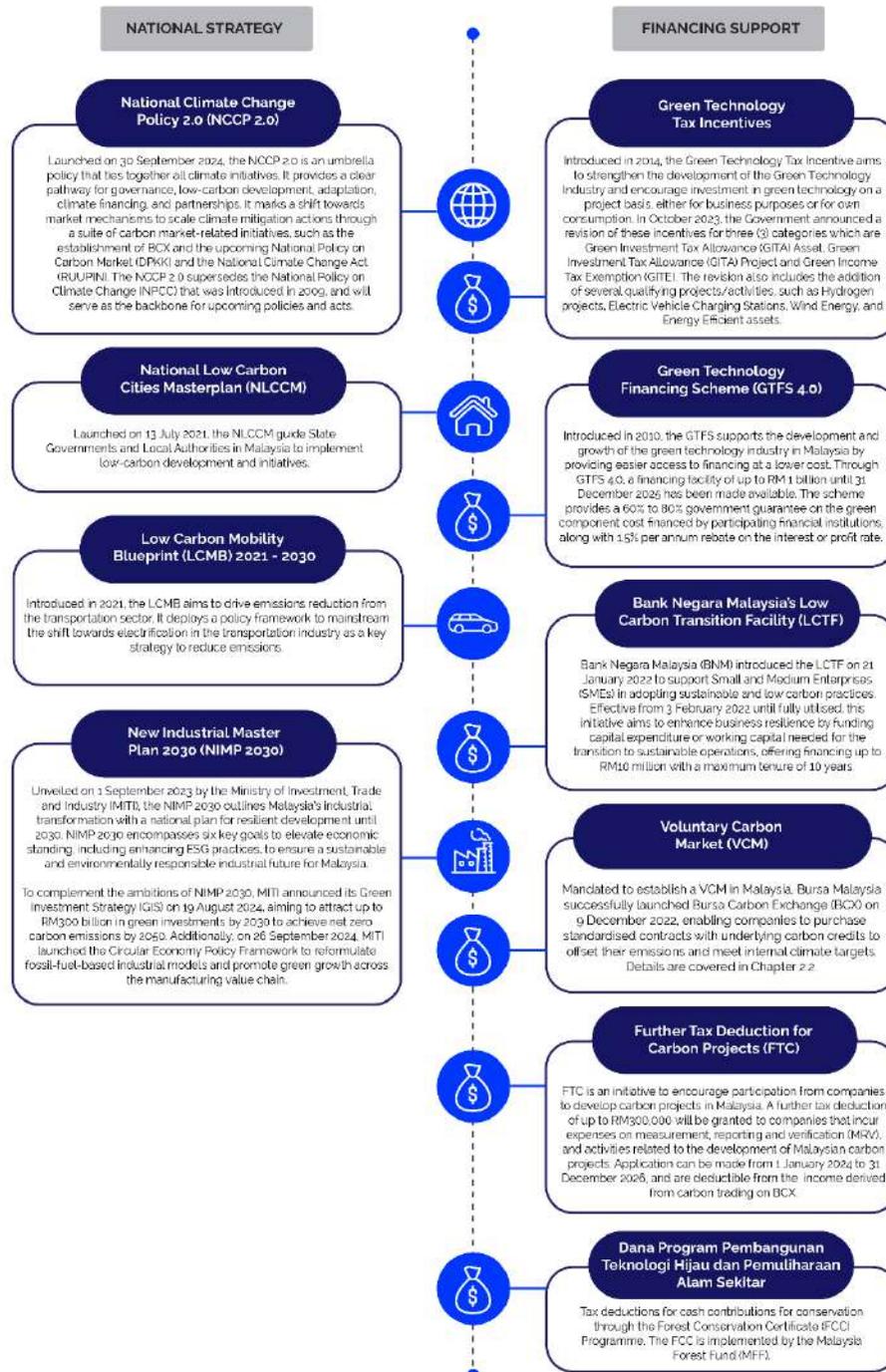
Exhibit 4: Global and national commitments to climate change.



Source: Derived from various sources

Malaysia has formulated comprehensive policies and action plans targeting major sectors that significantly contribute to GHG emissions. Some of these are shown in Exhibit 5. These policies and action plans demonstrate Malaysia's commitment to mitigating climate change and transitioning towards a low-carbon and sustainable future. Refer to Appendix 3 for further details on these policies, action plans and financing support. Kindly also refer to [Chapter 8: Relevant Government Incentives](#).

Exhibit 5: National low-carbon policies, action plans and financing support.



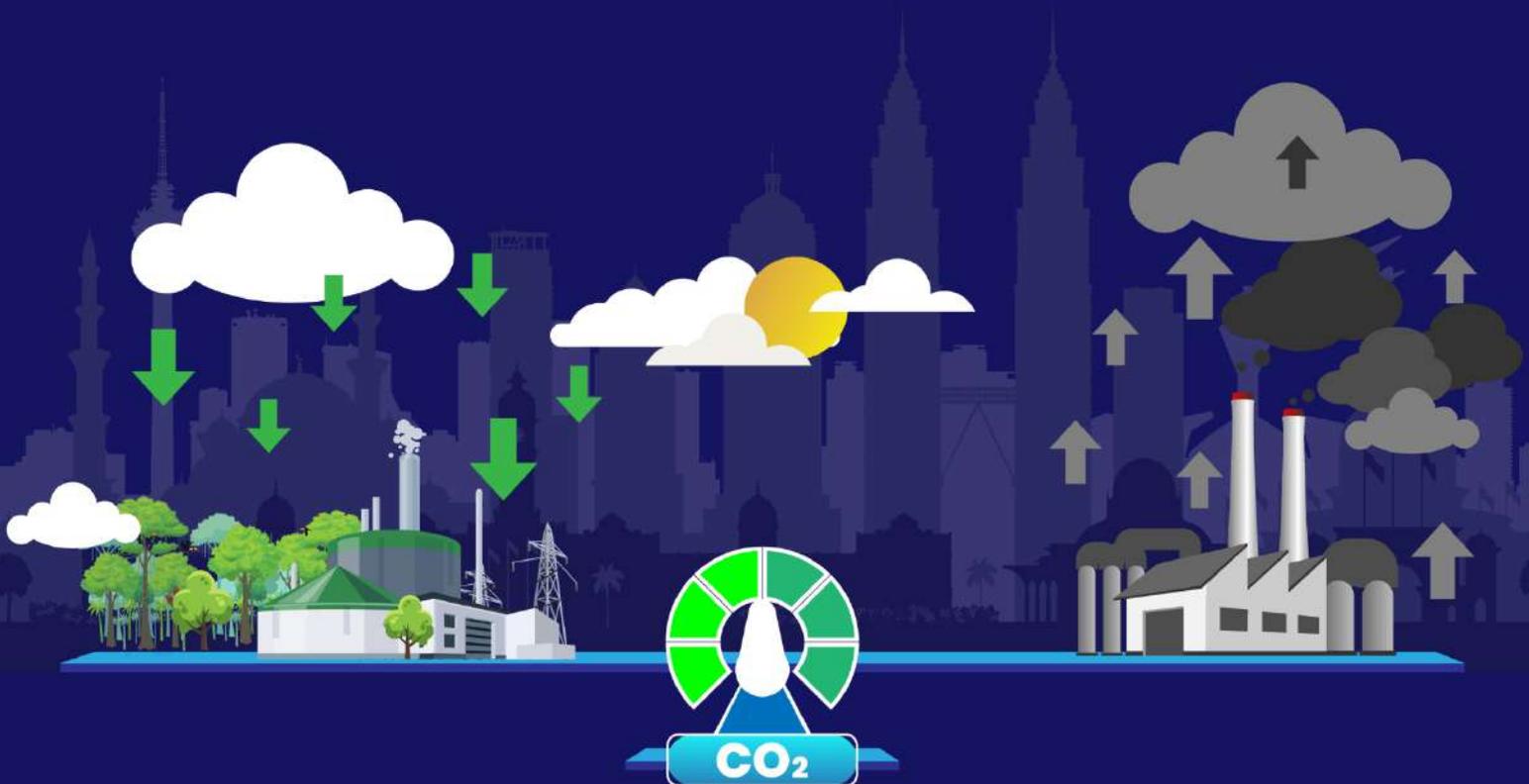
Chapter 2

Introduction to the Voluntary Carbon Market (VCM)

2.1 Chapter Summary

2.2 Introduction to Carbon Markets

2.3 Introduction to the VCM in Malaysia



Chapter 2: Introduction to the Voluntary Carbon Market (VCM)

2.1 Chapter Summary

The carbon market refers to the trading of carbon credits or carbon allowances, of which one (1) unit represents one (1) tonne of carbon dioxide equivalent (CO_{2eq}). It can be divided into two (2) main types: compliance market and voluntary market. In the compliance market, a carbon allowance is a government-issued permit allowing a company or entity to emit a specific quantity of CO_{2eq} into the atmosphere, whereas, in a voluntary market, a carbon credit refers to a specific quantity of CO_{2eq} avoided, reduced or removed from the atmosphere.

The compliance market operates under regulatory frameworks, such as the Paris Agreement or national emission trading schemes. It sets mandatory emission reduction targets for participating entities, who can trade carbon credits to meet their obligations. The goal is to achieve emission reduction commitments and compliance with international agreements.

The voluntary market, on the other hand, is driven by organisations and individuals voluntarily offsetting their emissions. Participants purchase carbon credits to compensate for their carbon footprint and demonstrate environmental responsibility. This market is not bound by regulatory requirements but is guided by international standards and best practices.

The participants of the VCM include various entities that engage in the trading and offsetting of carbon credits outside of regulatory compliance requirements. These participants can range from companies, organisations and governments to individuals who voluntarily take part in offsetting their emissions or supporting climate projects.

The trading platform of the VCM serves as a marketplace where the buying and selling of carbon credits occur. It provides a centralised platform for participants to trade verified emission reductions (VERs) or carbon offsets. The platform facilitates transparency, efficiency and liquidity in the carbon market by connecting buyers and sellers, enabling transactions and ensuring the integrity of carbon credits.

The issuance of voluntary carbon credits involves the assessment, verification and registration of carbon projects. Once a project meets the required criteria and undergoes a rigorous evaluation process, carbon credits are issued and can be bought and sold in the voluntary market. This mechanism incentivises sustainable projects, encourages investment in climate action and supports the transition to a low-carbon economy. International standards, such as those developed by organisations like Verra and Gold Standard, provide guidelines and certification for voluntary carbon projects. These standards ensure transparency, credibility and additionality of carbon credits. They define the eligibility criteria and verification processes for project activities, ensuring the integrity of voluntary carbon credits. Although challenges exist in the current VCM, the international VCM community is developing solutions to address the current gaps to improve the integrity and quality of carbon credits generated.

The VCM is one of the key initiatives identified to enable Malaysia to become a net zero greenhouse gas (GHG) emission nation by 2050. Launched by Bursa Malaysia, Bursa Carbon Exchange (BCX) is Malaysia's pioneer multi-environmental product exchange trading platform, and is also the world's first Shariah-compliant carbon exchange.

Operated by a well-established national multi-asset exchange, BCX is designed for corporates that embrace Environmental, Social and Governance (ESG) principles or are aligned with Shariah principles. Being market-driven, BCX provides market participants with access to high-quality carbon credits and renewable energy certificates (RECs), operates on a pre-funding model to reduce counterparty and delivery risk and offers standardised products to provide a user-friendly trading experience.

BCX offers three (3) modes of trading: auction, off-market transaction and continuous trading. The settlement is instantaneous. Further details on BCX and onboarding can be found in the [Rules of Bursa Carbon Exchange](#), accessible via the [BCX website](#).

2.2 Introduction to Carbon Markets

2.2.1 Carbon Credit and Carbon Allowance

One (1) tradable carbon credit or carbon allowance normally equates to one (1) tonne of carbon dioxide (CO₂) or CO_{2eq}, avoided, reduced or removed from the atmosphere, and both carbon credits and carbon allowances are referred to as tradable assets.

These key instruments are used in carbon markets to incentivise and finance projects that reduce GHG emissions.¹ Carbon credits or carbon allowances can be bought, sold or retired/surrendered.² Both instruments are used in carbon markets to manage and reduce GHG emissions.³ However, there are some key differences between carbon credits and carbon allowances, as illustrated in Exhibit 6.

¹ This includes GHG emissions avoidance, reduction and removal.

² Within the context of the voluntary carbon market, carbon credits are retired, whereas within the context of the compliance carbon market, allowances are surrendered.

³ This includes GHG emissions avoidance, reduction and removal.

Exhibit 6: Differences between carbon credits and carbon allowances.

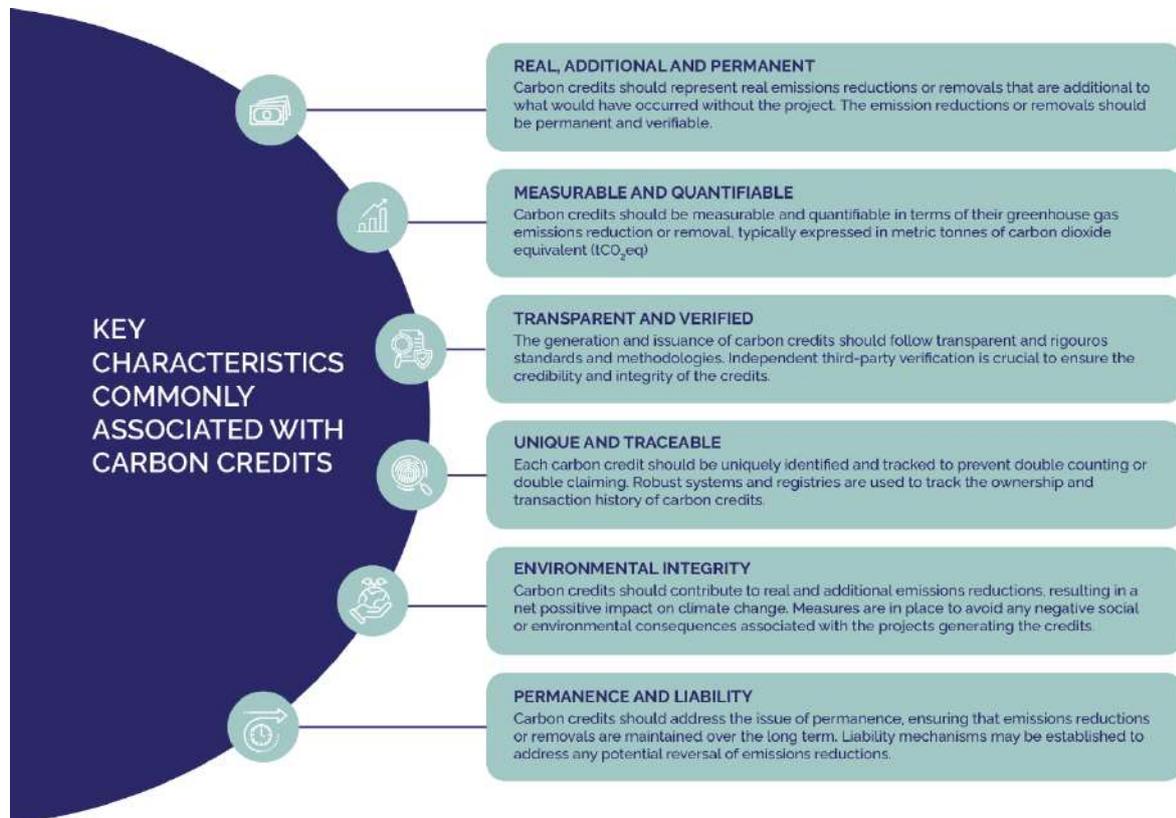
	Carbon Credits	Carbon Allowances
Definition	Carbon credits represent quantifiable reductions or removals of GHG emissions that can be bought or sold as units. They are generated by projects or activities that reduce emissions or enhance carbon removal.	Carbon permits/allowances are granted by regulatory authorities to compliance entities covered by Emissions Trading Schemes (ETSs) to emit a certain amount of GHG within a defined time period.
Purpose	Carbon credits are used by entities to offset their own emissions. They can be purchased to compensate for emissions that exceed a company's target or compliance limit. ⁴	Carbon allowances are allocated to compliance entities by regulatory authorities as part of a cap-and-trade system. They serve as permits that allow a specified level of emissions.
Generation of Units	Voluntary international and independent standards are used to measure, monitor and issue carbon credits.	Carbon allowances are issued or allocated by government or regulatory bodies based on a predefined cap on emissions for a specific industry or sector.
Flexibility	Carbon credits offer flexibility as they can be bought and sold in the carbon market. They can be used by entities to meet their emission reduction targets or to trade with other entities.	Generally, carbon allowances are not freely transferable and are tied to specific compliance entities or industries, limiting their trading flexibility.
Carbon Pricing	Carbon credit prices are influenced by various factors, including quality, certification standards, market demand and voluntary buyer preferences.	In an ETS, carbon permit/allowance prices are determined through market mechanisms where entities buy and sell based on supply and demand dynamics. In a carbon tax regime, the carbon tax is typically a fixed rate.
Market Mechanisms	Carbon credits are traded in voluntary or compliance markets. Voluntary markets allow individuals, companies or governments to purchase and retire carbon credits to offset their emissions. Compliance markets exist within regulatory frameworks and involve the trading of carbon allowances to comply with emission reduction obligations.	Carbon allowances are specifically designed for trading within emissions trading systems or cap-and-trade programmes. These systems establish a market mechanism where compliance entities can buy, sell or trade allowances based on their emissions needs and regulated requirements.
Scope of Applicability	Carbon credits have a broader scope of applicability and can be utilised by entities globally. They are not limited to specific sectors or regions and can be used by any entity interested in offsetting its emissions.	Carbon allowances are typically applicable within specific jurisdictions or regions that have established emissions trading programmes. The scope of carbon allowances is more focused on regulated sectors or industries that fall under the jurisdiction of the emissions trading system.

Source: Derived from various sources

⁴ This is upon the condition that the compliance market allows a certain volume of carbon credits to be used to reduce emissions beyond the cap imposed.

Some key characteristics commonly associated with carbon credits are shown in Exhibit 7.

Exhibit 7: Key characteristics of carbon credits.



Source: Compiled from various sources

These characteristics are based on widely recognised principles and standards in carbon markets. It is important to note that specific details and comprehensive guidelines may vary depending on the governing standards and organisations in particular regions.

2.2.2 Carbon Markets

A carbon market is generally a trading system or a place where instruments that are related to GHG emissions are bought and sold. Depending on the type of carbon market, the traded instrument is typically called a carbon credit or a carbon allowance.

There are broadly two (2) types of carbon markets:

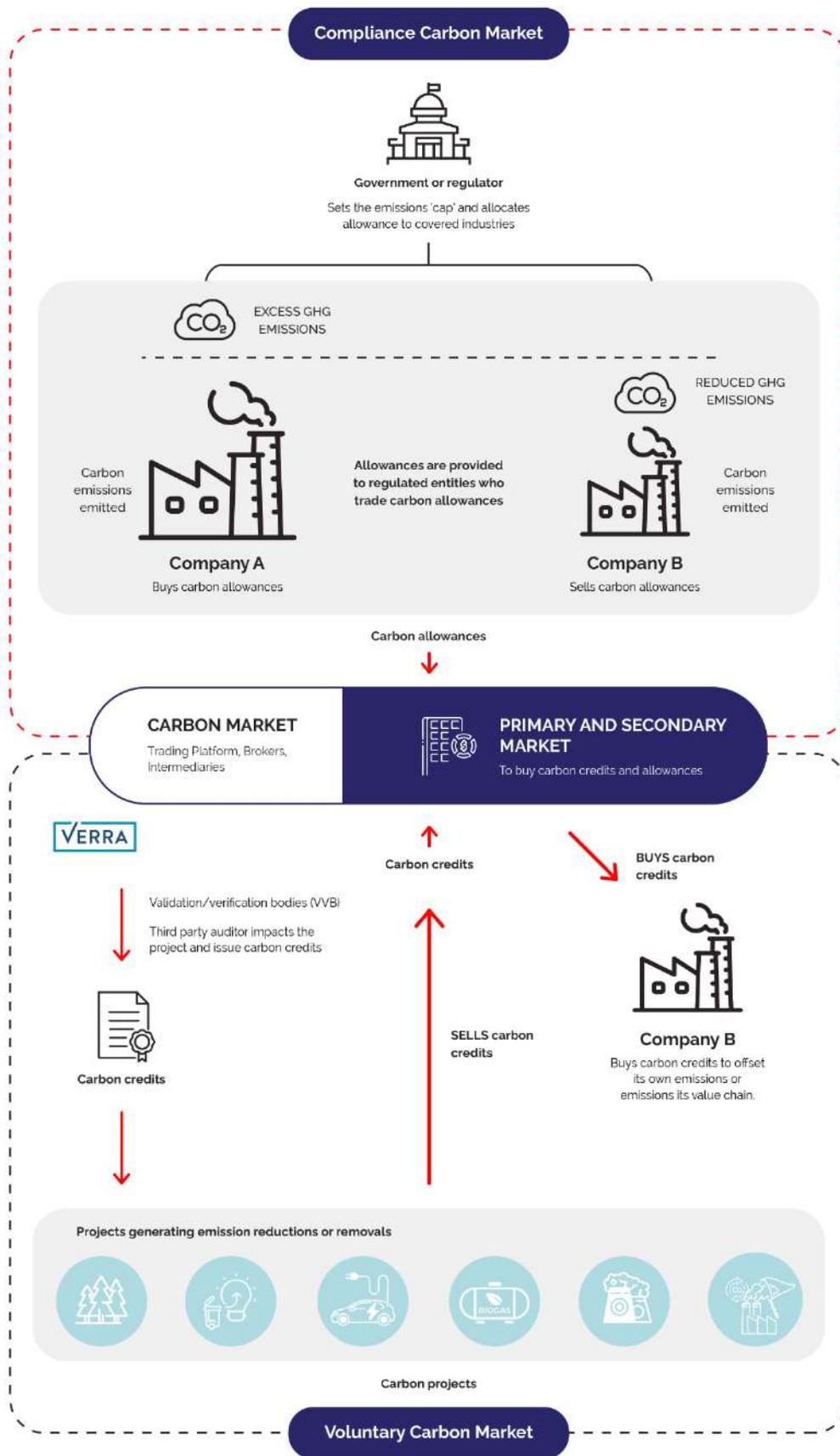
- **Compliance Carbon Market**
Mandatory systems that are regulated by national, regional or sub-regional governments and laws for the purpose of capping emissions for specific industries.
- **Voluntary Carbon Market**
The market operates outside of compliance markets and enables entities to buy and sell carbon credits to meet their own purposes on a voluntary basis.

Corporates play a significant role in the carbon market as they actively participate in carbon trading and offsetting activities. Many corporates disclose and report their GHG emissions and carbon reduction initiatives as part of their sustainability reporting. These disclosures provide transparency and accountability, demonstrating the corporates' commitment to addressing climate change.

The carbon market provides a platform for corporates to buy and sell carbon credits, allowing them to manage their carbon emissions and meet their sustainability goals. Many corporates voluntarily purchase carbon offsets to compensate for their GHG emissions. In regions where Emissions Trading Systems are established, corporates are required to obtain and surrender emissions allowances corresponding to their emissions. They can trade these allowances with other participants in the market, allowing for flexibility in meeting their emission reduction targets.

The voluntary carbon market provides an opportunity for corporates to go beyond regulatory requirements and take voluntary action to offset their emissions. They can purchase carbon credits from projects that generate emission reductions or removals, supporting sustainable development and contributing to climate change mitigation. Exhibit 8 illustrates the carbon market ecosystem.

Exhibit 8: Carbon market ecosystem.



Source: Illustration by the author for a visual representation of the text in the document

Both the compliance and voluntary carbon markets contribute to the global effort of addressing climate change by incentivising emission reduction projects and supporting sustainable projects. However, these markets diverge in terms of regulatory demands, market behaviour and the range of participants involved, as they serve distinct compliance obligations and voluntary initiatives. Exhibit 9 shows the distinctions between the compliance and the voluntary carbon markets.

Exhibit 9: Differences between compliance and voluntary carbon markets.

Market	Compliance		Voluntary
Instrument Type	Allowances/permits to emit	Carbon credits generated from emission reduction/avoidance/removal projects	Carbon credits generated from emission reduction/avoidance/removal projects
Description	An allowance to emit one tonne of CO ₂ eq. Issuance is based on the emissions cap set.	One unit of carbon credit, which is equivalent to one tonne of CO ₂ eq, generated from an emission reduction/avoidance/removal project	One unit of carbon credit, which is equivalent to one tonne of CO ₂ eq, generated from an emission reduction/avoidance/removal project
Issuer	National governments	Certification bodies that recognise the compliance scheme	Independent certification bodies
Examples	European Union Allowances	Certified Emission Reduction under the United Nations' Clean Development Mechanism	Verified Carbon Unit by Verra; Verified Emission Reduction by Gold Standard

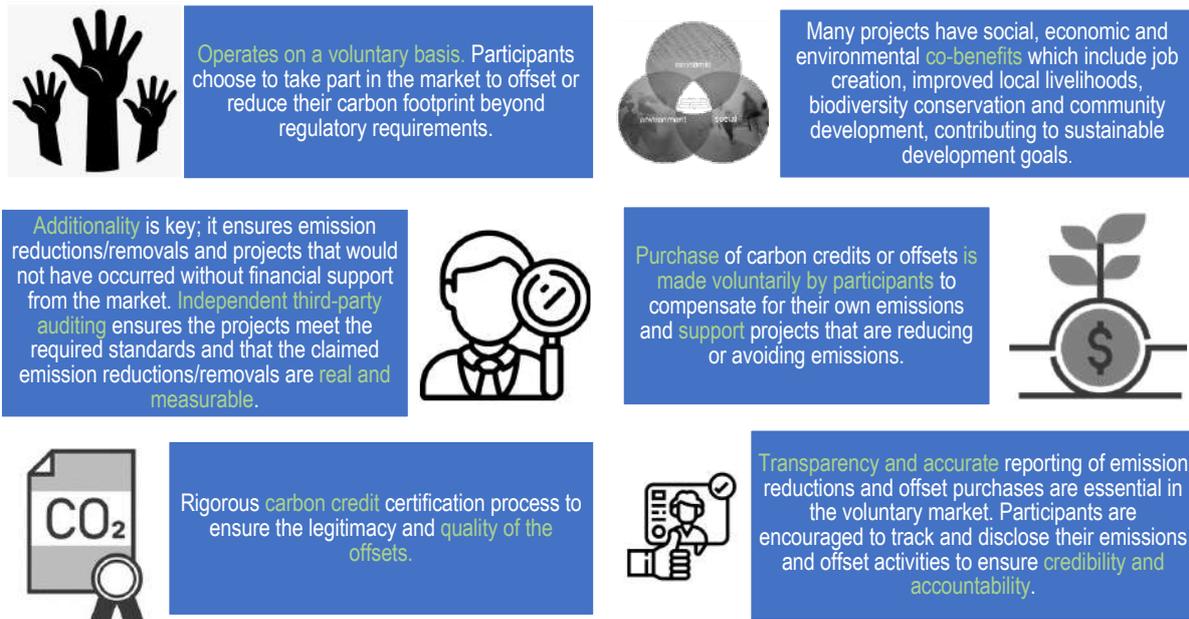
Source: [Magnus Commodities](#)

The focus of global climate action has shifted towards the Paris Agreement, which was adopted in 2015 and has broader participation. Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC) encompasses a range of measures and principles aimed at fostering international collaboration and implementing market-based mechanisms to tackle climate change. It establishes a framework that encourages countries to voluntarily work together to meet their emission reduction goals while promoting sustainable development objectives.

2.2.3 Voluntary Carbon Market

The voluntary carbon market (VCM) serves as a tool for individuals, organisations and companies to take voluntary action on climate change by supporting projects that reduce GHG emissions and promote sustainable development. It allows participants to go beyond regulatory requirements and demonstrate their commitment to environmental stewardship and sustainability. Exhibit 10 explains the principles of a VCM.

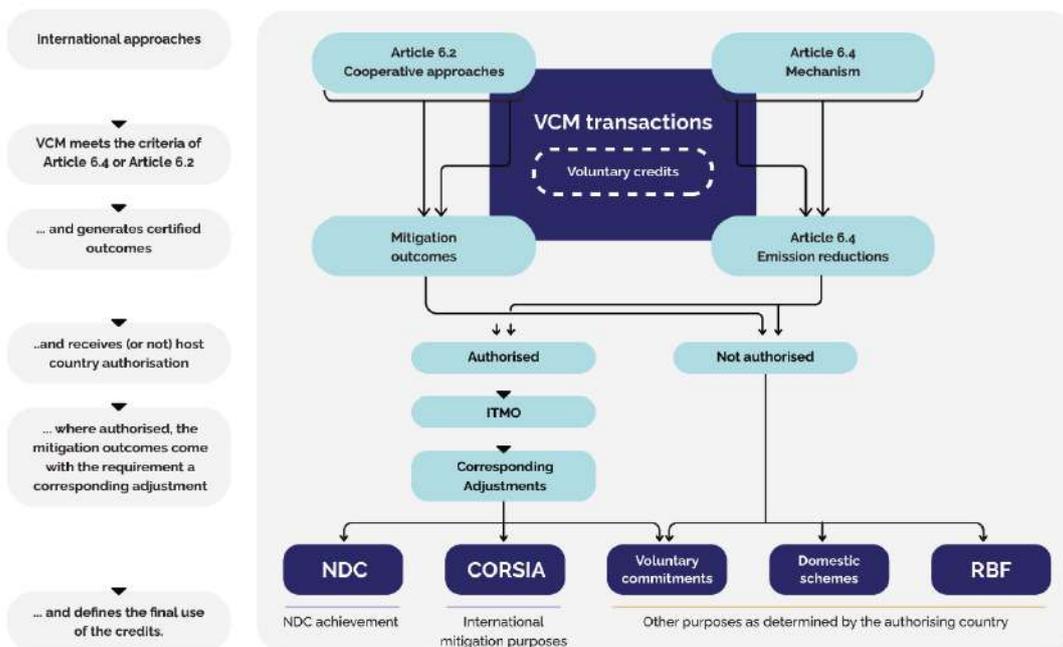
Exhibit 10: Key principles of a voluntary carbon market.



Source: Illustration by the author for a visual representation of the text in the document

The VCM plays a significant role in helping host nations fulfil their Nationally Determined Contribution (NDC) under the Paris Agreement. By generating local carbon credits that can be sold to international corporations, the VCM enables these nations to achieve emission reductions beyond their regulatory obligations. The VCM provides a platform for the trading and transfer of carbon credits and helps countries achieve their emission reduction goals collectively. Exhibit 11 shows how voluntary carbon credits may contribute to the objectives of the Paris Agreement.

Exhibit 11: Movement of voluntary carbon credits under Article 6.



Source: [VCM Primer.org](http://VCMPrimer.org)

Carbon credits transacted between countries must always be authorised by the host Parties to be transferred internationally and be used towards an NDC or other international mitigation purpose (such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) programme for international aviation). These require a Corresponding Adjustment (CA) to the seller country's GHG emissions inventory at the first international transfer and to the buyer country's GHG emissions inventory when the credits are retired for compliance with an NDC. The credits that are not authorised for international use towards other NDCs do not require CAs because the mitigation impact continues to be accrued in the [host country](#). The carbon credits issued can be traded and retired by voluntary market participants such as project developers, intermediaries and corporations. It should, however, be noted that the implementation details of CAs have not been finalised, pending further Conference of the Parties (COP) discussions and negotiations.

The Paris Agreement requires Parties to commit to NDCs and report on emissions regularly. Some countries use international market mechanisms to fulfil their targets, trading carbon credits and offsets. This has led to a surge in demand globally.

In response, the Ministry of Natural Resources and Environmental Sustainability (NRES), formerly known as the [Ministry of Natural Resources, Environment and Climate Change \(NRECC\) and previously the](#) Ministry of Environment and Water (KASA), published a National Guidance on Voluntary Carbon Market Mechanisms and the National Guidance on Forest Carbon Market in 2021 (see Section 3.2 for details). These non-legally binding documents serve as a reference for entities engaging in VCM activities in Malaysia, ensuring no double-counting in accounting for NDCs. They cover various sectors and complement existing forestry carbon market guidance. Emission reduction efforts are reported to the UNFCCC, with adjustments made to prevent double-counting.

Bursa Malaysia was mandated by the then NRECC, now known as NRES, to establish a VCM in Malaysia. On 9 December 2022, Bursa Malaysia successfully launched BCX, which enables companies to purchase standardised contracts with underlying carbon credits to, among others, offset their emissions and meet internal climate targets. Details are covered in Section 2.2.

2.2.4 Participants of a VCM

The key players of a VCM are shown in Exhibit 12. The section below provides an explanation of their roles in the carbon market.

Exhibit 12: Key players of a VCM.



Source: Compiled from various sources

1. Project Proponents

Project proponents are often the core of the VCM. A project proponent can be an individual, multiple individuals or an organisation who has overall control and responsibility for the project, including ownership or legal right to the project and credits issued.

2. Project Developers

Project developers identify mitigation and business opportunities and bring partners together to design, implement and manage projects that avoid or reduce GHG emissions or remove carbon from the atmosphere. They also support project proponents by ensuring that the project meets the criteria and requirements for carbon credits. These criteria are established by various carbon credit standards, including voluntary standards such as the Verified Carbon Standard (VCS) or Gold Standard (GS).

To generate carbon credits, project developers assist project proponents in following a rigorous process that involves establishing a baseline of emissions, implementing a project that reduces emissions or increases carbon sequestration beyond the baseline and procuring the verification of the emission reductions or carbon removals by an independent third-party auditor such as a Validation and Verification Body (VVB). The carbon credits that are issued by the voluntary standards upon the completion of these processes can then be sold to buyers, such as companies who use them to offset their own emissions on a voluntary basis.

In addition to managing the technical and administrative aspects of carbon credit-generating projects, project developers may also need to secure financing, negotiate contracts with stakeholders and engage with local communities and other stakeholders to ensure that the project is socially and environmentally sustainable.

3. End Buyers

End buyers in the VCM are individuals, companies or organisations that purchase carbon credits on a voluntary basis, without being required to do so by any regulatory or legal obligation. These buyers are driven by climate action aspirations to reduce their own carbon footprint or to support sustainability initiatives.

End buyers of voluntary carbon credits will typically evaluate the quality and credibility of the credits they intend to purchase and ensure that the projects they support truly

contribute to meaningful emission reductions and sustainable development. Buyers will look for carbon credits that are verified and certified by recognised standards.

4. Traders

Traders in the VCM are largely diverse groups of organisations that purchase and trade voluntary carbon credits as a form of financial investment. Traders may participate in the market through various channels, such as online carbon trading platforms, carbon brokers or investment funds that specialise in voluntary carbon credits. Some carbon trading platforms allow individuals to purchase and trade carbon credits directly, while others may require participation through a broker or direct buyer.

Like any other financial market, the VCM is subject to fluctuations in prices due to demand and supply, and may involve risks for traders. Traders usually evaluate the credibility and quality of the carbon credits they purchase, and consider factors such as the certification and verification of the credits, the reputation of the project developer or carbon standard and the financial return potential.

5. Carbon Trading Platform Operator

A carbon trading platform operator provides a digital marketplace or exchange where organisations can engage in the buying and selling of carbon credits. The carbon trading platform provides a centralised and transparent marketplace for participants to trade carbon credits and facilitates transactions by matching buyers with sellers based on their respective preferences and requirements.

A carbon trading platform typically offers functionalities such as order placement, price discovery, trade execution and settlement. It may also provide tools for monitoring and tracking carbon credit transactions. Carbon trading platforms can be accessed by various market participants, including companies, organisations, governments and individuals. Exhibit 13 shows the various types of trading platforms.

Exhibit 13: Types of platforms related to carbon trading.



Source: Derived from various sources

In a carbon exchange platform, standardised contracts are traded for the buying and selling of carbon credits. These contracts establish the terms and conditions for the exchange of carbon credits between participants in the market. Some key aspects of standardised contracts traded in carbon exchange platforms are shown in Exhibit 14.

Exhibit 14: Key aspects of standardised contracts.

Characteristics	Standardised carbon contracts represent a collection of credits from various projects that meet certain specified characteristics. Products can be standardised based on attributes that buyers use to differentiate and assess carbon credits. Typical attributes include project type (e.g. nature-based solutions (NBS) or tech-based, removal or avoidance), geography, co-benefits and standards.
Pricing Mechanism	The price may be determined through various methods, such as auctions, market-based mechanisms or bilateral negotiations. The price can fluctuate based on supply and demand dynamics in the market and can vary across different projects or regions.
Delivery and Settlement	The delivery and settlement process for the carbon credits is typically provided by the market operator acting as the central counter party or facilitator. The process will specify a standard timeframe for delivery, the location of delivery and the mechanism for transferring ownership and ensuring the integrity of the transaction.
Terms and Conditions	The terms and conditions for the trade are outlined, including the rights and obligations of the buyers and sellers. This can include provisions related to warranties, liability, <i>force majeure</i> events, confidentiality and dispute resolution mechanisms.
Regulatory Compliance	Compliance with relevant regulations and standards is ensured. The exchange trading platform may incorporate requirements set by governmental bodies or regulatory frameworks, such as emission reduction targets, reporting obligations and eligibility criteria for participating in the market.
Market Transparency	The contract provides consistent and comparable information about carbon credits. This allows buyers and sellers to evaluate the attributes and credibility of the credits being traded and make informed decisions.

Source: Derived from various sources

The standardisation of contracts in carbon exchange platforms brings efficiency and liquidity to the market. It facilitates the trading of carbon credits as fungible and tangible products, enabling participants to buy and sell credits with confidence, knowing that the terms and conditions are well defined and standardised across the platform. This was highlighted as one of the recommended actions in the final report published by Taskforce on Scaling Voluntary Carbon Markets in January 2021 for the purpose of "allowing trading at scale and provision of clear pricing signals".

The details of standardised contracts may vary depending on the particular carbon exchange platform, regional regulations and market practices.

6. Brokers

Brokers in the VCM are intermediaries who facilitate the trading of voluntary carbon credits between buyers and sellers. A carbon broker assists clients in navigating the complexities of the carbon market. They provide expertise, market knowledge and access to a network of buyers and sellers. Carbon brokers offer services such as market analysis, advisory and matchmaking. They help clients identify suitable carbon credit opportunities, where applicable, negotiate prices and facilitate transactions on their behalf.

2.2.5 Carbon Standards

A carbon standard or GHG-crediting programme refers to the complete set of rules, procedures and methodologies according to which certified carbon credits are generated and issued. Carbon standards are developed and governed by standards organisations, typically international non-governmental organisations (NGOs) that consist of a standard-setting arm, a regulatory arm and a validation and verification system usually outsourced to third parties. Governments can also develop or support the development of carbon standards.

Standards organisations have developed and administered standardised procedures for crediting GHG emission reductions, avoidance and removals. The standards organisations also safeguard the quality of VCM carbon credits and provide credibility to the baseline-and-credit system. They have clear rules and requirements that are regularly updated, i.e. mechanisms for stakeholder consultation and grievances and environmental and social safeguards, as well as methodologies for determining baselines and project contributions and for independent reviews of projects by competent, third-party auditors (known as validation/verification bodies or VVBs).

Carbon standards both certify carbon projects and programmes and facilitate transactions of carbon credits. Carbon standards issue one (1) credit for each metric tonne of GHG emissions avoided, reduced or removed, which are measured in tCO_{2eq}. This way, the carbon standards convert certified GHG emission reductions and removals into tradable carbon credits. To obtain certification of GHG emission reductions or removals and be issued credits to transact, VCM projects and programmes must comply with the standards' processes, rules, requirements and safeguards; apply methodologies approved by the standards; and provide evidence of compliance that is generated by project developers/project proponents and reviewed by an independent third-party auditor. [Carbon standards](#) use registries to track all credits generated, transfer tradable credits and trace transactions between buyers and sellers.

Examples of international carbon standards are as follows (this list is non-exhaustive; see also Exhibit 15 for more details on selected carbon standards):

- Verified Carbon Standard (VCS)
- Gold Standard (GS)
- ART TREES
- Plan Vivo
- Global Carbon Council (GCC)
- Puro.earth

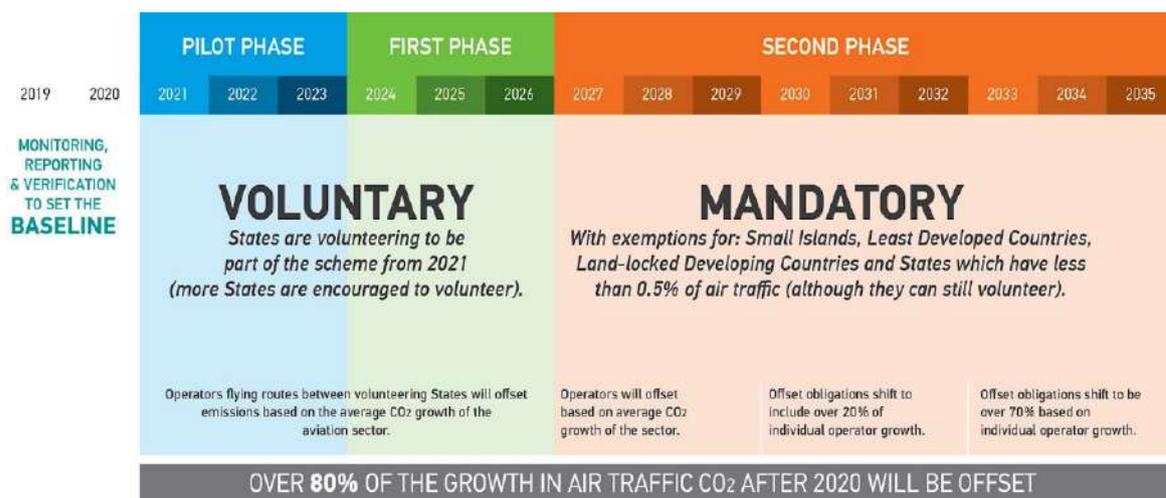
Exhibit 15: Examples of international carbon standards.

Standard	Market Volume (M = million)	Name of Credits (Representing 1 tCO _{2e})	Geographical Scope	Sectoral Scope
 Verified Carbon Standard	1,275 M credits (as of Oct 2024)	Verified Carbon Units (VCUs)	2,291 registered projects in 968 countries. VCS is dominant in developing countries	Covers all project classes
 Gold Standard <small>Climate Security Sustainability Arrangement</small>	384 M credits (as of Oct 2024)	Verified Emission Reductions (VERs)	3,370 registered projects in over 100 countries. Credits are purchased especially by buyers in the European Union	Covers most project classes, but excludes project-level REDD+
 PLAN VIVO <small>For Nature, Climate and Communities</small>	7 M credits (as of Oct 2024)	Plan Vivo Certificates (PVCs)	28 registered projects in over 20 countries including Latin America, Africa, Asia and the Pacific	Nature-Based Solutions (NBS) and Nature Climate Solutions (NCS); includes ecosystem rehabilitation, restoration and sustainable land management initiatives

Source: Verra [Project and Credit Summary](#) & [Verified Carbon Standard Gold Standard Our Impact & PlanVivo History](#)

The International Civil Aviation Organization (ICAO) created the Carbon Offsetting and Reduction Scheme for International Aviation ([CORSIA](#)), a global market-based mechanism to mitigate GHG in international aviation. CORSIA aims to reduce the growth in CO₂ emissions from international flights by requiring airlines to purchase carbon credits from authorised projects in other industries, like forestry or renewable energy, to make up for their emissions. CORSIA is being implemented in three phases, with the voluntary pilot phase having started in 2021, and currently transitioned into the phase one since 2024 before moving into the mandatory Phase two in 2027, as shown in Exhibit 16. On December 6, 2024, ICAO issued a series of documents that defines the eligibility and exclusion criteria for crediting programs in phase one. This update lays out specific eligibility requirements for carbon credits from six approved registries and introduces more stringent exclusions and attestation requirements.

Exhibit 16: Implementation phases of CORSIA.



Source: <https://aviationbenefits.org/environmental-efficiency/climate-action/offsetting-emissions-corsia/corsia/corsia-explained/>

Projects that attain additional benefits, such as biodiversity conservation, engagement with local communities and climate change adaptation, can obtain supplementary certifications based on specific international standards. Carbon credits associated with these additional certifications often command higher prices compared to basic carbon credits. These sought-after credits are particularly attractive to corporations or organisations looking to invest in carbon projects that go beyond the scope of climate change mitigation and deliver broader environmental and social advantages. Examples of additional certifications are as follows:

- i. Verra:
 - a. Climate, Community and Biodiversity Standards (CCBS)
 - b. Sustainable Development Verified Impact Standard (SD VSta).
- ii. Gold Standard: Global Goals (GS4GG).

2.2.6 Challenges and Gaps in Scaling Up the VCM

Several challenges and gaps have been identified within the carbon credits ecosystem that need to be addressed to ensure its effectiveness in reducing GHG emissions. Exhibit 17 highlights the key challenges identified by key players and stakeholders in the VCM ecosystem.

Exhibit 17: Key challenges identified in the VCM ecosystem.

No.	Key challenges identified in the VCM ecosystem
1.	<p>Governance</p> <p>Since each standard sets its own qualification criteria for offset projects, a like-for-like comparison of the quality of the carbon credits often is a challenge. However, recent developments have addressed some of these governance issues. The Integrity Council for the Voluntary Carbon Market (ICVCM) and the Voluntary Carbon Markets Integrity Initiative (VCMI) have been working closely to improve transparency, accountability, and overall trust in carbon credits.</p>
2.	<p>Adverse media</p> <p>Ongoing negative publicity on the quality and credibility of carbon standards and carbon projects is impacting confidence in the global VCM.</p>
3.	<p>Evolving standards</p> <p>The VCM is still undergoing an evolution with standards and criteria of the quality of carbon credits being refined and shaped along the way. Part of the reason for these evolving standards could be the increasing scrutiny by the global carbon community that serves to preserve the integrity of carbon credits. This poses challenges to project developers as they do not want to invest in projects that could potentially end up as stranded assets. A direct consequence is an evolving definition of "high"-quality carbon credits, which in turn, impacts on the liquidity of the carbon market.</p>
4.	<p>Additionality and baselines</p> <ul style="list-style-type: none"> • Financial-based additionality could be difficult to prove and there is a lack of clear consensus on project implications. • Practice-based additionality is the norm in the VCM; however, there should be an added focus on funding projects through multiple streams so as to avoid the confounding potential of financial additionality. • Carbon removal projects utilise inherently subjective baselines and more assumptive estimations to determine the impact.
5.	<p>High-quality credits are scarce</p> <p>Accounting and verification methodologies vary and there is a lack of explicitly specified additional benefits.</p>
6.	<p>Financing is a barrier</p> <ul style="list-style-type: none"> • Financing is another key challenge, especially for small- to mid-size project developers. • Most prevalent financing methods include forward purchase agreements and own funding. • 90% of industry feedback agree that forward products will be key to scaling up the VCM.
7.	<p>Long lead times, uncertain carbon prices</p> <ul style="list-style-type: none"> • In recent years, due to the surge in new carbon projects pending registration with carbon registries, bottlenecks have been caused in validation and verification processes and the issuance of carbon credits. • Certain carbon projects have long implementation periods and financial recovery will have to endure long lead times. Unless the suppliers have locked in the purchase agreement, they are exposed to unpredictable demand and carbon prices.
8.	<p>Lack of awareness and capacity</p> <p>In jurisdictions where VCMs are at a nascent stage, there is a general lack of awareness and institutional capacity among the corporates, investment communities, policymakers and technical experts required to develop a sustaining ecosystem. Examples of technical experts include carbon consultants, project developers, validation and verification bodies and those bodies providing monitoring, reporting and verification (MRV) services.</p>
9.	<p>Lack of linkages to the compliance market</p> <ul style="list-style-type: none"> • These linkages are perceived to be crucial to help drive the prices of carbon credits in the VCM and in turn, promote more carbon projects in the ecosystem. • This situation could be changed by future linkages to Article 6 of the Paris Agreement, which aims to integrate voluntary international cooperation for carbon emission reduction and in certain jurisdictions, domestic carbon compliance markets already have interactions with VCMs.

Source: Analysis with carbon community

To tackle the challenges and issues, initiatives have been introduced to simplify the complexities of the VCM and enhance transparency. These initiatives empower governments, businesses and society as a whole to engage in informed discussions regarding the significance of carbon finance as a crucial component of climate action. By increasing transparency and streamlining processes, these initiatives contribute to a more effective and inclusive VCM that supports the broader goal of addressing climate change.

While high-quality carbon credits possess the potential to unlock essential financial resources for reducing and removing billions of tonnes of emissions, concerns have been raised regarding the quality of these credits. These concerns have implications for the demand for carbon credits within the VCM.

The Integrity Council for the Voluntary Carbon Market (Integrity Council or [ICVCM](#)) serves as an independent governing body for the VCM. It establishes a threshold standard based on its Core Carbon Principles (CCPs). This standard provides a reliable and strict framework for recognising carbon credits of high integrity that have a demonstrable and verifiable impact on the climate and are in line with the latest scientific insights and best practices.

This standard is applied through an Assessment Framework at both the carbon-crediting programme and carbon credit category levels. It determines which carbon-crediting programmes and categories are eligible for CCP status. The 10 CCPs are depicted in Exhibit 18.

Exhibit 18: Fundamental principles for high-quality carbon credits.



Source: <https://icvcm.org/the-core-carbon-principles>

This publication, released in March 2023, presents the Programme-level Criteria and Assessment Procedure of the Assessment Framework (AF). It provides carbon-crediting programmes with insights into the Integrity Council process and the operational requirements for assessment, acting as a global benchmark and promoting transparency and accountability in the carbon credit market. The AF specifies which carbon-crediting programmes and technique types are CCP-eligible and offers instructions on how to apply

the CCPs. In the first half of 2024, the Integrity Council approved five carbon-crediting programmes as being CCP-Eligible, after being assessed for meeting the high-integrity criteria set out in its Core Carbon Principles (CCPs). These five programmes are ACR (American Carbon Registry), ART (Architecture for REDD+ Transactions), Climate Action Reserve (CAR), Gold Standard, and VCS by Verra, with more programmes undergoing assessments. Shortly after in June 2024, it started to release high-integrity CCP-labelled carbon credits, as it continues with its assessments on the methodology level.

Besides the ICVCM, certain experts offer carbon rating services or frameworks to assess the integrity and quality of carbon credits to assist buyers and investors. Buyers primarily focus on factors such as additionality, leakage, permanence and verification processes when considering the purchase of carbon credits. These services aim to provide an assessment of carbon credits based on established criteria and standards, aiding buyers in making informed decisions about their carbon credit investments, as shown in Exhibit 19.

Exhibit 19: Carbon rating services and frameworks in the market.

Framework and Rating Tools	Organisations	Source
<p>Carbon Credit Quality Initiatives (CCQI) – An online scoring tool that offers a free, user-friendly method to score different types of carbon credits against seven quality objectives.</p>	<p>Environmental Defense Fund, World Wide Fund for Nature (WWF-US) and Oeko-Institute</p>	<p>https://carboncreditquality.org/scores.html</p>
<p>BeZero's Carbon Ratings (BCR) represent BeZero's opinion on the likelihood that a given credit achieves a tonne of CO₂eq avoided or removed. The BCR is a publicly available, risk-based framework for assessing carbon efficacy which provides users with a risk-based assessment for understanding and interrogating carbon credit performance of any type, in any sector and country.</p>	<p>BeZero Carbon and AlliedOffsets</p>	<p>https://bezerocabon.com/ratings/</p>
<p>Sylvera Carbon Credit Ratings develop specific frameworks for each project category to assess quality across fundamentally different categories of activities. All frameworks are peer-reviewed by a committee of experts and carbon market stakeholders – including project developers and registries – to ensure scientific consensus.</p>	<p>Sylvera</p>	<p>https://www.sylvera.com/ratings</p>

2.3 Introduction to the VCM in Malaysia

2.3.1 Role of Carbon Markets in Malaysia

Globally, governments and businesses are pursuing paths to achieve their net zero goals. Climate Action Tracker, an independent scientific project that tracks government climate action, reported as of November 2022 that around 140 countries had announced or are

considering net zero targets and these countries cover close to 90% of global emissions, compared to 130 countries, covering about 70% of emissions, in May 2021. Malaysia is one of the countries with the same aspiration and its target is to become a net zero GHG emissions nation by 2050. Malaysia increased its mitigation ambition with an unconditional target to reduce its economy-wide carbon intensity against GDP by 45% in 2030 compared to 2005 levels in its revised [NDC](#) in July 2021.

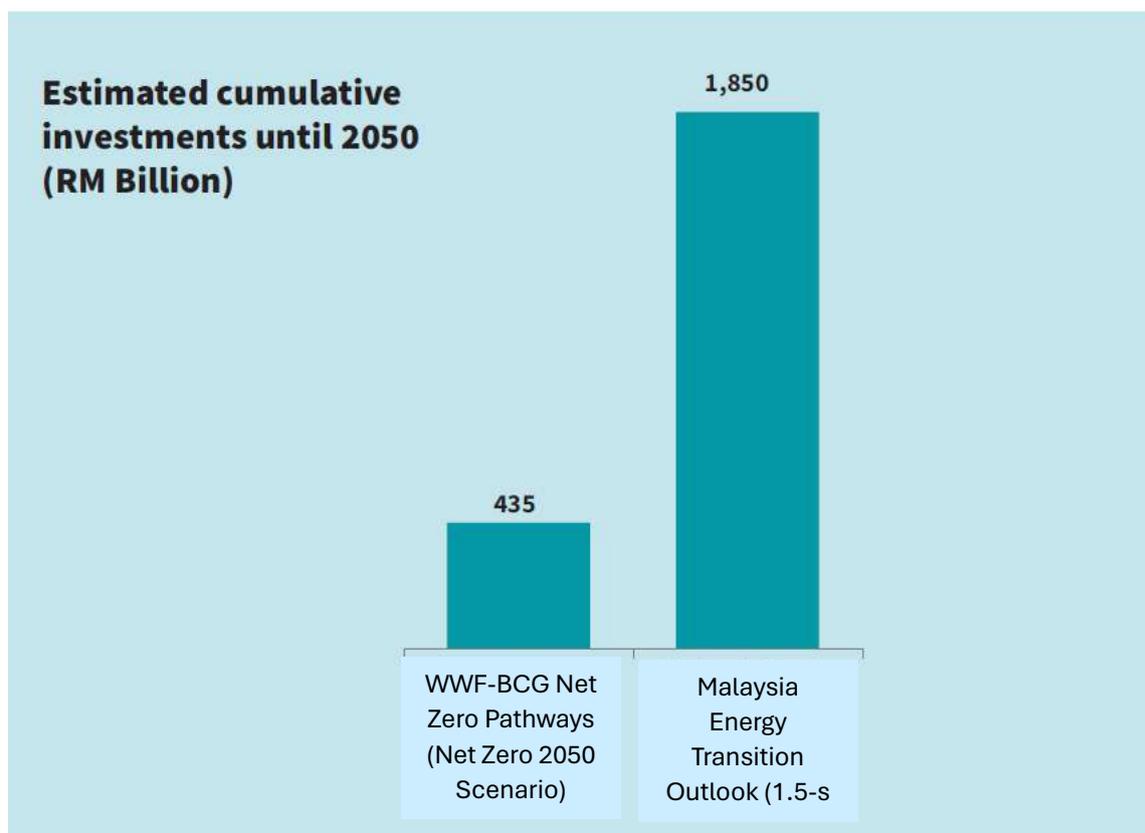
Malaysia's involvement in carbon credit project development is not new. The country began its participation in the carbon market through the Clean Development Mechanism (CDM) under the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC). Established under this framework, the CDM enabled developed countries to fund greenhouse gas (GHG) mitigation projects in developing nations like Malaysia, allowing them to use certified emission reductions (CERs) to meet part of their Kyoto targets. During the CDM era, numerous carbon projects were implemented, which enabled Malaysia to attract international investment and promote sustainable development across various sectors.

As of the time of updating this VCM Handbook, there were 143 registered/CDM projects in Malaysia. Most of these projects in Malaysia have adopted methodologies which are focused on energy (renewable/non-renewable) and waste handling and disposal. The details of project types and examples of those registered under the CDM in Malaysia are listed under Appendix 4.

Investments Required for Net Zero

There have been several indicative investments required for Malaysia to achieve its net zero aspiration. During the launch of Part 1 of the National Energy Transition Roadmap (NETR) on 27 July 2023, it was stated that a cumulative investment ranging from RM435 billion to RM1.85 trillion is needed for Malaysia to make the energy transition and achieve net zero by 2050 (see Exhibit 20). In order to achieve the target of 70% of renewable energy in the installed power mix by 2050, an indicative investment of RM637 billion is required. Part 1 of the NETR unveiled the implementation of ten (10) flagship projects and initiatives, which are expected to generate investments of approximately more than RM25 billion through a combination of private and public funding. To this end, the NETR has also acknowledged the role of BCX in driving a nascent VCM. Subsequently, in Part 2 of the NETR, carbon pricing mechanism has been identified as one of the key initiatives to enable financing and investment.

Exhibit 20: Cumulative investments required for Malaysia to achieve net zero.



Source: National Energy Transition Roadmap (July 2023)

Separately, IRENA's [Malaysia Energy Transition Outlook \(2023\)](#) has forecast that as much as USD415 billion will need to be invested in energy transition technologies and related infrastructure in the 1.5°C-Scenario by 2050, compared to USD159 billion in the Planned Energy Scenario (PES).⁵

The corporates in Malaysia are preparing, enhancing and aligning their commitments to the sustainability and decarbonisation strategy in response to increasing ESG pressures from stakeholders such as financial institutions, investors and customers. Over the years, Bursa Malaysia has expended significant resources and efforts to aid and nudge public listed companies to improve their ESG practices so that they remain relevant and investable. In 2024, Bursa Malaysia announced several ESG-related initiatives, including:

1. The launch of the following sustainability-focused products:
 - the USD Used Cooking Oil FOB Straits (Platts) Futures Contract (FUCO)
 - renewable energy certificates
2. In June 2024, Bursa Malaysia launched the CSI Solution to support Malaysian companies integrate ESG into their business strategies and operations, in part by providing tools to assess carbon emissions across their value chains, and to streamline sustainability reporting.

⁵ The PES reflects current plans and other expected objectives or policies that were approved as of the time of conducting the analysis.

- On 23 December 2024, Bursa Malaysia announced enhancements to the sustainability reporting requirements for the Main Market and ACE Market Listing Requirements, aligning with the National Sustainability Reporting Framework. Seeking to foster the IFRS Sustainability Disclosure Standards as the baseline for sustainability reporting in Malaysia, this is designed to improve the transparency and accountability of how listed issuers manage their sustainability-related risks and opportunities

2.3.2 Background of Bursa Carbon Exchange (BCX)

In the [Malaysian Budget 2022](#) tabled on 29 October 2021, it was announced that the VCM initiative will be implemented by Bursa Malaysia to provide a trading platform of carbon credits between green asset owners and other entities transitioning towards low-carbon practices. This is to encourage sustainable growth, ensure competitiveness and relevance in the global market and ultimately enable Malaysia to achieve the aspiration of being a net zero GHG emissions country by 2050.

In addition to the mandate of building a trading platform, Bursa Malaysia has set out to develop and nurture the local VCM ecosystem by connecting and bringing together a host of key actors and players (see Exhibit 21). This local VCM ecosystem is essential to pivot the country towards a low-carbon economy while the trading platform provides an avenue for transparent, fair and orderly trading of carbon credits. Towards this end, Bursa Malaysia's endeavour to develop a robust local ecosystem includes frequent engagements with stakeholders from the public and private sectors to develop cohesive carbon trading policies for Malaysia which adopt the whole-of-nation approach..

Exhibit 21: Key actors and players in the Malaysian VCM ecosystem.



Source: Bursa Carbon Exchange

On 9 December 2022, [Bursa Malaysia launched](#) Malaysia's pioneer VCM initiative with the introduction of BCX, which is also the world's first [Shariah-compliant](#) multi-environmental product exchange, diversifying the product universe for ESG and Shariah-compliant products. The launch was officiated by the Minister of the then Natural Resources, Environment and Climate Change (NRECC), [now known as the Ministry of Natural Resources and Environmental Sustainability \(NRES\)](#), Yang Berhormat Nik Nazmi Nik Ahmad (see Exhibit 22).

Exhibit 22: Launch of Bursa Carbon Exchange, 9 December 2022.



Tan Sri Abdul Wahid Omar, Chairman of Bursa Malaysia, presenting a token of appreciation to Yang Berhormat Nik Nazmi Nik Ahmad, Minister of NRECC (now known as NRES), following the successful launch of BCX. This was witnessed by (from left to right): Datuk Muhamad Umar Swift, Chief Executive Officer of Bursa Malaysia; Datuk Seri Ir. Dr. Zaini Ujang, NRECC and Dato' Anis Rizana Mohd Zainudin, Deputy Secretary General of Treasury (Investment), Ministry of Finance.

Source: Bursa Malaysia Berhad

2.3.3 Unique Aspects of BCX

The main unique aspects of BCX are summarised in Exhibit 23.

Exhibit 23: Unique aspects of BCX.



Source: Bursa Carbon Exchange

BCX is operated and managed by Bursa Malaysia Carbon Market Sdn Bhd, a wholly owned subsidiary of Bursa Malaysia Berhad, which is a well-established market operator and one of the largest trading bourses in the ASEAN region. Being the national stock exchange of Malaysia, Bursa Malaysia has vast experience in setting up exchanges and ensuring a fair and orderly market, and is thus confident of providing a seamless trading experience to both international and domestic participants.

Firstly, by working closely with the Malaysian federal government and various state governments, Bursa Malaysia aims for BCX to become the primary, trusted way for corporate buyers from around the world to access Malaysian-based carbon credits and RECs. Furthermore, with an increasing number of Malaysian companies stepping up to meet rising ESG expectations over time, more than 1,000 listed companies on Bursa Malaysia could benefit from BCX through their active participation in carbon and RECs trading. Malaysian corporates can participate in the demand and supply and purchasing or selling of carbon credits and RECs as part of their decarbonising, investment or cost recovery strategies.

Secondly, BCX is the world's first Shariah-compliant multi-environmental product exchange. BCX received its Shariah pronouncement from Bursa Malaysia's Shariah Committee on 10 November 2022, specifically in relation to:

1. Key features of the BCX trading platform:
 - Non-interest-bearing accounts;
 - No interest charged for late payment; and
 - Listing of Shariah-compliant products.
2. Shariah-compliant products on the BCX that fulfil the following requirements:
 - The asset must have an attached value;
 - The asset must prove to be beneficial according to prevalent customs;
 - The asset must be owned and controlled by a party; and
 - The asset must be allowed to be utilised by the Shariah (i.e. does not fall under the category of Shariah-prohibited assets).

Subsequently, BCX also received the Shariah pronouncement for renewable energy certificates (RECs) on 21 February 2024. Against this backdrop, the BCX is designed based on the principle of inclusiveness and will serve corporates that embrace ESG principles and/or those that are aligned with Shariah principles.

To this end, BCX is market-driven, continuously engaging with market players and participants for improvements and to provide better services.

Major features implemented after much industry consultation include:

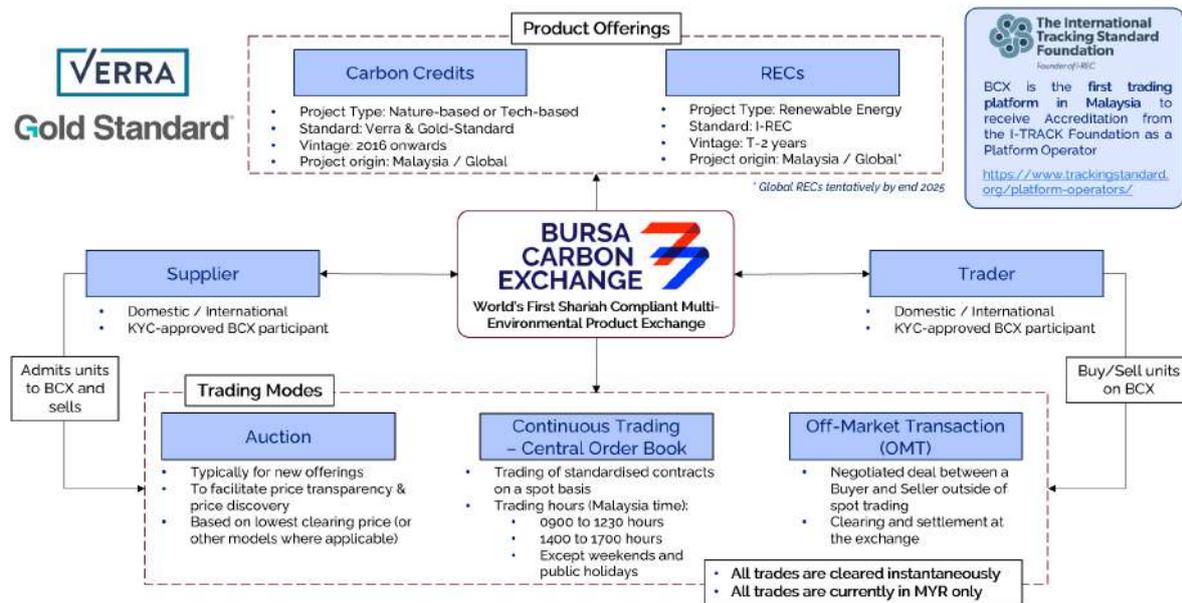
1. Only high-quality carbon credits and RECs issued by well-recognised independent standards will be offered on the BCX platform;
2. A pre-funding and pre-allocation of carbon credits and RECs mechanism based on a custodial model has been adopted to reduce counterparty and delivery risk; and
3. Standardised products with underlying carbon credits and RECs will be traded to cater for both global and domestic participants.

BCX will continue to focus on developing relevant solutions and products to meet the evolving needs of BCX participants and Malaysian corporates.

2.3.4 Salient Features of the BCX

The salient features of the BCX can be divided into three categories: exchange, standardised products and participants (see Exhibit 24).

Exhibit 24: Salient features of the BCX in a nutshell.



Source: Bursa Carbon Exchange

Trading

Three (3) trading modes are offered by BCX:

1. Auction

An auction is conducted for the purpose of facilitating the price discovery of new products launched by BCX, unless specified otherwise.

Sellers who wish to participate in the auction are required to provide a reserve price. On the other hand, buyers who wish to purchase are required to submit their sealed bids electronically through the BCX platform (see Exhibit 25).

Bids will be ranked by price, volume and time basis. The price at which the total quantity of received bids does not exceed the total offered quantity will be the auction clearing price. All successful bidders will pay the same clearing price.

Exhibit 25: Auctions conducted by BCX since 2023.

Inaugural Carbon Credits Auction (16 Mar 2023)	First Malaysian Nature-Based Carbon Credit Auction (25 July 2024)	Inaugural RECs Auction (25 June 2024)	Year-End RECs Auction (28 November 2024)
 <p>Southern Cardamom Project (Cambodia)</p> <ul style="list-style-type: none"> Standard: Verra Project ID: 1748 Project Type: Agriculture Forestry and Other Land Use - REDD <p>Linshu Biogas Recovery and Power Generation Project (China)</p> <ul style="list-style-type: none"> Standard: Verra Project ID: 2402 Project Type: Waste handling and disposal 	 <p>Kuamut Rainforest Conservation Project (Sabah, Malaysia)</p> <ul style="list-style-type: none"> Standard: Verra Project ID: 2609 Project Type: Agriculture Forestry and Other Land Use - IFM  	 <p>Murum Hydroelectric Plant (Sarawak, Malaysia)</p> <ul style="list-style-type: none"> Standard: I-REC (E) Technology: TC310 Dam Fuel Code: ES300 Hydro-Electric Capacity: 944 MW 	 <p>Multiple solar, bioenergy, and small hydro projects in Malaysia</p> <ul style="list-style-type: none"> Standard: I-REC (E) Product Codes: <ol style="list-style-type: none"> Solar (SRECv24) Bioenergy (BRECv24) Small-Hydro (SHRECv24)

Source: Bursa Malaysia Berhad

2. Off-market transaction

A seller and a buyer are permitted to enter into an off-market transaction, in which the BCX trading platform will be used for clearing and settlement, for any trades negotiated and matched outside of BCX's central order book. This reduces the counterparty and delivery risk for both the seller and buyer.

This is also widely known as a block trade or over-the-counter (OTC) transaction.

3. Continuous trading

Both the seller and buyer will be able to submit bid and offer orders electronically on the BCX trading platform. Bids and offers shall be matched by BCX's central order book using a price-time algorithm.

Since the inaugural auction, BCX's off-market and continuous trading platform has gone live since 25 September 2023. Subsequent auctions were also organised to introduce new standardised products for trading such as Malaysian Nature-based Plus Carbon Contract (MNC+), and renewable energy certificates (RECs) as new environmental asset on the platform, fully operationalising its platforms and suite of environmental assets.

Custodial model

Both the seller and buyer must pre-fund their account before any trade order can be submitted. This means that the seller must deposit carbon credits with BCX before any sell order can be entered, or the buyer must deposit sufficient cash with BCX before any buy order can be entered. BCX will hold the deposited cash and carbon credits in trust for BCX participants.

Upon a successful request of an off-market transaction or matching through the trading platform on BCX, the settlement shall be instantaneous. This means that the seller's and the buyer's accounts with BCX will be updated immediately with their asset and cash balance reflecting the latest transaction instantly.

Standardised products

In terms of products, BCX will categorise carbon and RECs projects into standardised products based on the carbon credits and RECs meeting BCX's contract specifications. This will reduce the complexity that buyers might face otherwise, given the many projects available in the VCM and RECs space and the nuanced differences between these projects.

Carbon projects will be categorised based on the contract specifications determined by BCX, which for the time being include the following four (4) attributes:

1. Project type (i.e. whether nature-based or tech-based);
2. Project geography (i.e. whether the project is located in or outside Malaysia);
3. Co-benefits/ SDG contributions (i.e. whether the project includes any co-benefits as indicated by the relevant labels from standards); and
4. Vintage year

RECs will be categorised based on the contract specifications determined by BCX, which for the time being include the following three (3) attributes:

1. Project type (i.e. whether hydropower, small-hydropower, solar, or bioenergy);
2. Project geography (i.e. whether the project is located in or outside Malaysia); and
3. Vintage year

As of the publication date of the Handbook, BCX only accepts carbon projects issued by Verra and Gold Standard, and RECs issued under the I-REC (E) to be traded on the BCX trading platform, and the vintage of the carbon projects must be from 2016 onwards, and vintages for RECs must not exceed more than two years from the current year (i.e. T-2) Vintage typically refers to the calendar year during which the emission reduction, avoidance or sequestration occurs. This criterion for carbon credits is in line with the eligibility framework of the [CORSIA](#), which is the world's first mechanism targeted to reduce GHG emissions from the international aviation sector.

Participants

As for market participants, BCX is open to Malaysian and international corporates to participate as a Trader, Supplier, Broker or Market Maker. The types of market participants will be introduced in stages. At the commencement of trading, both Traders and Suppliers will be offered, while Brokers and Market Makers will be included at a later stage.

Further details can be found in the [Rules of Bursa Carbon Exchange](#), accessible via the BCX website.

2.3.5 Onboarding as a BCX Participant

Any entity interested in participating and trading on BCX should first check if it fulfils the eligibility requirements specified in Rule 3.03 of the [Rules of Bursa Carbon Exchange \(BCX Rules\)](#).

If deemed eligible, the [Application Form for Participation in Bursa Carbon Exchange](#) can be downloaded, read in conjunction with the [BCX Rules](#), and filled out accordingly. Part F of the [Application Form for Participation in Bursa Carbon Exchange](#) contains the list of relevant supporting documents to be submitted together with the Application Form. For

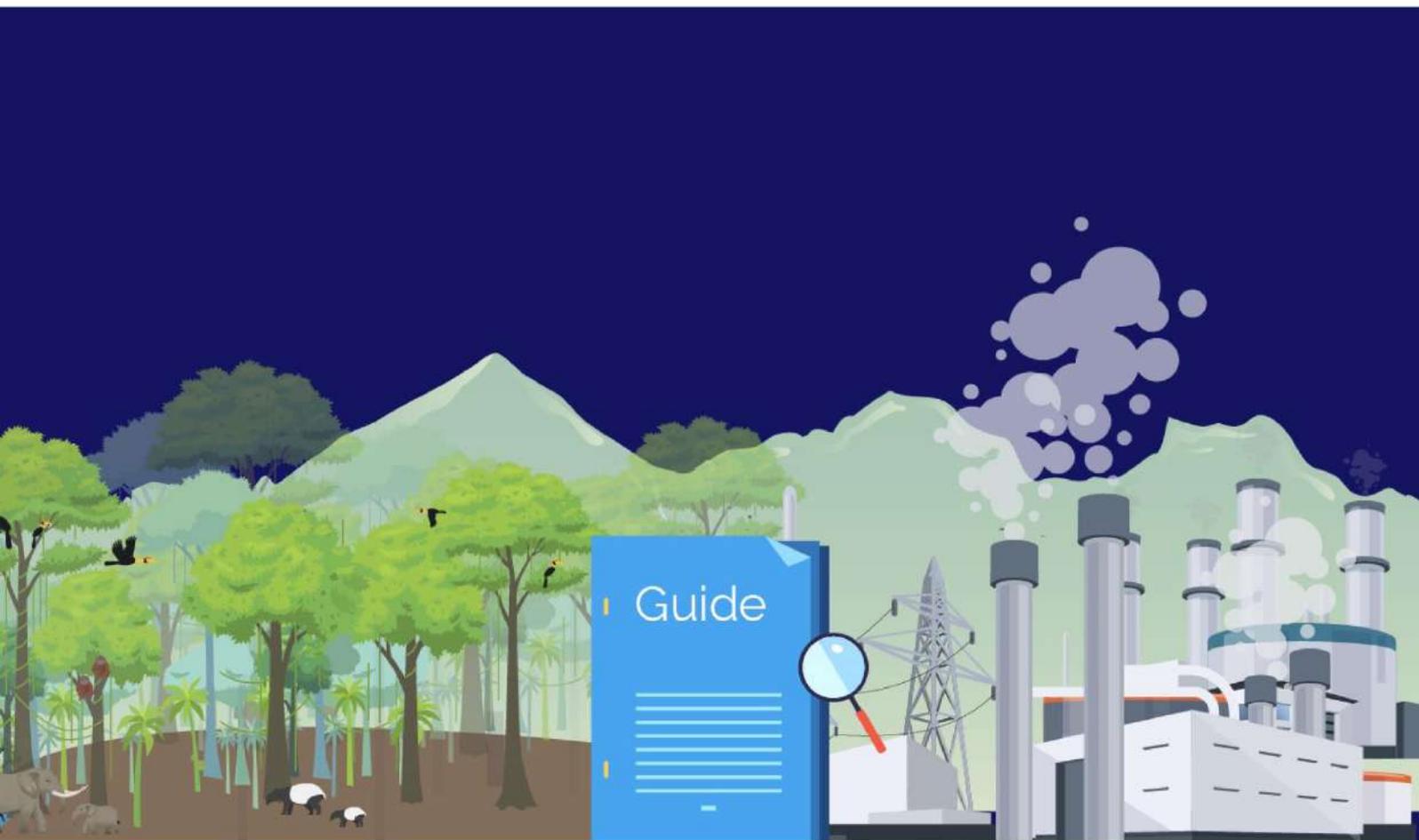
Chapter 3

Guidance on Voluntary Carbon Market Mechanism in Malaysia

3.1 Chapter Summary

3.2 At National Level

3.3 At State Level



Chapter 3: Guidance on Voluntary Carbon Market Mechanism in Malaysia

3.1 Chapter Summary

The Malaysian government recognises the importance of Voluntary Carbon Market (VCM) participation in complementing national efforts to address climate change and meet Malaysia's NDC target. As part of its commitment, Malaysia has developed guidances and frameworks to guide VCM activities.

The National Guidance on Voluntary Carbon Market Mechanisms serves as a reference for project developers, buyers and other stakeholders involved in voluntary carbon projects. This guidance outlines the key principles, requirements and procedures for the development, certification and trading of voluntary carbon credits in Malaysia. They ensure that projects meet international standards and best practices, promoting transparency, credibility and environmental integrity.

In addition to the VCM Guidance, Malaysia has established the National Guidance on Forest Carbon Market as a reference point for domestic parties that want to participate in forest carbon-related activities. The guidance provides information on the role of actors and requirements, such as registration, monitoring, validation and verification, issuance, renewal and reporting, related to forest-based carbon projects.

Having both guidances will enhance the credibility and effectiveness of the VCM and promote the development of high-quality projects that contribute to climate change mitigation, sustainable development and biodiversity conservation. They also facilitate stakeholder participation in Malaysian VCM activities from businesses, communities and individuals.

Apart from this, the forestry sector plays a vital role in socioeconomic growth, climate change mitigation and biodiversity conservation. Under the National REDD Plus Strategy (NRS), NRES has introduced the REDD Plus Finance Framework (RFF) as a sustainable financing mechanism. The RFF has identified two (2) innovative financing mechanisms: the Forest Conservation Certificate (FCC) and the Forest Carbon Offset (FCO). The FCC is a non-market-based approach, while the FCO is a market-based approach that allows the offsetting of carbon emissions from the forest. The agency that is responsible for implementing the RFF is the Malaysia Forest Fund (MFF).

In Malaysia, the federal government has authority over matters specified in the [Federal Constitution](#), including economic planning at the national level. On the other hand, state governments have jurisdiction over matters which include areas such as land administration, agriculture and local government.

With regard to the carbon market, few states have developed policies and regulations related to carbon trading. The aim is to align with federal guidelines and work towards sustainable climate action and emission reduction targets.

Among the states, Sarawak is considered the most advanced in this area and has enforced the law on carbon trading. Sabah is currently in the process of formulating its law, while Pahang is amending its existing enactment to accommodate carbon trading. States like Johor, Terengganu, Kelantan, Wilayah Persekutuan, Negeri

Sembilan, Melaka, and Kedah are actively engaged in capacity building and exploring opportunities in both market and non-market approaches through the RFF.

The information provided in Section 3.2 below is based on interviews and surveys received from the state governments.

3.2 At National Level

3.2.1 National Level Setup and Requirements

The government of Malaysia has published a [National Guidance on Voluntary Carbon Market Mechanisms](#) and a [National Guidance on Forest Carbon Market for Malaysia](#). These are non-legally binding documents intended as references for entities engaging in VCM mechanisms and forestry carbon-related activities.

The National Guidance on Voluntary Market Mechanisms covers emission reductions from the energy (including transport), waste, Industrial Processes and Product Use (IPPU) and Agriculture, Forestry and Other Land Use (AFOLU) sectors. The National Guidance on Forest Carbon Market, on the other hand, identifies the roles and functions of the various actors involved in forest carbon projects in Malaysia.

The National Guidance on Forest Carbon Market complements the National Guidance on Voluntary Carbon Market Mechanisms. Both documents are to enhance coordination, collaboration and effective implementation of carbon projects while ensuring transparency and accountability. Emission reduction efforts from all sectors will be reported in the Biennial Update Report (BUR) and later, from 2024 onwards, in the Biennial Transparency Report (BTR), to be submitted to the United Nations Framework Convention on Climate Change (UNFCCC).

During the inauguration of Bursa Carbon Exchange in December 2022, the Minister of the then NRECC, now known as NRES, highlighted the significance of the Ministry's initiatives to the UNFCCC and national-level endeavours to achieve the country's net zero target. An extract of the Minister's speech is presented in Exhibit 26.

"Malaysia also announced its aspiration to achieve net zero GHG emissions as early as 2050, subject to the outcomes of Malaysia's Long Term Low Emissions Development Strategy or LT-LEDS, which NRECC is tasked to prepare. We furthermore reiterated our commitment to maintain at least 50% of our forest cover as pledged at the Rio Earth Summit in 1992.

We will steadfastly uphold the principles of UNFCCC of equity and common but differentiated responsibilities with respective capabilities or CBDR-RC. As Minister of Natural Resources, Environment and Climate Change, my main priority will be the NDC Roadmap and LT-LEDS which will determine our pathway towards net zero GHG emissions. The findings from the LT-LEDS will assist the Ministries in developing policies and action plans that are aligned to our climate goals. It will also determine the direction of the much-awaited Climate Change Act and other policy instruments needed to advance our climate actions.

Moreover, I firmly believe economic instruments such as carbon pricing is essential in supporting, not only GHG emissions reduction efforts, but also greening the business operations of Malaysian companies and create sustainable investments which will benefit the nation. It will also help companies in fulfilling their ESG commitments."

Note: During the fifth meeting of the National Climate Change Action Council (MTPIN) on 14 June 2024, chaired by Prime Minister Dato' Seri Anwar Ibrahim, the government reaffirmed Malaysia's commitment to achieving net zero greenhouse gas (GHG) emissions by 2050. This target is based on findings from the Nationally Determined Contributions (NDC) Roadmap and the Long-Term Low Emission Development Strategies (LT-LEDS)

3.2.2 Key Institutions and Contacts

The National Steering Committee on Climate Change (NSCCC) serves as a high-level advisory and decision-making body responsible for coordinating and guiding climate change-related efforts at the national level. Meanwhile, the National Steering Committee on REDD Plus (NSC REDD Plus) and the National Technical Committee on REDD Plus (NTC REDD Plus) serve as governing and coordinating bodies responsible for overseeing and guiding REDD Plus initiatives at the national level.

While the implementation of nature-based solutions (NbS) and technology-based solutions (TbS) carbon projects typically require certain level of alignment with existing laws and regulations, the purview of carbon activities fall under NRES as it relates to climate impact, sustainability, and reporting to the UNFCCC. Its responsibilities are detailed in Exhibit 27.

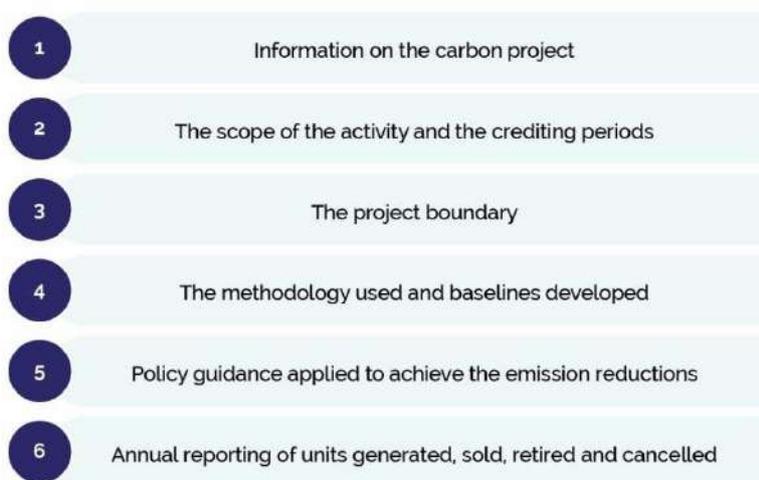
Exhibit 27: Responsibilities of the Ministry of Natural Resources and Environmental Sustainability (NRES).

 <p>Responsibilities of the Ministry in charge of climate change</p>	<p>For All Carbon Projects</p> <ul style="list-style-type: none">a) Secretariat to the National Steering Committee on Climate Change (NSCCC) or any specific committee established under the NSCCCb) Provide guidance on carbon market, and propose mechanism on domestic carbon market as appropriatec) Maintain a registry to track all carbon projectsd) Verify no double counting occurs when reporting of NDC progress and achievemente) Undertake corresponding adjustments consistent with UNFCCC's decisions on Article 6 of the Paris Agreementf) Report to UNFCCC on Malaysia's participation in market mechanisms under the UNFCCC and voluntary carbon marketg) Maintain Malaysia's NDC in accordance with Article 4 paragraph 2 of Paris Agreement and decision 4/CMA.1 under the UNFCCCh) Ensure Malaysia's participation in the voluntary carbon markets contributes to the implementation of Malaysia's NDC and long-term low GHG emission development strategy; andi) Any other requirements agreed under Article 6 of the Paris Agreement.
 <p>Responsibilities of the Ministry in charge of forestry</p>	<p>For Carbon Projects related to Forestry Sector</p> <ul style="list-style-type: none">a) Secretariat to the National Steering Committee on REDD Plus (NSC REDD Plus) and the National Technical Committee on REDD Plus (NTC REDD Plus)b) Provide guidance on forest carbon market as appropriatec) Maintain a registry to track forest carbon projectsd) Undertake corresponding adjustments for REDD Plus reporting; ande) Any other requirements agreed under Article 6 of Paris Agreement

Source: National Guidance on Voluntary Carbon Market Mechanisms and National Guidance on Forest Carbon Market for Malaysia

Project participants that are involved in the development of carbon projects or activities in Malaysia must report the information shown in Exhibit 28 to the ministry responsible for climate change and the NSCCC. For any carbon project related to the forestry sector, the project participants should follow the guidance for reporting to the NSC REDD Plus.

Exhibit 28: Information to be submitted to the ministry responsible for NSCCC and to NSC REDD Plus.

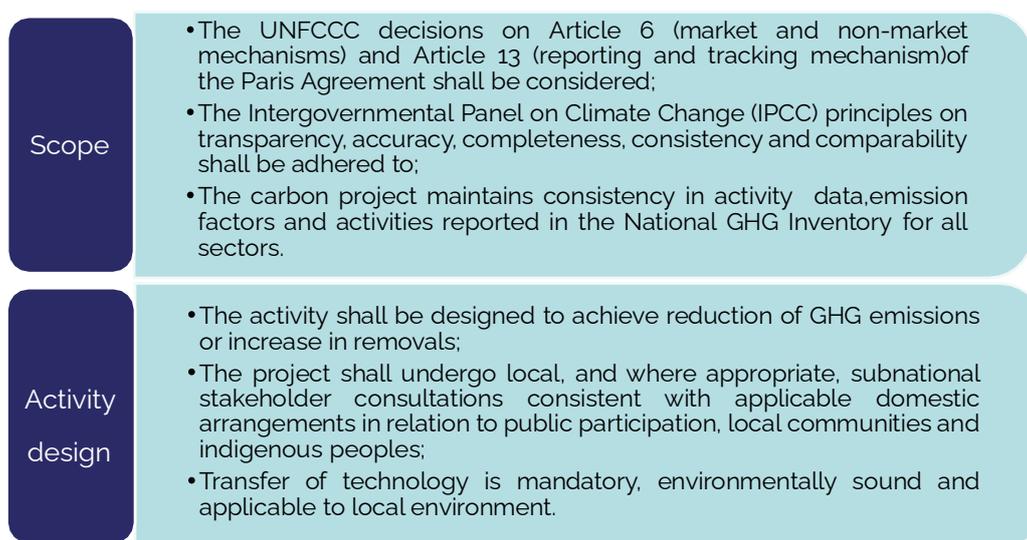


Source: National Guidance on Voluntary Carbon Market Mechanisms and National Guidance on Forest Carbon Market for Malaysia

3.2.3 Technical Requirements for VCM and REDD Plus Carbon Projects

The VCM carbon projects may vary depending on the chosen carbon standard. Exhibit 29 illustrates the defined scope and activity design of any entity involved during its project development.

Exhibit 29: Carbon project scope and activity design.



Source: National Guidance on Voluntary Carbon Market Mechanisms and National Guidance on Forest Carbon Market for Malaysia

Exhibit 30 provides an overview of the principles and criteria that the VCM carbon project activity should adhere to in the guidance.

Exhibit 30: Overview of principles and criteria for carbon project activity.

<p style="text-align: center;">PRINCIPLES</p> <ul style="list-style-type: none">○ Deliver real, measurable and long-term benefits related to climate○ Minimise the risk of reversals and displacements of emission reductions, and where reversals occur, ensure that these are addressed in full○ Avoid negative environmental and social impacts○ Avoid double financing○ Establish a robust accounting system.
<p style="text-align: center;">CRITERIA</p> <ul style="list-style-type: none">○ Set a baseline for the calculation of emission reductions and/or removals to be achieved by the activity○ Demonstrate the additionality of the activity○ Ensure monitoring of emission reductions and/or removals○ Calculate the emission reductions and/or removals achieved by the activity.
<p style="text-align: center;">CARBON ACCOUNTING</p> <ul style="list-style-type: none">○ Data and estimation methodologies used for baseline development and accounting should be consistent with the National GHG Inventories○ National GHG Inventory for LULUCF methodology guidelines shall be used○ The 100-year time-horizon global warming potential (GWP) values from the IPCC Fifth Assessment Report shall be applied○ Consistency in scope and coverage, definitions, data sources, metrics, assumptions and methodological approaches shall be maintained throughout the project implementation○ For forestry projects, the state government shall ensure that there is no double counting.

Source: National Guidance on Voluntary Carbon Market Mechanisms and National Guidance on Forest Carbon Market for Malaysia

3.2.4 Corresponding Adjustment

In both the above national guidance, corresponding adjustments (CAs) are mentioned and this section serves to explain the concept of a CA. A CA means that the "host" country, or the country where the carbon project is located, must first authorise the transfer and then adjust its own GHG inventory to reflect the fact that the emission reduction achieved inside its borders is being credited to another country. The buying country then adjusts its GHG inventory by the [same amount](#). It is a mechanism used to avoid duplication of emission reduction claims and maintain carbon markets' integrity. CAs help to maintain the integrity of carbon markets by ensuring that emission reductions are accurately accounted for and credited only once. This promotes transparency, trust and confidence in the carbon market system.

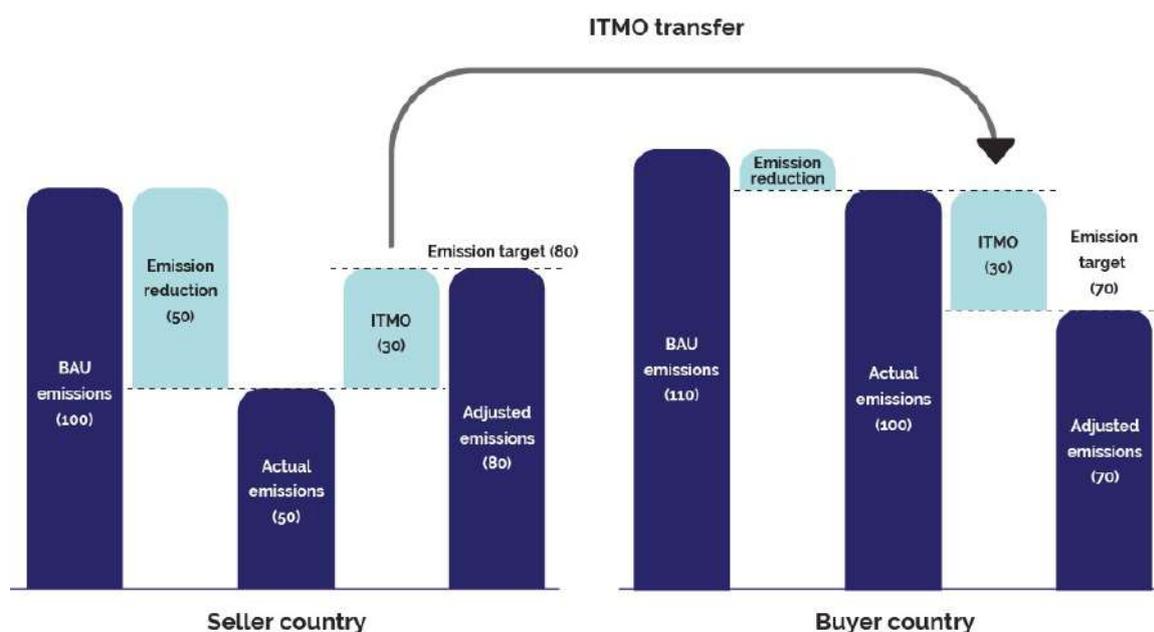
The CAs may vary across different carbon market systems, jurisdictions and international frameworks. Compliance with applicable guidelines and regulations is essential to ensure the accuracy and reliability of carbon credit transactions and emissions accounting.

Article 6 of the Paris Agreement provides a framework for international cooperation in achieving emission reductions and promoting sustainable development. There are two (2) components to note in this regard:

- i. Article 6.2, which focuses on the voluntary cooperation between countries in the form of internationally transferred mitigation outcomes (ITMOs); and
- ii. Article 6.4, which establishes a mechanism to promote mitigation and support sustainable development.

Article 6.2 of the Paris Agreement sets out provisions for engaging in voluntary cooperation, allowing emission reductions or removals to be transferred between countries, in a bilateral exchange of mitigation outcome known as ITMOs, used towards the buyer country's NDCs. When a country transfers ITMOs to another country, a CA is made to avoid double counting, ensuring that the transferring country does not count those emission reductions as part of its targets or commitments. Exhibit 31 visually depicts the transfer of ITMOs between two countries engaged in carbon trading.

Exhibit 31: Overview of transfer of ITMOs between seller and buyer countries, which requires a CA.



Source: https://www.researchgate.net/figure/Avoidance-of-double-claiming-through-corresponding-adjustments_fig2_321057832

ITMOs can also be performed to meet other international mitigation purposes (OIMPs), such as the CORSIA scheme which will be enforced by 2027. However, it should be noted that carbon credits traded between corporates under the VCM will not be obliged to secure authorisation from the national authority to perform corresponding adjustments.

During the launch of BCX, the Minister of NRECC (now NRES) announced the following (see Exhibit 32) in his keynote address, which provides some clarity on carbon trading policies in the country.

Exhibit 32: Announcement on carbon trading by the Minister of NRECC (now known as NRES) on 9 December 2022.

"... under a voluntary carbon market, there is no restriction imposed on the sales of carbon credits generated from projects located in Malaysia to buyers outside of the country.

"... Malaysian carbon credits traded under the Bursa Carbon Exchange shall not be authorised to meet the NDC of other countries or for other international mitigation purposes. This requirement has been incorporated into the BCX Rules.

"... the trading of carbon credits generated from projects in Malaysia through Bursa Carbon Exchange does not require approval from the national authority, which is my Ministry [referring to NRECC, now known as NRES]

"... require that all domestic carbon projects registered in all international carbon credit registries such as Verra, Gold Standard, and others, be reported to the national authority. The information to be reported is stipulated in the National Guidance on Voluntary Market Mechanisms."

~ Speech by the Honourable Nik Nazmi Nik Ahmad, Minister of Natural Resources, Environment and Climate Change (NRECC, now NRES), at the launch of Bursa Carbon Exchange, 9 Dec 2022.

According to the National Guidance on Voluntary Carbon Market Mechanisms and the National Guidance on Forest Carbon Market, there are specific requirements for the application of CAs, as below:

- i. For non-forestry sectors, baselines shall be developed in accordance with the emissions and removals time series reported under the national reports. Baseline development shall correspond with the activity data and the emission factors used in national GHG inventory reporting.
- ii. For forestry sector-related activities, the following shall be applied:
 - a) The activities shall take steps towards adjusting or nesting within an existing National REDD Plus Forest Reference Level (FRL), where possible, aligning their project baselines with the FRL.
 - b) For activities without an FRL, the activity should develop a baseline aligned to the extent possible with the data, parameters and methods at a jurisdictional level.
 - c) The state government and project participants shall explain the approach(es) used in aligning the project baseline with the existing FRL in a transparent manner, including the gases covered.

3.2.5 Registration of Carbon Projects and Reporting to the NSCCC

Upon receiving a positive validation for the carbon project and preparing for registration with the standards registry, the project owner is required to submit the information stated in Exhibit 33 to the secretariat of the NSCCC.

Exhibit 33: Specific details and information on carbon projects to be submitted to NSCCC.

1.	Account name
2.	Serial number of the units issued
3.	Pending account
4.	Holding account
5.	Account for mandatory cancellation
6.	Cancellation amount
7.	Retirement account
8.	Account for mandatory cancellation
9.	Holding account each public or private entity authorised.

Source: National Guidance on Voluntary Carbon Market Mechanisms and National Guidance on Forest Carbon Market for Malaysia

3.2.6 REDD Plus Finance Framework (RFF)

The forestry sector is vital to Malaysia's economy, environment and social development. For their role in wildlife protection, water catchment, climate change mitigation and adaptation, forests must be maintained sustainably, as stated in Exhibit 34.

Exhibit 34: The Role of Forests in Climate Change Mitigation.

"Malaysia has long recognized the importance of balancing economic growth with environmental sustainability. Over the years, we have made strides in adopting green technologies, promoting renewable energy, and advancing policies that align with the global sustainability agenda. As one of the 17 megadiverse countries, we understand that sustainable development is not only an environmental imperative but also a crucial driver of economic resilience and social equity. In the fight against climate change, the importance of forests cannot be overstated, acting as carbon sinks that absorb vast amounts of carbon dioxide. Malaysia has consistently upheld our commitment made during the Earth Summit in Rio de Janeiro, Brazil in 1992, to maintain at least 50 percent of the country's land area under forests and tree cover."

source: YB Minister of Natural Resources and Environmental Sustainability, ASEAN Carbon Forum Opening Speech.

In 2017, the Malaysian government launched the National REDD Plus Strategy (NRS) to provide a framework to conserve its forest sinks and biodiversity, and this serves as a guiding principle for implementing REDD Plus in the country. The NRS builds upon the country's relevant policies and best practices related to forest management systems.

The strategy aims to achieve three (3) primary objectives:

- (i) Increase synergy between the federal government and the state governments in the implementation of policies related to climate change, forests and biodiversity;
- (ii) Measure, report and verify REDD Plus results and as part of efforts to achieve the nation's NDC;
- (iii) Develop an innovative financing mechanism for REDD Plus implementation. The NSC REDD Plus was established to formulate strategies and directions for REDD Plus implementation.

At the same time, the NTC REDD Plus supports the NSC REDD Plus by providing methodological guidance on REDD Plus implementation and formulating national action plans. The implementation of REDD Plus actions in Malaysia will also contribute to its national targets, such as:

- (i) Maintaining 50% forest cover;
- (ii) Achieving the NDC pledge made under the Paris Agreement for the period between 2020 and 2030;
- (iii) Supporting the National Policy on Biological Diversity (2016-2025) and other forest-related policies.

To implement REDD Plus, a sustainable financing mechanism, the REDD Plus Finance Framework (RFF), was introduced. The RFF instrument allows private sectors to participate in conservation and protection activities in Malaysia's forests. There are two (2) components in the RFF:

- a) Forest Conservation Certificate (FCC) – A non-market-based mechanism that will act as an incentive for environmental and social contributions focusing on the conservation and protection of forests and ecosystem services. The FCCs are generated following the REDD Plus requirements agreed under the UNFCCC.
- b) Forest Carbon Offset (FCO) – A carbon market mechanism that allows the transfer of emissions reduction from forests to the buyers, in the form of carbon offsets. Robust accounting will be applied to generate the carbon offsets, considering robust methodologies for GHG estimation, calculation and environmental integrity, and transparent, complete and accurate reporting.

The FCC protocol was officially launched in May 2024 and is currently operational with applications being processed. while the FCO protocol is still under development. The RFF is implemented by the Malaysia Forest Fund (MFF), an agency of NRES.

3.3 At State Level

3.3.1 Introduction

Malaysia follows a federal system of governance, which means power is divided between the federal and state governments. The federal government has authority over matters specified in the [Federal Constitution](#), including economic planning at the

national level. On the other hand, state governments have jurisdiction over matters assigned to them under the State List, which include areas such as land administration, agriculture and local government. State governments have the authority to enact laws on matters within the State List. However, in some cases, both the federal and state governments can legislate on matters in the Concurrent List, such as environmental protection.

The implementation and operation of climate change mitigation projects are governed by different laws and regulations. These legal frameworks provide guidance and requirements for different types of projects aimed at reducing carbon emissions. Carbon projects in Malaysia can be categorised as either technology-based or nature-based, depending on the approach employed to achieve carbon reduction goals. The specific laws and regulations governing these projects ensure compliance, promote sustainable practices and facilitate the overall transition to a low-carbon economy.

The main law governing the activities relevant to the environment, energy and waste is the [Environmental Quality Act 1974](#) which regulates pollution from industrial processes and activities, while the [Renewable Energy Act 2011](#) promotes the development and use of renewable energy sources in the country.⁶ [The Solid Waste and Public Cleansing Management Act 2007](#) provides regulation on the management of solid waste and public cleansing services in Malaysia. It establishes a comprehensive waste management hierarchy that prioritises waste reduction, reuse and recycling over disposal to landfills.

The [National Forestry Act 1984](#) establishes the legal framework for the management, protection and use of forest resources and covers a range of forestry-related activities, including forest conservation, forest exploitation, timber production and forest certification. Additionally, there are policies related to forestry activities in Malaysia, such as the [National Forestry Policy 1978](#) and the [National Forest Stewardship Council Standards](#).

3.3.2 State-Level Regulations

Jurisdiction over forestry activities in Malaysia does not fall under the purview of the federal government. Instead, the management and regulation of forestry activities are primarily handled by the respective state governments. Each state government in Malaysia has authority over the forests and natural resources within its jurisdiction. This decentralised approach allows for localised decision-making and management of forestry resources in accordance with the specific needs and characteristics of each state.

Each state has its own forestry rules for forest management and conservation within its jurisdiction. While specific rules may vary between states, there are some common policies and laws related to forestry in Malaysia, as shown in Exhibit 35.

⁶ Save for the State of Sarawak.

Exhibit 35: Forestry activities policy and law in Malaysia.



Source: Existing forestry-related policy and law in Malaysia

The forestry-related projects pertaining to carbon projects for carbon credit issuance are subject to compliance with state enactments or ordinances. State governments in Malaysia play a crucial role in managing and monitoring carbon reduction activities, particularly those carried out within forests and other natural ecosystems. The state governments have the authority to establish rules, guidelines and requirements related to carbon reduction initiatives within their jurisdiction.

In developing this VCM Handbook, interviews and surveys were carried out with representatives from the state governments to gather insights and information. The interviews and surveys aimed to obtain details related to the specific states and their policies, regulations and services relevant to forestry carbon projects. The following section provides a high-level overview of the existence of policies, requirements and procedures at the state level for carbon project development.

3.3.3 Development of Carbon Projects at State Level

The state information that has been included in this sub-chapter is based on the feedback received during the development of this Handbook through interview sessions and surveys conducted. Based on the information gathered, the states are at various stages of developing carbon-related policies. In several states, committees have been established to develop participation criteria and establish rules and processes for the implementation of carbon projects, with a particular focus on forestry projects.

Johor

Currently, Johor is in the midst of establishing specific policies or regulations on carbon credits or carbon project development. The Johor State Economic Planning Division has begun exploring carbon offset initiatives for the state. The Johor Green Growth Roadmap is in its final stage and includes a focus on the Carbon Offset Strategy Paper. The Carbon Offset Strategy Paper explores different options for implementing carbon offset initiatives in Johor. At the moment, the initiative is spearheaded by the Johor State Economic Planning Division. The aim is to develop a comprehensive plan that outlines the strategies, mechanisms and guidelines for carrying out carbon offset projects in Johor.

Johor has currently imposed a moratorium on forest logging activities. In light of this situation, the state is exploring alternative avenues to generate revenue, including the potential utilisation of carbon credits. The Johor Forestry Department is actively involved in carbon project development and is working closely with the MFF to identify potential areas for carbon projects in the state. The Johor State Economic Planning Division has conducted seminars and workshops with stakeholders to better understand the federal government's requirements, which is a positive step towards effective collaboration and alignment.

Recognising the significance of a robust governance structure, the Johor State Economic Planning Division, with the support of related agencies, is actively engaged in studying and developing appropriate mechanisms. It has acknowledged that data and information related to carbon projects and initiatives need to be submitted to the federal government in a structured and organised manner. An efficient governance framework that ensures the proper management and coordination of carbon-related activities within Johor will be established to ensure the benefits of carbon financing in revenue generation, job creation, sustainable development and attracting investment.

For any inquiries regarding the development of carbon projects in the State of Johor, please refer to the following contact for further details or information:



Kelantan

The Kelantan state government is exploring the necessary steps to promote the development of carbon projects. At present, the state does not have dedicated policies or laws in place for carbon projects. The state government has approved two (2) specific committees to evaluate projects related to carbon trading, namely:

- i) The Committee for the Development of Carbon Credits in Kelantan – Chaired by the Deputy *Menteri Besar* of Kelantan
- ii) The Special Research Team – Chaired by the Deputy State Secretary (Development).

The State Economic Planning Unit of Kelantan (UPEN) serves as the secretariat for both committees, which also include members from relevant technical departments. The ongoing research and review phase will determine the subsequent procedures that will be implemented. It is expected that project-related fees will be aligned with the procedures that will be introduced at a later stage.



Melaka

Melaka is working towards the development of carbon projects, including undertaking efforts to explore policies, laws, regulations and guidelines related to carbon trading. Additionally, the state is actively engaged in the implementation of REDD Plus through the National REDD Plus Strategy. Two (2) key government bodies in Melaka, namely the Melaka State Economic Planning Unit and the Melaka Green Technology Corporation, are involved in climate change programmes and projects within the state. These entities are responsible for driving the development and implementation of related carbon projects. The state government intends to establish carbon credit requirements that align with the VCM to enable its participation in this market.



Negeri Sembilan

Negeri Sembilan has included carbon projects as one of the targets in *Rancangan Pembangunan (Development Plan) Negeri Sembilan 2021-2025* and *Pelan Strategik (Strategic Plan) SUKNS 2021-2025*. Recognising the immense value of carbon projects and their potential benefits, the state is actively working on developing the requirements to support their implementation. Currently, Negeri Sembilan is yet to have any specific policies and laws related to carbon trading within the state. The State Economic Planning Unit of Negeri Sembilan plays a crucial role as the state authority responsible for driving the development, issuance and implementation of carbon credit project requirements.

The Economic Planning Division of Negeri Sembilan aims to learn from successful carbon projects implemented in other states and leverage that knowledge to develop effective policies and regulations tailored to the state's specific context. This approach ensures that Negeri Sembilan can benefit from the experiences and best practices of other regions in advancing their carbon projects.



Pahang

The Pahang state government is currently in the process of exploring the potential of carbon projects in the state. As part of this effort, it is considering the development of its policies, laws and guidelines for carbon trading. The Pahang state government intends to align its carbon trading policy with the direction set by the federal government. This alignment ensures consistency and coordination between the state and federal levels in addressing climate change and promoting sustainable development through carbon trading initiatives.

The state government bodies and agencies in Pahang have various roles and responsibilities in governing and managing the affairs of the state. The key state government bodies and agencies in Pahang and their relevant roles and responsibilities in carbon project development include:

- i. Pahang State Economic Planning Unit
 - a. Is responsible for formulating and implementing state policies and programmes; and
 - b. Acts as a central coordinating body, facilitating collaboration and coordination among various government agencies, departments and stakeholders involved in the carbon project development process.
 - c. *Pejabat Pengarah Tanah dan Galian Pahang* (Pahang Land and Mines

Perlis

The Perlis state government is exploring the potential for the development of carbon projects within the state. The state government is awaiting clear policies and guidelines to be established by the federal government for the implementation of carbon trading at the state level. By aligning with federal policies, Perlis aims to ensure a coordinated and consistent approach to carbon project development within its jurisdiction.



Pulau Pinang

As of now, Penang state has not implemented any specific rules or procedures that project developers or proponents must adhere to if they intend to undertake carbon credit project development within the state. Presently, the state is collaborating with the ICLEI – Local Governments for Sustainability South Asia and the IMT-GT Joint Business Council Malaysia to create Green City Action Plans (GCAPs) as a roadmap for fostering sustainable and resilient cities. Data collection is underway to develop a comprehensive city profile and assessment, which will be instrumental in preparing the GHG Emissions Inventory and conducting the Climate Risk and Vulnerability Assessment (CRVA).

The State Economic Planning Division (BPEN) and Local Government Division (BKT) are the primary agencies/authorities responsible for leading the development of the pertinent carbon credit project-related requirements in Penang state.



Sabah

On 1 January 2019, the Forest Enactment, 1968 came into force, which recognises REDD Plus activities and carbon stock through sustainable activities as part of forest produce.⁷ Any proposed REDD Plus initiatives and projects in Sabah involving forest produce in any forest reserve, state land or alienated land, whether for the regulated or voluntary market, shall obtain written approval from the Minister, subject to further terms and conditions. This is as per the Sabah Forest Enactment, 1968 under "Part IIIA Forest Management and Development on 28C: Reduce Emissions from Deforestation and Forest Degradation-plus (REDD+)".

Currently, Sabah has no official specific policy on carbon study or carbon trading, although the state amended its Rules under the National Forestry Act to include carbon stock as forest produce in 2019. At the moment, the carbon laws and policies are still being updated and awaiting the Sabah Cabinet's approval and hence, any processes or procedures (including applicable fees to be paid to the government) that must be complied with by any project developer/proponent wishing to undertake carbon project development within Sabah are yet to be finalised at the time of the preparation of this Handbook.

The Sabah Climate Change Action Council (SCAC) was formed and officially endorsed by the State Cabinet on 17 March 2022 to assist the state government in setting the direction and coordinating climate change mitigation and adaptation projects in Sabah. The SCAC Main Committee is chaired by the State Secretary. Membership includes the state Attorney General, Permanent Secretaries and other relevant state agencies that could contribute to advancing the climate change agenda in Sabah. The Sabah Forestry Department is the Interim Secretariat of the Council.⁸

The role of the SCAC includes:⁹

- i. The state's focal point for the implementation of the climate change agenda at the state level;
- ii. To make policy decisions with regard to climate change mitigation and adaptation programmes and green technology;
- iii. To decide on the fair share of the state's contribution to Malaysia's NDC;
- iv. To ensure the state's commitment to compliance with climate change-related agreements (national, regional and international);
- v. To monitor, assess and discuss plans and actions related to climate change; and
- vi. To deliberate on forest carbon project proposals.

The Council is under the purview of the [Sabah Forestry Department](#) and the following

⁷ "forest produce" means:

- (a) timber, converted timber, wood chip, saw dust, oil, carving, firewood, charcoal, *getah*, *gaharu*, wood oil, bark, extracts of bark, copal, damar and *atap* found in or brought from a forest reserve, state land or alienated land;
- (b) the following when found in or brought from a forest reserve or state land:
 - (i) trees and any produce thereof, silk, cocoons, honey and wax; or
 - (ii) carbon stored in trees or plants;
- (c) all vegetable and animal matter and products other than animals and animal products which are subject to the provisions of the Wildlife Conservation Enactment 1997 [Enactment No. 6/1997], and all minerals and mineral substances other than mineral oil and minerals and mineral substances which are subject to the provisions of the Mining Ordinance 1960 [Ordinance No. 20/1960] found in or brought from a forest reserve or state land;
- (d) imported timber.

⁸ Sabah Forestry Department Annual Report 2022.

⁹ Approved Cabinet Paper on SCAC establishment.

sectors, Energy, Waste, IPPU, AFOLU-Agriculture and AFOLU-LULUCF, are under the supervision of the SCAC. Any forest-based carbon-related project proposals will be evaluated by the Technical Working Group on AFOLU-LULUCF of the SCAC, with the following terms of reference:

- i. To evaluate and recommend proposals to develop forest carbon-based projects in Sabah for SCAC decision;
- ii. To provide advisory services to the state government on issues related to forest-based carbon within and outside the state; and
- iii. To assist in the development of a long-term policy for forest carbon projects in Sabah.

The said Council is in the midst of sorting out the existing laws, land ordinances and enactments to include a legal framework on carbon exchange-related matters in the existing legislation. The revised legislation is currently awaiting approval from the Sabah Cabinet.

At the moment, there are no specific legal regulations on imposing royalties and levies for carbon-related projects. However, there are plans in the future to impose fees and royalties once the carbon laws and policies are finalised.

Any project proponent who wishes to initiate a carbon project, including feasibility studies, shall apply for approval from the SCAC prior to starting any study or work. Permit applications are not required at the moment as there is no legislation regarding the mandatory applications for permits. However, all approvals are subject to the Council's decision. Besides that, all projects must be certified as "carbon compliant", i.e. projects involved in GHG emission reductions or removals that are real, measurable, additional, permanent, independently verified, conservatively estimated, uniquely numbered and transparently listed by the carbon registries, e.g. Verra, Gold Standard and so on.

The primary agency or authority responsible for driving the development and issuance of any carbon-project-related requirements is the Chief Minister's Department. Together with the Sabah Forestry Department, it forms the implementing authority for carbon project-related requirements.

In terms of future planning, Yayasan Sabah is most likely to be the lead entity to handle and manage any carbon exchange-related matters.



Contact Info for State of Sabah
Sabah Forestry Department
Designation: Chief Conservator of Forests
Email: htan@sabah.gov.my
Tel No.: 089-242 500

Sarawak

Sarawak has amended the rules to enact legislation on permitting carbon storage and nature-based venture businesses, which demonstrates the Sarawak government's efforts to be at the forefront of climate change mitigation.

Sarawak amended The Land Code, 2015 in 2022, and these Rules are cited as The Land Code, Cap.81 (1958 Edition) made on the Land Code, Cap.81 (1958 Edition) and the Forests Ordinance, 2015, to make provisions to regulate carbon storage and forest carbon activities. In addition, the Environment (Reduction of Greenhouse Gases Emission) Bill, 2023 was tabled and approved by the Sarawak Legislative Assembly on 20 November 2023. The bill is intended for reducing greenhouse gas emissions, promoting carbon capture and storage, addressing the effects of climate change and opening up opportunities for Sarawakians to participate in global warming mitigation projects and earn carbon credits.¹⁰

The amendment of the Land Code and Forests Ordinance shall generate revenue for Sarawak and also develop further local capabilities.

Land (Carbon Storage) Rules, 2022

Sarawak amended The Land Code, 2015 and these Rules are cited as [Land \(Carbon Storage\) Rules, 2022](#) (gazetted under Swk L. N. 349/2022) and came into force on 1 January 2023. These Rules shall apply to:

- a) The use of land for the development of storage sites for scheduled gases in any part of Sarawak, whether on onshore land or offshore land, by any petroleum operator or any person undertaking any industrial activity whether or not required by any written law, industrial best practices and international treaties ratified by Malaysia, to capture and store scheduled gases as measures to reduce the emission of such gases to mitigate the effects of global climate change; and
- b) Any storage user including any person or entity who is not resident in Sarawak, who desires to use any storage site for the storage of scheduled gases whether or not such gases were captured within or outside Sarawak.

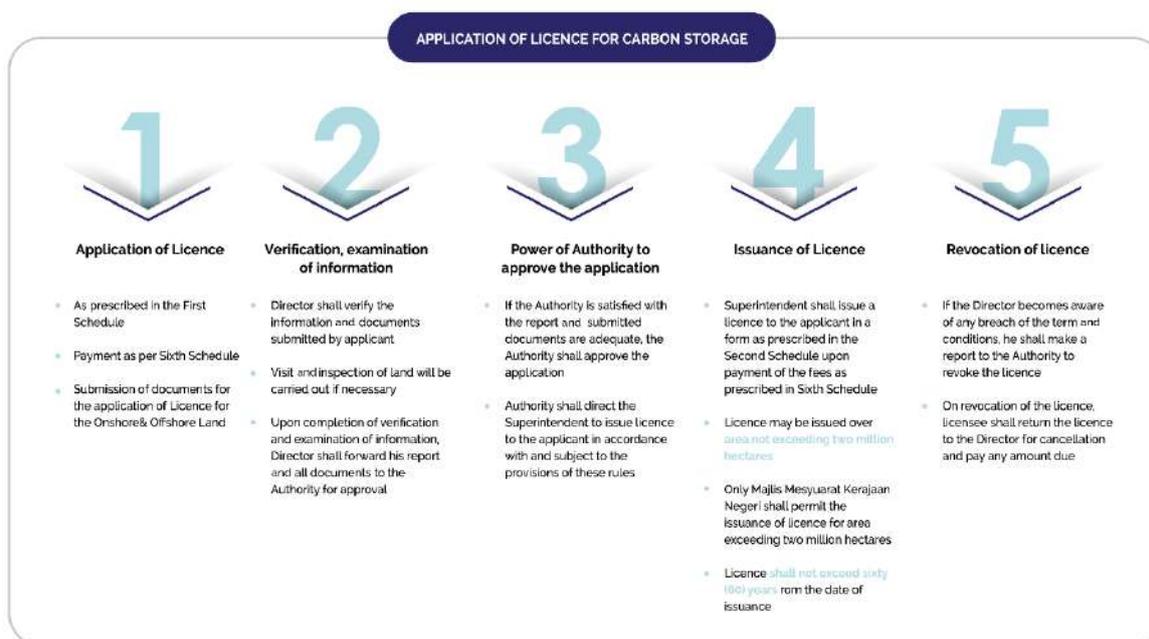
Sarawak is the first state in Malaysia to have legislation to enable industries, including oil and gas industries operating in Sarawak, to comply with international requirements to reduce carbon emissions intensity under the UNFCCC.

Under the Land (Carbon Storage) Rules, 2022, the Sarawak government shall be entitled to possess any abandoned petroleum sites within Sarawak. Any petroleum operator shall submit a written decommissioning plan of the abandoned petroleum site to the Director for approval by the Authority. All costs and expenses incurred in the decommissioning of the abandoned petroleum site shall be borne by the petroleum operator.

The procedure to apply for a Carbon Storage Licence is presented in Exhibit 36.

¹⁰ Details of the Environment Ordinance 2023 will be included in the next version update once the document is made public.

Exhibit 36: Procedure to apply for a Carbon Storage Licence in Sarawak.



Source: Illustration based on "Part III from Land (Carbon Storage) Rules, 2022"

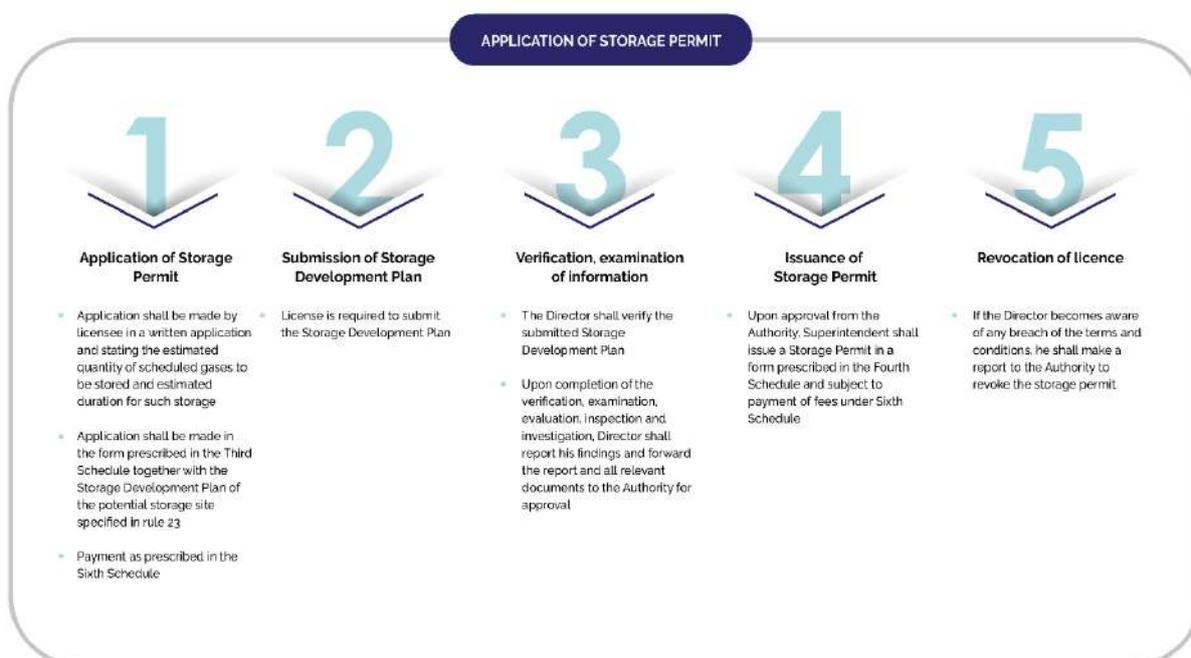
- To apply for the Carbon Storage Licence** – The documents to be submitted for the application for the licence for onshore and offshore carbon storage are as outlined in the Land (Carbon Storage) Rules, 2022.
- Verification and examination of information** – All applications and documents submitted shall be verified by the Director¹¹ of the Land and Survey Department and additional information shall be requested if deemed necessary. The Director shall make a report of his findings on the licence application. The report and application will then be forwarded to the Authority, i.e. the State Planning Authority established under section 228 of the Land Code [Cap.81 (1958 Ed.)] for approval.
- Power of Authority to approve an application for a licence** – If the Authority is satisfied with the application, the Authority shall approve the application and direct the issuance of the licence to the applicant in accordance with the provisions of these Rules.
- Issuance of licence** – The licence may be issued over an area not exceeding two (2) million hectares and the licence issued shall not exceed 60 years from the date of the issuance. If an extension is required, the applicant shall submit a written extension at least 12 months before the date of expiry of the licence and stating the grounds for extension. The payment of the licence fees is as prescribed in the Sixth Schedule.

In terms of a Storage Permit, none shall be permitted to use any land for the storage of scheduled gases unless the applicant is issued with a permit from the Superintendent of the Land & Survey Department for carbon storage.

¹¹ As per the First Schedule, Application Form for Licence for Carbon Storage.

The procedure for applying for a Storage Permit is as follows (see Exhibit 37).

Exhibit 37: Procedure to apply for a Carbon Storage Permit in Sarawak.



Source: Illustration based on "Part IV from Land (Carbon Storage) Rules, 2022"

1. **Application for Storage Permit** – A written application shall be submitted by the licensee who intends to be a storage user within the licensed area to the Director and specify the estimated quantity of scheduled gases to be stored and the estimated duration of the storage.
2. **Submission of Storage Development Plan** – The licensee is required to submit the Storage Development Plan of the potential storage site for the Storage Permit application. The outline of the Storage Development Plan is included in the Land (Carbon Storage) Rules, 2022.
3. **Verification and examination of information** – The Director shall verify the documents and inspect and investigate the proposed storage site, if necessary, prior to submitting all the documents to the Authority for approval.
4. **Issuance of Storage Permit** – The Superintendent shall issue the Storage Permit in a form prescribed in the Fourth Schedule and subject to the payment of fees and charges specified under the Sixth Schedule. The contents of the Storage Permit shall contain the terms as stated in the Land (Carbon Storage) Rules, 2022.
5. **Revocation of Storage Permit** – Any leakages or significant irregularities in the storage operations or breach of the terms and conditions shall lead to the revocation of the Storage Permit.

A licensee and storage user shall pay all fees, levies, dues, rents, cess and other payments for the use and occupation of the land for exploration and development of the storage site as stipulated in the Sixth Schedule.

The relevant costs of the permit application and licence are tabulated in Exhibit 38.

Exhibit 38: Sixth Schedule: Fees, levies and other payments (Rule 44).

No.	Item	Fee Applicable
1.	Application for Licence	RM50,000.00 per application
2.	Licence Fee	RM1.00 per hectare/per year
3.	Application for Permit	RM50,000.00 per application
4.	Permit Fee	RM25.00 per m ³ metric tonne/per year
5.	Levy in Carbon Storage Charges	An amount to be determined by the Authority
6.	Cess	An amount to be determined by the Authority
7.	Preparation and Registration of Issuance of Licence	RM300.00 per licence
8.	Preparation and Registration of Issuance of Permit	RM300.00 per permit
9.	Registration and Issuance of Certificate of Storage Operator	RM1,000.00 per certificate

Source: Sixth Schedule of the Land (Carbon Storage) Rules, 2022

Carbon Credit Plan

A licensee shall give written notice to the Director and seek approval from the Authority in the event the licensee plans to seek validation of the scheme for the capture and storage of scheduled gases in the storage site on state land to secure certification for the issuance of carbon credits. For any licensee who receives any revenue from the trade of carbon credits, the government, through the Authority, shall be entitled to a percentage of the revenue in kind or in cash.



Contact Info for State of Sarawak

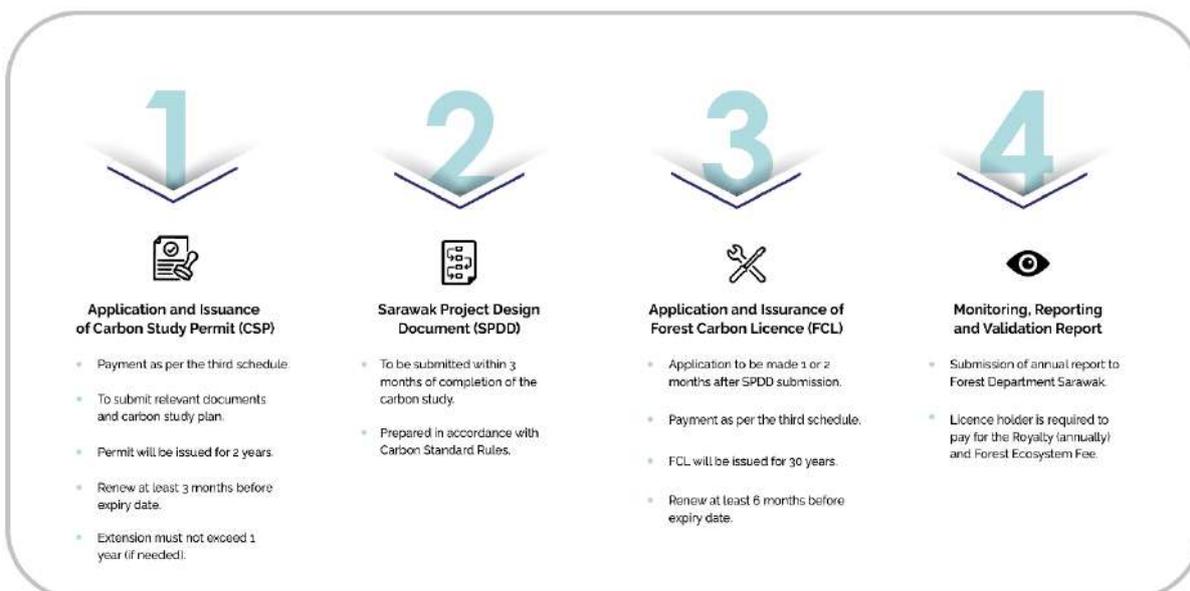
Land and Survey Department Sarawak
 Designation: Director
 Email: landsurvey@sarawak.gov.my
 Tel No.: 082-444 111

Forests (Forest Carbon Activity) Rules, 2022

The Rules are cited as the Forests (Forest Carbon Activity) Rules, 2022, gazetted under Swk L.N. 350/2022, and came into force on 1 January 2023. The Rules highlight the regulation of forest carbon activities, including afforestation and reforestation.

The procedure to develop a carbon project in Sarawak is presented in Exhibit 39.

Exhibit 39: Procedure to develop a carbon project in Sarawak.



Source: Illustration based on "Forests (Forest Carbon Activity) Rules, 2022"

- 1. Application for Carbon Study Permit** – Any project proponent who wishes to conduct a forest carbon activity in the forest carbon area, including a feasibility study, is required to apply for a Carbon Study Permit from the Director of the Forest Department. The permit will be issued upon payment of the necessary fees and charges as per the Third Schedule of the Rules (see Exhibit 40). The permit will be issued for two (2) years. For permit application purposes, the documents to be submitted are as follows:
 - Certified true copies of documents relating to the applicant's profile, including its incorporation, shareholders and their respective shareholdings, directors and latest annual returns;
 - Audited financial statements for the last three (3) consecutive financial years and the latest management accounts, and where the applicant is a subsidiary, such audited financial statements and management accounts of the holding company;
 - A precise description of the land on which the carbon study is intended to be carried out and the land status, and if the study to be carried out is on an alienated land of which the applicant is not the registered proprietor, the application shall be accompanied by a letter from the registered proprietor thereof, giving his consent to the use of the land for

carbon study.

2. Submission of Carbon Study Plan – A Carbon Study Plan should be submitted together during the application for the Carbon Study Permit. The outline for the Carbon Study Plan is listed below:

- i. Description of procedures and methodologies to be used; and
- ii. Information on the proposed forest carbon activity, including:
 - a) A description of the proposed scope of the intended activities and the crediting periods;
 - b) A map illustrating the boundaries of the proposed forest carbon area;
 - c) A description of the methodology to be used for quantifying the emission reductions to be generated by the proposed forest carbon activity and any scheme that could constitute additionality;
 - d) Where rights and interests of native communities may be affected by the carbon project, the methodology or measures, including benefit-sharing, to be adopted to secure their consent and support; and
- iii. A description of the local stakeholder consultation to be undertaken in accordance with the applicable laws, including the procedures or methods to be used for engaging with local stakeholders, the methods for documenting such consultation and the mechanisms for ongoing communications with local stakeholders; and
- iv. Such other information as may be relevant to the carbon study.

The detailed outline of the Carbon Study Plan is included in the Land (Carbon Storage) Rules, 2022.

3. Submission of Sarawak Project Design Document (SPDD) – During the Carbon Study Permit issuance period, applicants must submit the SPDD before being granted the Carbon Licence. The requirements for the SPDD are listed below:

- Detailed description of the proposed forest carbon activity;
- Description of the baseline scenario within the carbon study;
- Description of how the proposed forest carbon activity will satisfy the requirement of additionality;
- Outcomes from the local stakeholder consultations undertaken during the carbon study;
- Estimation of the expected emission reduction to be achieved; and
- Any other information as may be required by the applicable Carbon Standard Rules as part of the validation process.

The detailed outline of the SPDD is included in the Land (Carbon Storage) Rules, 2022. The SPDD should be submitted within three (3) months of the completion of the carbon study (Rule 11) and when applying for a Carbon Licence (Rule 13).

4. Application for a Carbon Licence - The licence will be issued upon payment of the necessary fees and charges as per the Third Schedule of the Ordinance (see Exhibit 40). The applicant must obtain a licence before undertaking any forest carbon activity. For licence application purposes, the documents to be submitted are as follows:

- Completed SPDD in accordance with Rule 11 following a Carbon Study Plan, together with all reports, analyses, maps, plans, data and other information obtained and prepared during the Carbon Study Plan;
- Audited financial statements for the last three (3) consecutive financial years and the latest management accounts, and where the applicant is a subsidiary, such audited financial statements and management accounts of the holding company;
- If the study to be carried out is on an alienated land of which the applicant is not the registered proprietor, the application shall be accompanied by a letter from the registered proprietor thereof, giving consent to the use of the land for carbon study;
- Where the applicant intends to undertake the carbon project jointly with another person or entity, the name of that person or entity, particulars of the shareholders and directors thereof and the respective roles of the applicant and the other person or entity in carrying out the forest carbon activity for the carbon project;
- Such other information, data and documents as may be necessary in support of the application; and
- The payment of a processing fee as prescribed in the Third Schedule.

5. Submission of Monitoring, Reporting and Validation Report – The licence holder is required to submit the Monitoring, Reporting and Validation Report annually to Forest Department Sarawak. The contents of the Monitoring, Reporting and Validation Report are listed as follows:

- Information on the forest carbon activity;
- The scope of activity and the crediting periods;
- The boundary of the forest carbon area;
- The methodology used and baseline developed;
- The measures that have been and will be taken and applied to achieve the carbon emission reduction;
- Annual reporting of the carbon credit units generated by the forest carbon activity and annual reporting of the carbon credit units sold, traded, retired and cancelled; and
- The methodology, including benefit-sharing with the native communities from the forest carbon activity.

The activities will be verified in accordance with the Verified Carbon Standard (VCS) by Verra or other recognised global institutions for the issuance of tradeable verified carbon units (VCUs). These rules also authorise the state government to collect royalties, premia, levies or taxes for or in connection with a forest carbon activity.

The relevant costs of the permit application and licence are tabulated in Exhibit 40.

Exhibit 40: Third Schedule: Rate of fees (Rule 3).

1. Carbon Study Permit (CSP)

Type of Carbon Study Permit	Area of Carbon Study Permit (Hectare)	Fees (RM)		
		Issuance	Extension	Processing (Issuance and Extension)
CSP-01	>50,000	5,000	1,000	1,000
CSP-02	3,000	800	800	3,000
CSP-03	100-2,499	300	100	100

2. Carbon Licence (FCL)

Type of Carbon Licence	Area of Carbon Study Permit (Hectare)	Fees (RM)		
		Issuance / Renewal	Extension	Processing (Issuance and Extension)
FCL-01	>50,000	12,000	1,000	1,000
FCL-02	2,500-49,999	8,000	800	800
FCL-03	100-2,499	700	100	100

3. Other Costs

No.	Items and Services	Fees Payable (RM)
1.	Inspection of Sarawak Forest Carbon Registry	100.00
2.	Reproduction of Sarawak Forest Carbon Registry	5.00 per page
3.	Inspection of Licence Register	50.00 per page
4.	Reproduction of Licence Register	5.00 per page

Renewal and processing fees for a Carbon Licence must be paid annually, according to the type of Carbon Licence issued (e.g. FCL-1, FCL-2 or FCL-3).

The licence holder shall pay the government the annual royalty for the carbon stock contained in the forest carbon area as per the Fourth Schedule of the Ordinance (see Exhibit 41).

1. Royalty and Forest Ecosystem Fee

Item	Particulars	Rates (RM)
1.	Royalty (RM/ha/year)	260.00
2.	Forest Ecosystem Fee	Five per centum (5%) of annual revenue earned through Verified Carbon Units (VCUs) traded

In terms of the carbon trading credit units, the Director shall determine the total number of credit units generated by the forest carbon activity that is tradable, after the deduction of a carbon buffer with a sum not exceeding 50 per centum of Sarawak-LULUCF (Removal) meant for domestic GHG mitigation, which shall be specified in the terms and conditions of the Carbon Licence.



Contact Info for State of Sarawak

Forest Department Sarawak Headquarters

Designation: Director

Email: webmaster@forestry.sarawak.gov.my

Tel No.: 082-495 111

Selangor

Currently, Selangor does not have any specific policies or regulations related to carbon project development. However, the state government is planning to establish a comprehensive low- carbon city policy and initiatives to achieve a net zero carbon target by 2050. This signifies the state's commitment to addressing climate change and transitioning to a more sustainable future.

To facilitate carbon credit transactions at the state level, the Selangor state government is prepared to utilise the national carbon trading platform, Bursa Carbon Exchange. By leveraging this platform, the state aims to create opportunities for carbon credit trading within its jurisdiction. Additionally, Selangor is open to collaboration with NRES to tap into the carbon market.

In terms of driving the development of carbon projects, several key agencies and authorities are involved:

- i. The State Government of Selangor, particularly through its Economic Planning Unit, takes a leading role in formulating policies and strategies for carbon project development. The Selangor State Economic Planning Unit is the implementing authority for carbon project-related requirements.
- ii. Local authorities also play a significant role in implementing and regulating carbon projects within their respective jurisdictions.

- iii. Subsidiary companies of the State of Selangor may be involved in supporting and facilitating carbon project initiatives.



Terengganu

Terengganu has yet to have a dedicated policy or legislation specifically governing carbon activities within the state. However, the state is exploring the potential of carbon projects, with a particular focus on forestry activities.

The State Government of Terengganu has established the Green Financing Task Force Terengganu since 2019. The task force, which is chaired by the Director of the Terengganu State Economic Planning Unit, is the official platform to discuss the potential of initiating carbon projects in Terengganu. The members of this task force are as follows:

- i. Director, State Economic Planning Unit (Chairman)
- ii. State Legal Advisor
- iii. State Finance
- iv. PTD Director
- v. Forestry Department
- vi. Department of Wildlife Protection and National Parks
- vii. Terengganu Water Resources Board
- viii. University of Malaysia Terengganu (UMT)
- ix. Sultan Zainal Abidin University (UniSZA)
- x. Terengganu Incorporated (a government-linked company).

Numerous seminars, workshops and training sessions have been conducted since its establishment, facilitating knowledge sharing and capacity building. Also, various research findings have been released, exemplified by the following:

- i. Estimating above-ground biomass trends in Terengganu
 - a. Results/data available from 1990 to 2050 scenarios; and
 - b. Remote sensing data from research carried out around Terengganu.
- ii. Enhancing carbon finance governance
 - a. Governance involves preparing the legal and finance frameworks. These frameworks provide the necessary guidelines and requirements to determine the additionality of carbon projects.
 - b. The Finance Framework in Terengganu is based on the current standards set by organisations such as Verra and Gold Standard. However, certain standards like ART TREES may not be feasible in Terengganu due to the large land area requirement of 2.5 million hectares as specified by the standard.

- c. Terengganu emphasises voluntary carbon-based projects that carry the Climate Community Biodiversity (CCB) label. The state, with its diverse biodiversity, including tigers, elephants and bears, recognises the importance of incorporating climate and community considerations into carbon projects to ensure environmental sustainability and conservation, as well as social inclusiveness.
- iii. **Forestry-Based Voluntary Carbon Offsets Project**
At present, there is no dedicated regulatory body at the state level overseeing carbon trading in Terengganu. The Terengganu State Economic Planning Unit is taking steps to adopt the latest National Forest Act that has been approved by Parliament. Additionally, it is planning to amend the existing enactment to facilitate the implementation of projects involving nature-based solutions.
- iv. **Business Plan – Pilot Project**
Terengganu is currently planning to develop various projects, but the state government is not inclined to lease the land for these initiatives. There is a strong commitment to preserving the existing status of the forests, particularly permanent forest reserves (*Hutan simpan kekal*). It is worth noting that Terengganu has achieved high rankings in the MyEPI (Environmental Performance Index) of NRES, highlighting its environmental performance and sustainability efforts.

A potential pilot project situated within the [Kenyir State Park](#), covering an area of 30,000 hectares, has been identified. A pre-feasibility study has been carried out for this project, and it has been determined to be eligible for the VCS.

In addition to the efforts of the Terengganu State Economic Planning Unit, the MFF has conducted profiling activities in Terengganu to identify potential areas for carbon projects. The MFF has assessed various regions in Terengganu to determine their suitability for carbon project development.

The Terengganu State Economic Planning Unit, as the state authority, assumes responsibility for spearheading the development and implementation of relevant regulations and guidelines pertaining to carbon project development. Decisions regarding carbon projects in Terengganu will be presented to the State Executive Council (*Majlis Mesyuarat Kerajaan Negeri Terengganu*) for consideration and decision-making. It is responsible for reviewing and approving various matters, including those related to carbon projects, to ensure alignment with the state's development objectives and priorities.

The Terengganu State Economic Planning Unit has indicated that certain fees or charges may be applicable to carbon project development, including but not limited to the following:

- i. Land use (*Permit Penggunaan Hutan* / Land Use Permit);
- ii. Project cost (Upfront Payment); and
- iii. All related costs of the projects.



Contact Info for State of Terengganu

Terengganu State Economic Planning Unit
Designation: Assistant Director

Email: upentr@terengganu.gov.my
No.: 09-623 1957

Chapter 4

Type of Eligible Projects

4.1 Chapter Summary

4.2 Verra and Gold Standard Sectoral Scopes

4.3 Example of Applicable Projects in Malaysia

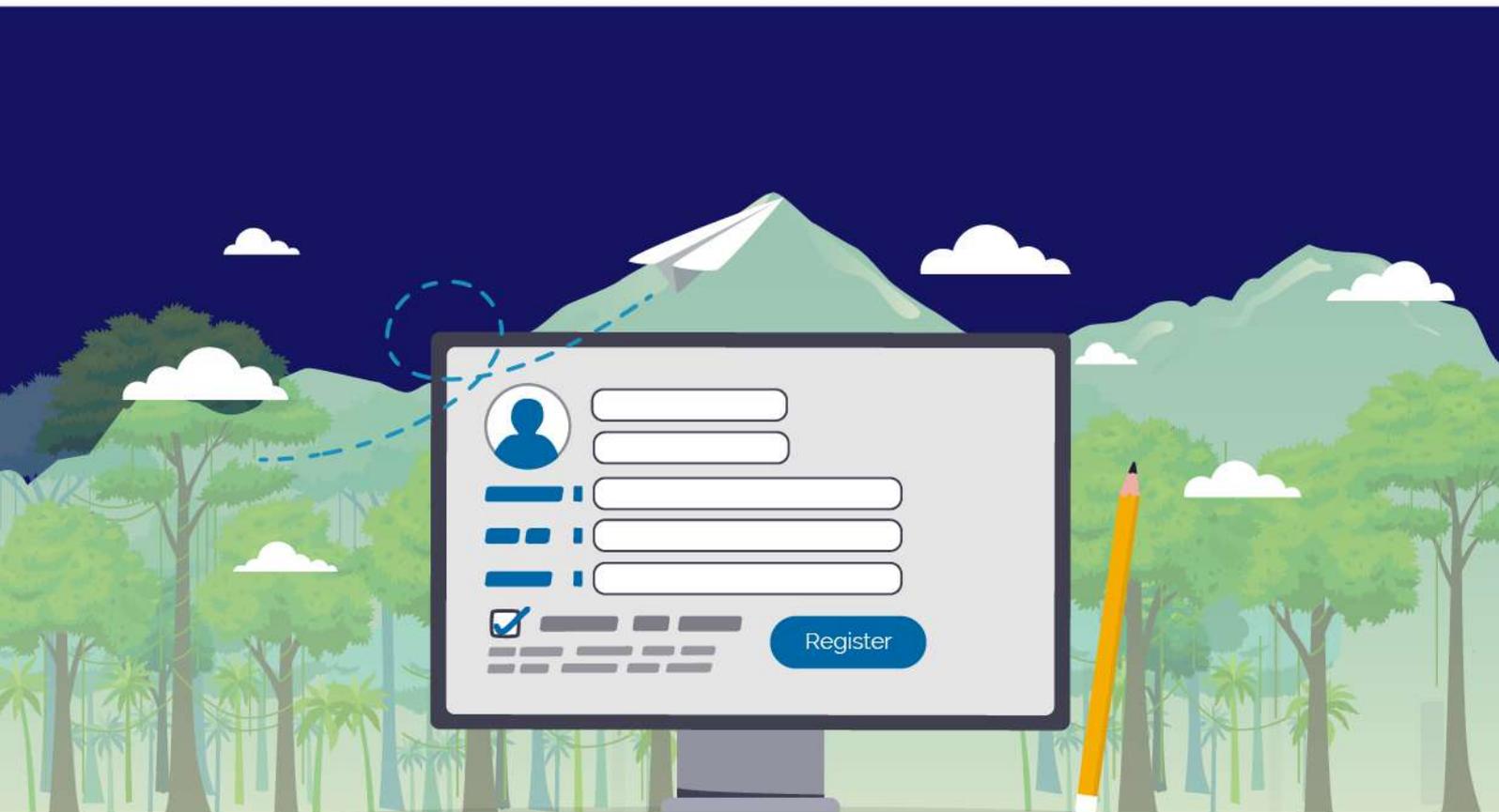
4.4 Positive Lists of Technology

4.5 Excluded Projects

4.6 Methodologies Applicable for Eligible Projects

4.7 Double Counting

4.8 Other Requirements



Chapter 4: Types of Eligible Projects

4.1 Chapter Summary

In Malaysia, the Verra Verified Carbon Standard (VCS) and Gold Standard for the Global Goals (GS4GG) are the leading independent carbon standards, providing project proponents (project developers) with the confidence to pursue ambitious goals like net-zero emissions and other GHG reduction targets. Project proponents are allowed to develop any carbon project as long as there is an applicable methodology to their projects whereby all the applicability conditions and eligibility criteria are met. However, if there is no applicable methodology, the project proponent can choose to develop a new methodology as described in [Chapter 6 of this VCM Handbook](#).

Chapter 4 outlines the types of eligible projects categorised by sectoral scopes within VCS and GS4GG (referred to as GS from here forth) that will be considered and allowed to be traded in Bursa Carbon Exchange (BCX), which are either nature-based solutions (NbS) or technology-based solutions (TbS).

Examples of TbS projects include methane capture from palm oil mill effluent (POME), landfill gas, and industrial wastewater which are particularly promising for Malaysia's VCM strategy. These projects are considered "low-hanging fruits" due to their scalability and the availability of local expertise for the development of these projects.

Within the context of Malaysia, NbS projects are also gaining traction, with several already registered under Verra. Focusing on NbS projects in the mid-term could be beneficial for promoting and supporting more registrations in the VCM.

In addition, Carbon Capture and Storage (CCS) and other emerging technologies represent a mid-to-long-term strategy. Despite current limitations in experience, know-how, and higher capital investment, initiating pilot projects now is crucial due to varying maturation periods.

Understanding the sectoral scopes and methodologies under the VCS and GS programmes is crucial to ensure projects can be implemented according to the methodologies' applicability conditions and eligibility criteria.

The approved methodologies for each sectoral scope are also explained in this chapter. There are examples of applicable NbS and TbS projects in Malaysia, including Positive Lists of Technology, and Excluded Projects from the VCS and GS programme scope. The details of project types and examples, including those registered or requesting registration under the VCS and GS in Malaysia, are shown in [Exhibit 49](#). This chapter also explains the treatment for double counting for VCS and GS and projects registered under other GHG programmes towards the end of this chapter.

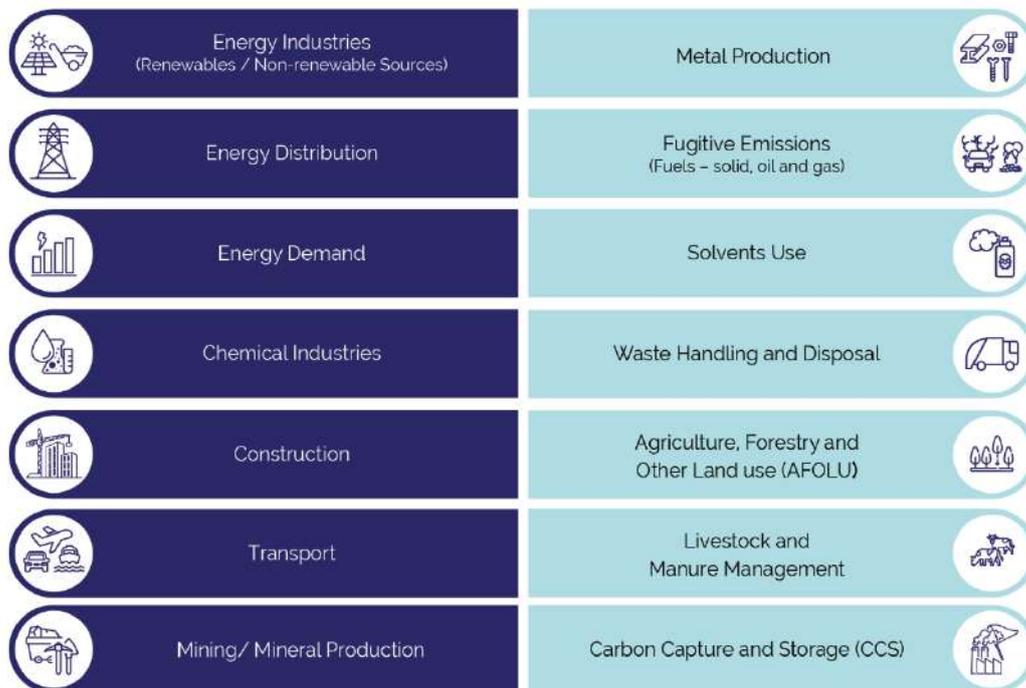
At the time of this handbook's update, detailed information on the VCS and GS is provided, as these are the standards currently recognised by BCX. The VCM Handbook will be periodically updated to include additional carbon standards as they gain recognition by BCX, ensuring alignment with the evolving landscape of eligible carbon projects.

4.2 Verra and Gold Standard Sectoral Scopes

In a VCM, a wide range of eligible projects can be implemented by adhering to methodologies accepted by the carbon standards used in the market, such as the VCS and GS. These projects categorised under NbS and TbS are eligible for trading on Bursa Carbon Exchange (BCX). See Exhibit 42, the VCS sectoral scopes and Exhibit 43, the GS sectoral scopes categorisation.

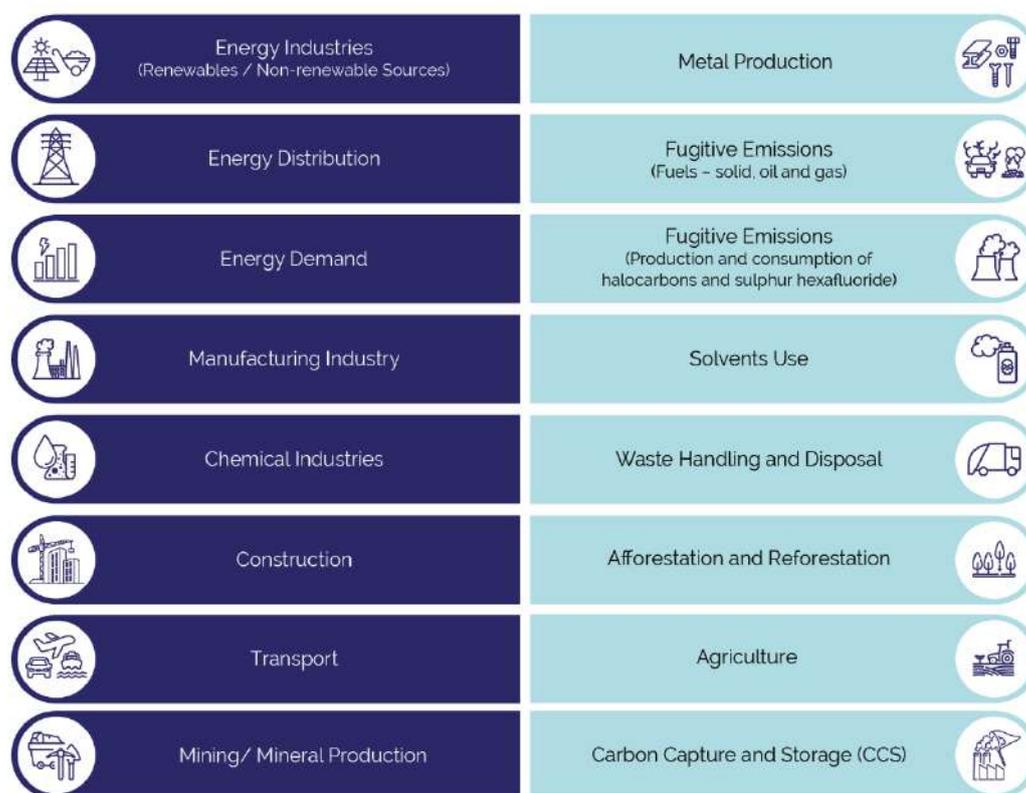
It is important to note that not all VCM projects in the AFOLU sector are considered NbS. NbS address a broad range of societal challenges and the drivers of biodiversity/ecosystem loss, often going beyond traditional VCM methodologies. For clarity, while many AFOLU projects may fall under NbS, some do not. For the exact classification, it is important to always refer to the methodology chosen.

Exhibit 42: VCS sectoral scopes categorisation.



Source: [VCS Sectoral Scopes](#)

Exhibit 43: GS sectoral scopes categorisation.



Source: GS [Sectoral Scopes](#)

4.2.1 Projects According to VCS Sectoral Scopes

NbS, also commonly known as Agriculture, Forestry and Other Land Use (AFOLU) projects, are carbon projects related to the actions of protecting, conserving, restoring, using and managing the ecosystem in a sustainable manner, including livestock management. The TbS are generally projects that are related to the mitigation of climate change with the help of technology. Both aim to avoid, reduce or remove GHG emissions from the atmosphere.

4.2.1.1 Nature-based Solutions

Forests are home to most of the world's terrestrial biodiversity, providing a wide range of ecosystem services and helping to regulate climate by removing carbon from the atmosphere. They are undisputedly one of the best examples of NbS. In Malaysia, forests are categorised into several legal forest categories. Due to the unavailability of eligible forests listed for NbS projects, eligibility was identified based on the assumption made by understanding the functions of each forest class.

There are two (2) types of forest:

1. Permanent Reserved Forest (PRF)
PRF is defined as any land constituted or deemed to have been constituted a permanent reserved forest under the [National Forestry Act 1984 \(ACT 313\), Section 2.](#)

It is further sub-categorised into four (4) types of functional classes:

- a) Production Forest
- b) Protection Forest
- c) Amenity Forest
- d) Research and Education Forest

2. State Land Forest

A State Land Forest is defined as land under the state authority's jurisdiction. See Exhibit 44 for the definition of forest classification in Malaysia and the eligibility for the NbS projects.

Exhibit 44: Definition of forest classification in Malaysia.

Type of Forest	Definition	Remarks
1. Permanent Reserved Forest (PRF)		
(a) Production Forest	<p>Forests where the management objective produces wood, fibre, bio-energy and/or non-wood forest products (Global Forest Resources Assessment 2020).</p> <p>Production Forests are sub-categorised into:</p> <ol style="list-style-type: none"> (a) Natural Forest Natural Forests are forests composed of indigenous trees, not planted by man. (b) Plantation Forest Plantation Forests are intensively managed and meet all the following criteria at planting and stand maturity: one or two species, even age class and regular spacing. 	Eligible for NbS project
(b) Protection Forest	<p>Forests ensure favourable climatic and physical conditions in the country, safeguard water resources, soil fertility, environmental quality, the preservation of biological diversity, and the minimisation of damage by floods and erosion to rivers and agricultural lands (National Forestry Policy, 1978 (Revised 1992)).</p> <p>Includes:</p> <ul style="list-style-type: none"> • Soil Protection Forest • Soil Reclamation Forest • Flood Control Forest • Water Catchment Forest • Forest Sanctuary for Wildlife • Virgin Jungle Reserves. 	Not Eligible for NbS project
(c) Amenity Forest	Forests for the conservation of adequate forest areas for recreation, ecotourism and public awareness of forestry.	Not Eligible for NbS project
(d) Research and Education Forest	Forests for conducting research, education and conservation of biological diversity.	Eligible for NbS project

2. State Land Forest		
State Land Forest	Land that is under the jurisdiction of the state authority. ¹²	Eligible for NbS project

Source: Derived from various sources

The NbS projects comprise two (2) sectoral scopes, which are the (14) Agriculture, Forestry and Other Land Use (AFOLU) and (15) Livestock and Manure Management. Both sectoral scopes are explained further below:

A. Agriculture, Forestry and Other Land Use (AFOLU)

AFOLU covers GHG emissions, reductions and/or carbon dioxide removals from projects or programme activities in the agriculture, forestry and other land use/land use change sectors for which the VCS Program has established rules and requirements with respect to specific project categories.

AFOLU can be further categorised into the six (6) sub-sectors below:

i. Afforestation, Reforestation and Revegetation (ARR)

Activities that increase carbon stocks in woody biomass (and in some cases, soils) by establishing, increasing and/or restoring vegetative cover through planting, sowing and/or human-assisted natural regeneration of woody vegetation.

ii. Agriculture Land Management (ALM)

Activities that increase carbon stocks in soils and woody biomass and/or decrease CO₂, N₂O and/or CH₄ emissions from soils on croplands and/or grasslands. Examples of projects include sustainable management of croplands and/or grasslands by reducing fertiliser and pesticide application, conservative tillage, cover crops, etc., to adapt to climate change impacts and achieve productivity.

iii. Improved Forest Management (IFM)

Activities that change forest management practices and increase carbon stocks on forest lands managed for wood products such as saw timber, pulpwood and fuelwood. Forest management practices such as extension of the rotation age of forests, stopping selective logging, conversion from logged to protected forest, etc., are some examples of practices and projects eligible under the IFM category. For instance, in Malaysia, a VCS project on the rehabilitation of logged-over dipterocarp forest is being carried out in Sabah.

iv. Reducing Emissions from Deforestation and Forest Degradation (REDD)

Activities that reduce GHG emissions from deforestation and/or degradation by slowing or stopping the conversion of forests to non-forest land and/or reducing the degradation of forest land where forest biomass is lost, and/or activities that enhance carbon stocks through improved forest management and/or afforestation, reforestation or revegetation. Globally, most of the carbon credits generated from the NBS are from REDD projects.

v. Avoided Conversion of Grasslands and Shrublands (ACoGS)

Avoiding GHG emissions by preventing the conversion of native grasslands and shrublands to a non-native state. Under this category, projects mainly involve avoiding conversion to commodity crop production, which will decrease the soil's

¹² Forestry Policy of Peninsular Malaysia.

organic carbon and increase soil erosion due to increased crop tillage practices, etc.

vi. Wetland Restoration and Conservation (WRC)

Restoration and conservation of wetlands by creating and/or managing the conditions required for healthy, sustainable wetland ecosystems. For example, removing underground drain tiles or building small dikes may help reduce coastal flooding and erosion while maintaining biodiversity in the ecosystem.

B. Livestock and Manure Management

Management of livestock and manure that results in methane emission reductions from ruminant livestock enteric fermentation and manure decomposition. Enteric fermentation is a digestive process that occurs in ruminant animals, where methane is released as a by-product. On the other hand, manure management involves the capturing, storing, treating and using of manure, which has important implications for farm productivity and the environment.

4.2.1.2 Technology-based Solutions

Technology-based Solutions comprise a total of 14 out of the 16 VCS sectoral scopes. The following is the definition of the sectoral scopes based on the above Exhibit 42: VCS sectoral scopes categorisation.

1. Energy (Renewable/Non-renewable)

Energy-related activities that involve any type of energy (renewable/non-renewable).

2. Energy Distribution

Energy-related activities that involve the distribution of energy (e.g. electricity grid or heat distribution system).

3. Energy Demand

Energy-related activities that involve the demand or need for energy.

4. Manufacturing Industry

Businesses or industries producing goods in large quantities in factories, etc.

5. Chemical Industry

Businesses or industries producing inorganic and organic chemicals (e.g. ammonia, nitric acid, adipic acid, etc.).

6. Construction

Activities that involve the process or method of building or making something, especially roads, buildings, bridges, etc.

7. Transport

Activities that involve a system for carrying people or goods from one place to another using vehicles, roads, etc.

8. Mining/Mineral Production

Activities that involve the process of extracting coal and other minerals from under the ground or the production of minerals (e.g. cement, lime, glass, etc.).

9. Metal Production

Production of metals (e.g. iron, steel, aluminium, etc.).

10. Fugitive Emissions – from fuels (solid, oil and gas)

Intentional and unintentional emissions from the extraction, processing, storage and transport of fuel to the point of final use.

11. Fugitive Emissions – from industrial gases (halocarbons and sulphur hexafluoride)

Intentional and unintentional emissions from industrial gases, i.e. halocarbons and sulphur hexafluoride.

12. Solvents Use

Activities that involve the use of solvents.

13. Waste Handling and Disposal

Activities that involve the handling and disposal of materials that are no longer needed and are disposed of.

16. Carbon Capture and Storage (CCS)

GHG emission reduction or carbon dioxide removal activities that capture CO₂ and sequester it into saline aquifers or into depleted oil or gas reservoirs with the intention of permanent sequestration on geological timescales. CCS is a type of Geologic Carbon Storage (GCS).

4.2.2 Projects According to GS Sectoral Scopes

The GS comprise a total of 16 sectoral scopes (comprised of NbS and TbS). The GS adopted the sectoral scopes of UNFCCC and the American National Standards Institute (ANSI), which are similar to the sectoral scopes and typically more closely aligned with ISO standards.

The following is the definition of the sectoral scopes based on the above Exhibit 43: GS sectoral scopes categorisation.

1. Energy Industries (renewable/non-renewable sources)

Projects involving renewable energy (e.g. solar, wind, hydro, geothermal) and non-renewable energy production.

2. Energy Distribution

Projects related to the distribution and efficiency of energy supply networks.

3. Energy Demand

Energy efficiency measures in industrial, commercial and residential sectors.

4. Manufacturing Industries

Emission reduction projects within manufacturing and production processes.

5. Chemical Industry

Projects that involve chemical processes and aim to reduce emissions in chemical production.

6. Construction

Projects that promote energy-efficient or low-carbon building techniques.

7. Transport

Initiatives to reduce emissions from transportation, such as fuel-switching or sustainable public transport.

8. Mining/Mineral Production

Emission reduction activities within the mining and mineral processing sectors.

9. Metal Production

Projects that focus on reducing emissions in metal extraction and processing.

10. Fugitive Emissions from fuels (solid, oil and gas)

Projects aimed at capturing or reducing unintended emissions from fuel extraction and handling.

11. Fugitive Emissions from production and consumption of halocarbons and sulphur hexafluoride

Efforts to reduce leaks or releases of potent GHGs like HFCs and SF₆.

12. Solvents Use

Projects aimed at reducing emissions from the use of solvents.

13. Waste Handling and Disposal

Initiatives related to waste management, landfill gas capture, composting and waste-to-energy technologies.

14. Afforestation and Reforestation

Projects that involve planting trees to sequester carbon and restore degraded lands.

15. Agriculture

Emission reduction projects in agricultural practices, including soil management, livestock production and sustainable farming techniques.

16. Carbon Capture and Storage (CCS)

Technologies and projects related to capturing and storing CO₂ emissions from industrial and energy sources.

4.3 Examples of Applicable Projects in Malaysia

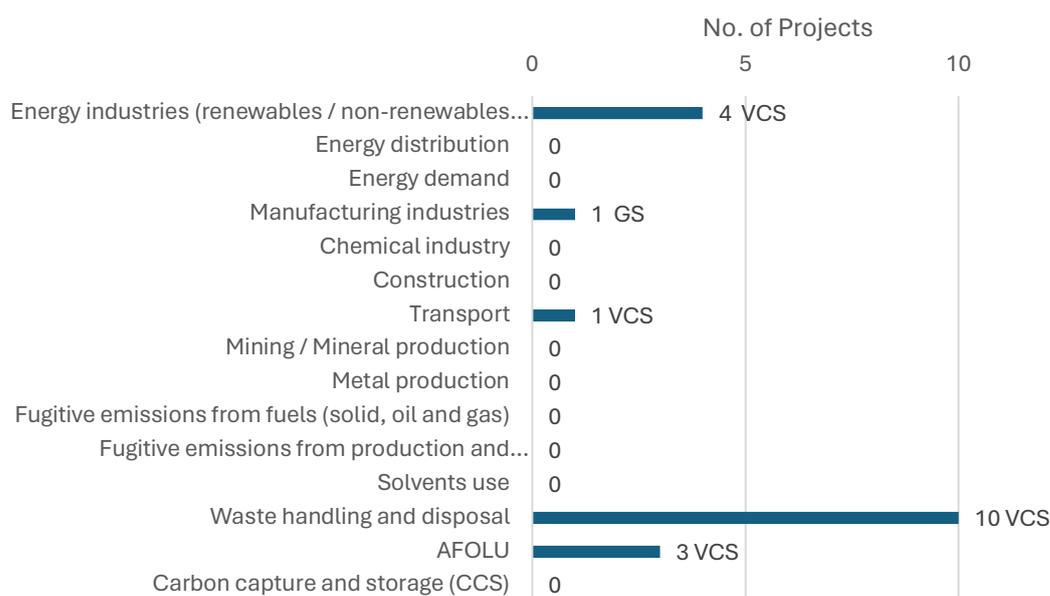
At the time of this handbook update, in Malaysia, there are a total of 18 [VCS projects](#) at various stages. Additionally, there is one (1) [Gold Standard project](#) currently requesting registration (refer to Exhibit 45).

The 18 VCS projects include:

- Three (3) AFOLU projects,
- Four (4) Energy industries (renewable/non-renewable) projects,
- Ten (10) Waste handling and disposal projects and
- One (1) Transport project.

There is currently one (1) Manufacturing Industries project under Gold Standard.

Exhibit 45: Carbon projects in Malaysia as of 27 November 2024.



Source: Illustration based on Verra and [GS Impact Registry](#)

Exhibit 45 demonstrates that the majority of projects are TbS, making up 84% of the total projects, while NbS projects account for only 16%. Current NbS projects from the AFOLU sectoral scope include Improved Forest Management (IFM), Afforestation, Reforestation, and Revegetation (ARR) and Wetlands Restoration and Conservation (WRC) projects.

Of the TbS projects, 53% are categorised under waste handling and disposal, followed by energy sector projects (renewable and non-renewable), which constitute 21%. These projects predominantly focus on methane capture from Palm Oil Mill Effluent (POME) or industrial wastewater. This is followed by a fuel switch project (11%) in the transport and manufacturing sectors.

The higher proportion of TbS projects compared to NbS can be attributed to the shorter time frame and the substantially less funding required to generate carbon credits from TbS projects despite yielding fewer carbon credits overall. Nevertheless, maintaining a balanced portfolio of carbon projects is prudent for the country, as it ensures both immediate and long-term benefits.

Project proponents, also known as project developers, are allowed to develop any carbon project with an applicable methodology that meets all conditions and eligibility criteria. However, if there is no applicable methodology, the project proponent can choose to develop a new methodology where the processes are as described in [Chapter 6](#) of this VCM Handbook.

4.4 Positive Lists of Technology

Clean Development Mechanism (CDM), which is one of the Verra and Gold Standard approved GHG programmes, established specific lists of technologies and associated conditions that automatically confer additionality to CDM project activities and CDM Programme of Activities (PoAs) that apply such technologies and meet specified conditions.

4.4.1 Verra

Under Verra, hereinafter referred to as [Positive Lists of Technologies, version 04.0](#), which is valid up to 10 March 2025, includes the sectoral scopes related to renewable energy, waste handling and disposal and technology used by households, communities and small and medium enterprises (SMEs). More details on the conditions required to quantify are outlined in Exhibit 46.

Exhibit 46: Verra's Positive Lists of Technologies.

Positive Lists of Technologies	Conditions
Renewable Energy	
Renewable energy technologies for large-scale grid-connected power generation <ul style="list-style-type: none"> Solar thermal electricity generation including concentrating solar power Off-shore wind technologies Marine wave technologies Marine tidal technologies Ocean thermal technologies 	Any of the following conditions are met at the time of Project Design Document (PDD) submission: <ul style="list-style-type: none"> The percentage share of the total installed capacity of the specific technology in the total installed grid-connected power generation capacity in the host country is equal to or less than two (2) percent or The total installed capacity of the technology in the host country is less than or equal to 50 MW
Renewable energy technologies for large-scale isolated grid power generation <ul style="list-style-type: none"> Solar photovoltaic technologies Solar thermal electricity generation including concentrating solar power Off-shore wind technologies Marine wave technologies Marine tidal technologies Ocean thermal technologies 	Any of the following conditions are met at the time of PDD submission: <ul style="list-style-type: none"> The percentage share of total installed isolated grid power generation capacity of the specific technology in the total installed isolated grid power generation capacity in the host country is equal to or less than two (2) percent or The total installed isolated grid power generation capacity of the specific technology in the host country is less than or equal to 50 MW
Renewable energy technologies for small-scale grid-connected power generation <ul style="list-style-type: none"> Solar thermal electricity generation including concentrating solar power Off-shore wind technologies Marine wave technologies 	None

Positive Lists of Technologies	Conditions
<ul style="list-style-type: none"> • Marine tidal technologies • Building-integrated wind turbines or household rooftop wind turbines of a size up to 100 kW • Biomass internal gasification combined cycle 	
<p>Renewable energy technologies for small-scale off-grid power generation</p> <ul style="list-style-type: none"> • Micro/pico-hydro (with power plant size up to 100 kW) • Micro/pico-wind turbine (up to 100 kW) • PV-wind hybrid (up to 100 kW) • Geothermal (up to 200 kW) • Biomass gasification/biogas (up to 100 kW) 	<p>The individual units do not exceed the thresholds indicated in parentheses with the aggregate project installed capacity not exceeding the 15 MW threshold.</p>
<p>Rural electrification projects</p> <p>Rural electrification¹³ project activities using renewable energy sources in countries with rural electrification rates less than 50%. The most recent available data on the electrification rates shall be used to demonstrate compliance with the 50% threshold. In no case shall data older than three (3) years from the date of commencement of validation of the project activity be used.</p>	<p>Rural electrification project activities by grid extension are automatically additional when all the following criteria are met:</p> <ul style="list-style-type: none"> • Rural electrification rate in the country is below 50% • Geography: Least Developed Countries (LDCs), Small Island Developing States, Special Underdeveloped Zone (SUZ)¹⁴ • Recent trends: Rural electrification rate has increased by less than 20% over the past ten (10) years • The extension of a grid for rural electrification of a community involves at least a distance of 3 km from the point of grid extension to the rural community at which the CDM project is implemented
Waste Handling and Disposal	
<p>Landfill gas recovery and its gainful use</p> <p>The project activities and PoAs at new or existing landfills (greenfield or brownfield) are deemed automatically additional if it is demonstrated that prior to the implementation of the project activities and PoAs, the landfill gas (LFG) was only vented and/or flared (in the case of brownfield projects) or would have been only vented and/or flared (in the case of greenfield projects) but not utilised for energy generation.</p>	<p>Any of the following conditions are met under the project activities and PoAs:</p> <ul style="list-style-type: none"> • The LFG is used to generate electricity in one or several power plants with a total nameplate capacity that equals to or is below 10 MW • The LFG is used to generate heat for internal or external consumption • The LFG is flared
<p>Methane recovery in wastewater treatment</p>	<p>Any of the following conditions are met under the project activities and PoAs in an existing facility:</p> <ul style="list-style-type: none"> • The existing treatment system is an anaerobic lagoon and the wastewater

¹³ Rural electrification for the purpose of this document is defined as a project activity for supplying renewable electricity to facilities and energy consumers that do not have access to any electricity distribution system/network such as a national grid or regional grid. Such electricity end-use facilities may include but are not limited to households, public buildings and/or small, medium and micro-enterprises. Electricity uses may include but are not limited to interior lighting, street lighting, refrigeration or agricultural water pumps. The rural electrification rate is the percentage of the rural population having access to electricity.

¹⁴ SUZ as defined under the micro-scale additionality tool.

Positive Lists of Technologies	Conditions
	<p>discharged meets the host country's regulations</p> <ul style="list-style-type: none"> • There is no regulation in the host country that requires the management of biogas from domestic, industrial and agricultural sites • There is no capacity increase in the wastewater treatment system • No other alternative economic activity is expected to be undertaken on the land of the existing lagoon • The biogas is used to generate electricity in one or more power plants, and the total nameplate capacity is below 5 MW
Technology/Measure Used by Households, Communities and Small and Medium Enterprises (SMEs)	
Biogas digesters for cooking	Digesters used in biogas generation from anaerobic treatment waste (e.g. kitchen, vegetable, animal and farm) where the resulting biogas is used for heat production for cooking purposes, as eligible under the approved CDM methodologies, for example, AMS-I.C.
Micro-irrigation	Application of optimum quantify of water at low hourly flow rates directly to the root zone of plants (such as drip irrigation, micro-sprinklers), which results in avoidance of water losses attributed to the traditional flooded irrigation systems.
Energy-efficient pump set for agriculture	Energy-efficient pump and motor assembly together with starter and other electrical accessories/devices to deliver water for irrigation. Only pump sets belonging to the highest efficiency class in the national standards and labelling (S & L) programme (e.g. five-star energy efficiency rating) are eligible. Where such S & L programmes are not in place, it shall be demonstrated that the efficiency of project pump sets is at least 10% (in relative terms) higher than the average efficiency of the pump sets in the market to be eligible.

Source: Positive Lists of Technologies, v04.0

4.4.2 Gold Standard

Under GS, the [CDM Tool 32 – Positive list of technologies for additionality](#) provides guidelines on the applicability of the CDM in the context of GS certification for waste handling and disposal projects involving the technologies listed in Exhibit 47.

Exhibit 47: GS, CDM Tool 32 - Positive list of technologies.

Positive List of Technologies	Conditions
Waste handling and disposal	
Landfill gas recovery and its gainful use	The project activities and PoAs at new or existing landfills (greenfield or brownfield) are deemed automatically additional, if it is demonstrated that prior to the implementation, the landfill gas (LFG) was only vented and/or flared (in the case of brownfield projects) or

Positive List of Technologies	Conditions
	<p>would have been only vented and/or flared (in the case of greenfield projects) but not utilised for energy generation and that under the project activities and PoAs any of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The LFG is used to generate electricity in one or several power plants with a total nameplate capacity that equals or is below 10MW; 2. The LFG is used to generate heat for internal or external consumption.
<p>Methane recovery in wastewater treatment</p>	<p>The project activities and PoAs in an existing facility are deemed automatically additional if it is demonstrated that all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The existing treatment system is an anaerobic lagoon and the wastewater discharged meets the host country's regulations; 2. There is no regulation in the host country that requires the management of biogas from domestic, industrial and agricultural sites; 3. There is no capacity increase in the wastewater treatment system; 4. No other alternative economic activity is expected to be undertaken on the land of the existing lagoon; 5. The biogas is used to generate electricity in one or more power plants and the total nameplate capacity is below 5 MW.

Source: GS, CDM Tool 32 – Positive list of technologies for additionality

Note: Tool 32 can be used to demonstrate the additionality of projects and/or PoAs seeking GS certification. The document shall be read with the [Gold Standard Principles and Requirement](#), [Renewable Energy Activity Requirement](#) and [Community Service Activity Requirements](#) as applicable. Should there be a conflict, the eligibility requirements defined in the GS standards will supersede.

4.5 Excluded Projects

4.5.1 Verra

Apart from the CDM, the VCS Program scope **excludes projects** that can reasonably be assumed to have GHG emissions primarily for their subsequent reduction, removal or destruction. The VCS Program also excludes the following project activities under the circumstances indicated in Exhibit 48.

Exhibit 48: Excluded project activities under the VCS Program.

Exclusions from VCS Program Scope	Exclusion
<p>Grid-connected electricity generation activities using hydroelectric power plants</p> <ul style="list-style-type: none"> The exclusion does not apply to ocean energy (e.g. wave, tidal, salinity gradient and ocean thermal energy conversion) For hydro projects, large-scale means a maximum capacity of greater than 15 MW, where maximum capacity is the installed/rated capacity or authorised capacity (as determined in the activity approval from the project regulator, government or similar entity), whichever is lower Grid-connected means >50% of total generation is exported to a national or regional grid¹⁵ 	<p>Excluded in non-Least Developed Countries (LDCs). Furthermore, large-scale projects excluded in LDCs¹⁶</p>
<p>Grid-connected electricity generation activities using wind, geothermal or solar photovoltaic (PV) power plants</p> <ul style="list-style-type: none"> The exclusion does not apply to concentrated solar thermal-to-electricity, floating solar PV or energy storage systems (e.g. batteries) Grid-connected means >50% of total generation is exported to a national or regional grid 	<p>Excluded in non-LDCs</p>
<p>Activities recovering waste heat for combined cycle electricity generation or to heat/cool via cogeneration or trigeneration</p> <ul style="list-style-type: none"> The exclusion does not apply to waste gas recovery or electricity generation using waste heat recovery outside of combined cycle applications (e.g. organic Rankine cycles) 	<p>Excluded in non-LDCs</p>
<p>Activities generating electricity and/or thermal energy for industrial use from the combustion of non-renewable biomass, agro-residue biomass or forest residue biomass</p> <ul style="list-style-type: none"> The exclusion does not apply to gasification, pyrolysis, combusting biofuels, biogas, fractions of renewable biomass in refuse-derived fuels, agro/forest biomass residues in waste streams that are sent to landfills, CO₂ capture and storage from renewable biomass combustion or thermal efficiency improvements (e.g. cook stoves) 	<p>Excluded in non-LDCs</p>
<p>Activities generating electricity and/or thermal energy using fossil fuels and activities that involve switching from a higher to a lower carbon content fossil fuel</p> <ul style="list-style-type: none"> The exclusion does not apply to the use of captured flare and/or vent gas or waste containing previously used petroleum products (e.g. used plastics, oils, lubricants) 	<p>Excluded in non-LDCs</p>
<p>Activities replacing electric lighting with more energy-efficient electric lighting, such as the replacement of incandescent electrical bulbs with compact fluorescent lights (CFLs) or light-emitting diodes (LEDs)</p>	<p>Excluded for large-scale projects in non-LDCs</p>

¹⁵ Grid-connected electricity generation: The generation of electricity primarily for delivery to a national or regional grid where at least 50% of annual electricity generation (by the quantity of energy, not capacity) is planned to be delivered to such a grid. Generation of electricity for onsite self-consumption, delivery to a micro-grid, distributed mini-grid or off-grid consumption is not included in this definition.

¹⁶ As of the time of preparing this VCM Handbook, Malaysia is not listed as one of the LDCs designated by the United Nations.

Exclusions from VCS Program Scope	Exclusion
<ul style="list-style-type: none"> Large-scale means energy-efficient improvements with a maximum saving of greater than 60 GWh/year or emission reduction of greater than 60 kt CO_{2eq} per year 	
Activities installing and/or replacing electricity transmission lines and/or energy-efficient transformers <ul style="list-style-type: none"> Large-scale means energy-efficient improvements with a maximum saving of greater than 60 GWh/year or emission reduction of greater than 60 kt CO_{2eq} per year 	Excluded for large-scale projects in non-LDCs
Activities that reduce hydrofluorocarbon-23 (HFC-23) emissions	Excluded in all countries

Source: [VCS Standard, v4.7](#)

4.5.2 Gold Standard

A project type is automatically eligible for GS Certification if there are GS approved [Activity Requirements](#) and/or [Impact Quantification Methodologies](#) associated with it or if it's referenced in the GS [Product Requirements](#). These are published in the Gold Standard website and shall be followed where provided for a given project type.

Eligible activities and exclusions under GS should be assessed by reviewing the GS [Principles & Requirements](#), followed by the [Activity Requirements](#) relevant to the activity type as follows:

- [Renewable Energy Activity Requirements](#)
- [Community Services Activity Requirements](#)
- [Land-Use & Forests Activity Requirements](#)
- [Blue Carbon & Freshwater Activity Requirements](#)

The documents above should be reviewed to assess eligibility, however, notable exclusions under GS are as follows:

Exclusions from GS Programme Scope
Geoengineering
Energy generated from fossil fuels or nuclear, fossil fuel switch or any activity that supports, enhances or prolongs fossil fuel energy generation
Reducing Emissions from Deforestation and Forest Degradation (REDD+)
Grid-connected renewable energy projects that are not: <ul style="list-style-type: none"> (a) located in an LDC; (b) not located in a low or low-middle income country with low RE penetration; or

Exceptions to this rule can be viewed in the [Renewable Energy Activity Requirements](#) section 2.

Note: Project developers should always refer to the latest Standard Document or approved Methodology when assessing project eligibility.

In addition to the information in Exhibit 48, project proponents in Malaysia have the flexibility to develop projects that fit into any one or more of the 16 sectoral scopes under the VCS and GS. The details of project types and examples, including those registered or requesting registration under the VCS and GS in Malaysia, are shown in Exhibit 49.

Exhibit 49: Type of applicable projects and examples of projects in Malaysia.

Sectoral Scope / Category	Types of Applicable Projects (non-exhaustive list)	Example
Nature-Based		
Agriculture, Forestry and Other Land Use (AFOLU)		
<p><i>Afforestation, Reforestation and Revegetation (ARR) or Afforestation and Reforestation</i></p>	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Agroforestry <p><u>GS</u></p> <ul style="list-style-type: none"> • Afforestation/Reforestation • Blue Carbon • Agroforestry • Revegetation • Silviculture 	<p><u>VCS</u></p> <ul style="list-style-type: none"> • 4814: Marudi Forest Conservation and Restoration Project <p><u>GS</u></p> <p>No registered project as of the time of preparing this VCM Handbook</p>
<p><i>Agriculture Land Management (ALM) or Agriculture</i></p>	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Reductions in fertiliser application and tillage • Improvements in water management • Residue management • Cash crop and cover crop planting and harvest • Grazing practices • Sustainable Grassland Management (SGM) <p><u>GS</u></p> <ul style="list-style-type: none"> • Soil Organic Carbon • Methane emission reduction by adjusted water management practice in rice cultivation • Nitrogen fertiliser management • Improved rice cultivation • Nutrient management • Avoided field burnings 	<p>No registered VCS or GS projects as of the time of preparing this VCM Handbook</p>
<p><i>Improved Forest Management (IFM)</i></p>	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Extension of rotation age of a forest or patch of forest before harvesting • Stopping selective logging • Conversion from logged to protected forest (LTPF) • Protecting logged or degraded forests from further logging or protecting unlogged forests from future logging • Reduced Impact Logging (RIL) 	<p><u>VCS</u></p> <ul style="list-style-type: none"> • 672: INFAPRO Rehabilitation of logged-over dipterocarp forest in Sabah, Malaysia • 2609: Kuamut Rainforest Conservation Project <p><u>GS</u></p>

Sectoral Scope / Category	Types of Applicable Projects (non-exhaustive list)	Example
	<u>GS</u> <ul style="list-style-type: none"> Improved Forest Management (IFM) Timber in construction 	No registered projects as of the time of preparing this VCM Handbook
<i>Reducing Emissions from Deforestation and Forest Degradation (REDD)</i>	<u>VCS</u> <ul style="list-style-type: none"> Project activities that reduce emissions from planned (APD) and unplanned (AUDD) deforestation Project activities that reduce emissions from planned (APWD) and unplanned (AUWD) wetland degradation Degradation through the extraction of wood for fuel (fuelwood and charcoal production) <u>GS</u> Gold Standard does not issue carbon credits for REDD Plus (avoided deforestation) projects.	No registered projects as of the time of preparing this VCM Handbook
<i>Avoided Conversion of Grasslands and Shrublands (ACoGS)</i>	<u>VCS</u> <ul style="list-style-type: none"> Avoided ecosystem conversion <u>GS</u> <ul style="list-style-type: none"> Pasture management 	No registered VCS or GS projects as of the time of preparing this VCM Handbook
<i>Wetland Restoration and Conservation (WRC)</i>	<u>VCS</u> <ul style="list-style-type: none"> Tidal wetland and seagrass restoration Rewetting drained tropical peatlands <u>GS</u> <ul style="list-style-type: none"> Mangrove restoration 	No registered VCS or GS projects as of the time of preparing this VCM Handbook
Livestock and Manure Management	<u>VCS</u> <ul style="list-style-type: none"> Inhibition of methanogenesis through the introduction of a feed ingredient into ruminants' diets <u>GS</u> <ul style="list-style-type: none"> Methane emissions reduction from enteric fermentation in beef cattle through application of feed supplements Methane reductions from improved management in smallholder dairy production systems. 	No registered VCS or GS projects as of the time of preparing this VCM Handbook
Technology-Based		
Energy (Renewable/Non-renewable)	<u>VCS</u> Renewable/Non-renewable <ul style="list-style-type: none"> Biomass power generation – on-grid and off-grid Biogas power generation from POME, animal waste, etc. Solar: Solar water heating, solar photovoltaic systems Hydro: Mini-hydro power 	<u>VCS</u> <ul style="list-style-type: none"> <u>968: Sungai Kerling Hydropower Plant (was previously registered under CDM)</u> <u>1016: CE Technology Fuel Switch for Cleanroom Glove Industry Project, Taiping</u>

Sectoral Scope / Category	Types of Applicable Projects (non-exhaustive list)	Example
	<ul style="list-style-type: none"> • New gas-fired co-generation plant that provides electricity to the grid and generates steam/hot water • Displacement of electricity supplying the grid which would have been produced from more carbon-intensive sources <p>Energy Efficiency</p> <ul style="list-style-type: none"> • Improving efficiency in electricity production • Improving combined heat and electricity production • Improved boilers, more efficient process heat and steam systems • Fuel switching • Energy efficiency through demand-side management <p><u>GS</u></p> <p>Renewable Energy</p> <ul style="list-style-type: none"> • Suppressed demand micro-scale Electrification and Energisation • Emission Reduction by shore-side or Off-shore Electricity Supply System <p>Energy Efficiency</p> <ul style="list-style-type: none"> • Emission Reductions from Safe Drinking Water Supply • Clean cooking solutions • Household energy efficiency • Sustainable transport solutions 	<ul style="list-style-type: none"> • <u>1552: Bundled Run-Of-River Mini Hydro Power Projects at Sungai Sia and Sungai Benus, Pahang, Malaysia</u> • <u>4964: Malaysia Renewable Bioenergy Grouped Project</u> <p><u>GS</u></p> <p>No registered projects as of the time of preparing this VCM Handbook</p>
Energy Distribution	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Installation of energy-efficient transformers in a power distribution grid • Installation of high voltage direct current power transmission line • Introduction of low-resistance power transmission line <p><u>GS</u></p> <ul style="list-style-type: none"> • Hybrid energy storage 	<p>No registered VCS or GS projects as of the time of preparing this VCM Handbook</p>
Energy Demand	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Implementing energy efficiency measures that reduce the energy consumption of buildings • Replacement of mobile homes • Implementing individual energy efficiency measures in existing buildings • Utilising on-wing jet engine washing as a means to improve jet engine propulsive efficiency • Replacement of baseline water flow devices (e.g. showerheads, faucets) 	<p>No registered VCS or GS projects as of the time of preparing this VCM Handbook</p>

Sectoral Scope / Category	Types of Applicable Projects (non-exhaustive list)	Example
	<p>with low-flow hot water savings devices</p> <p><u>GS</u></p> <ul style="list-style-type: none"> • Demand side energy management • Other energy management measures 	
Manufacturing Industries	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Using waste CO₂ as a feedstock in the production of concrete <p><u>GS</u></p> <ul style="list-style-type: none"> • Fuel switching • Biomass/waste combustion • Biofuel for land transport, aviation and shipping • Industry energy efficiency (e.g. Iron and steel, aluminium, cement etc.) 	<p><u>VCS</u></p> <p>No registered projects as of the time of preparing this VCM Handbook</p> <p><u>GS</u></p> <ul style="list-style-type: none"> • <u>GS11356: Fuel-Switch project deriving carbon assets from the use of non-edible raw agriculture-derived oil system (Nerado System) to replace heavy fuel oil for aluminium dross recycling in Malaysia.</u>
Chemical Industry	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Use of Hydrogen Peroxide-based Propylene Oxide (HPPO) Technology <p><u>GS</u></p> <ul style="list-style-type: none"> • Industry bulk chemical • Industrial minerals and others 	<p>No registered VCS or GS projects as of the time of preparing this VCM Handbook</p>
Construction	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Substitution of a sulphur product for a proportion of Portland cement when producing precast concrete and other concrete-based products such as pre-cast pipes, paving stones, slabs and tanks <p><u>GS</u></p> <ul style="list-style-type: none"> • Cement • Iron and steel 	<p>No registered VCS or GS projects as of the time of preparing this VCM Handbook</p>
Transport	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Efficiency improvements for vehicles • Switching to fuel systems with lower emissions • Electric vehicle charging stations, including their associated infrastructure • Use of pallets – the flat, portable structures that support goods during freight transport – lighter in weight than conventional alternatives • Substitution of a sulphur product for a proportion of the bitumen binder used in conventional hot asphalt paving <p><u>GS</u></p> <ul style="list-style-type: none"> • Energy Efficiency Shipping • Sustainable Transportation 	<p><u>VCS</u></p> <ul style="list-style-type: none"> • <u>SKS Go Green</u> <p><u>GS</u></p> <p>No registered projects as of the time of preparing this VCM Handbook</p>

Sectoral Scope / Category	Types of Applicable Projects (non-exhaustive list)	Example
Mining/Mineral Production	<u>VCS</u> <ul style="list-style-type: none"> • Pre-draining methane from an active open-cast mining operation • Capturing and destroying methane from abandoned/decommissioned coal mines <u>GS</u> <ul style="list-style-type: none"> • Mining • Industrial minerals and others 	No registered VCS or GS projects as of the time of preparing this VCM Handbook
Metal Production	<u>VCS</u> <ul style="list-style-type: none"> • Improving electrical energy efficiency of an existing submerged electric arc furnace used for the production of silicon and ferroalloys • Upgrading the smelting technology, which results in the reduction of perfluorocarbon (PFC) emissions • Improving the electrical energy use efficiency in primary aluminium smelters • Replacement of sulphur hexafluoride (SF₆) with alternate cover gas in the magnesium industry • Waste heat utilisation for pre-heating of raw materials in sponge iron manufacturing process • Improving energy efficiency by modifying ferroalloy production facility • Use of charcoal from planted renewable biomass in a new iron ore reduction system • Introduction of hot supply of Direct Reduced Iron in Electric Arc Furnaces • Installation of an abatement system in existing semiconductor manufacturing facilities <u>GS</u> <ul style="list-style-type: none"> • Aluminium 	No registered VCS or GS projects as of the time of preparing this VCM Handbook
Fugitive Emissions – from fuels (solid, oil and gas)	<u>VCS</u> <ul style="list-style-type: none"> • Capturing, using and destroying methane emitted from coal bed seeps <u>GS</u> No information available at the time of preparing this VCM Handbook	No registered VCS or GS projects as of the time of preparing this VCM Handbook
Fugitive Emissions – from industrial gases (halocarbons and sulphur hexafluoride)	<u>VCS</u> <ul style="list-style-type: none"> • Recovering and destroying Ozone-Depleting Substances (ODS) from products where a partial or total atmospheric release of ODS occurs 	No registered VCS or GS projects as of the time of preparing this VCM Handbook

Sectoral Scope / Category	Types of Applicable Projects (non-exhaustive list)	Example
	<u>GS</u> No information available at the time of preparing this VCM Handbook	
Solvents Use	No information available at the time of preparing this VCM Handbook	No registered VCS or GS projects as of the time of preparing this VCM Handbook
Waste Handling and Disposal	<u>VCS</u> Waste Management <ul style="list-style-type: none"> • Power and heat production from waste (waste-to-energy (WtE)), biomass burning • Gas recovery from landfills • Anaerobic wastewater treatment • Conversion of waste biomass into biochar • Agrobiomass residue to power/biofuel • Methane avoidance <u>GS</u> <ul style="list-style-type: none"> • Waste Management and Disposal • Methane management at landfills • Incineration and thermal treatment • Waste reduction, reuse and recycling • Wastewater and sludge treatment 	<u>VCS</u> <ul style="list-style-type: none"> • <u>769: Methane Recovery and Utilisation Project at United Plantations Berhad, Jendarata Palm Oil Mill, Malaysia (was previously registered under CDM (1153))</u> • <u>860: AMA08-W-22, Methane Recovery in Wastewater Treatment Johor, Malaysia (was previously registered under CDM (2641))</u> • <u>861: AMA08-W-21, Methane Recovery in Wastewater Treatment Johor, Malaysia (was previously registered under CDM (2632))</u> • <u>862: AMA08-W-24, Methane Recovery in Wastewater Treatment Pahang, Malaysia (was previously registered under CDM (2642))</u> • <u>863: AMA08-W-25, Methane Recovery in Wastewater Treatment Pahang, Malaysia (was previously registered under CDM (2602))</u> • <u>864: AMA08-W-23, Methane Recovery in Wastewater Treatment Sarawak, Malaysia (was previously registered under CDM (2635))</u> • <u>865: MY08-WWP-26, Methane Recovery in Wastewater Treatment Pahang, Malaysia (was previously registered under CDM (2657))</u> • <u>867: AMA08-W-10, Methane Recovery in Wastewater Treatment, Kedah, Malaysia (was previously registered under CDM (2623))</u>

Sectoral Scope / Category	Types of Applicable Projects (non-exhaustive list)	Example
		<ul style="list-style-type: none"> • 4279: Monsoon Methane Avoidance from Industrial Wastewater in Malaysia Grouped Project • 4887: Wastewater to Biogas Grouped Project
Carbon Capture and Storage (CCS)	<p><u>VCS</u></p> <ul style="list-style-type: none"> • Geologic carbon storage • Geologic carbon mineralisation • Carbon capture, utilisation and storage in geologic reservoirs <p><u>GS</u></p> <ul style="list-style-type: none"> • Carbon sequestration 	No registered VCS or GS projects as of the time of preparing this VCM Handbook

Source: Illustration based on Verra and GS

Note: Project developers should always refer to the latest Standard Document or approved Methodology when assessing project eligibility.

4.6 Methodologies Applicable for Eligible Projects in Malaysia

Relevant methodologies apply under each sectoral scope, which the project proponents must select before starting their projects. Hence, a proper understanding of the sectoral scopes and methodologies under the VCS and GS programmes is crucial to ensuring that the projects can be implemented according to the methodologies' applicability conditions and eligibility criteria.

The VCS and GS programmes offer their own set of approved methodologies for project proponents. Additionally, methodologies from other approved GHG programmes, including the CDM, may be applied to projects seeking VCS and GS registration. **Do note that the project proponents should always prioritise and check on the suitability of the VCS and GS methodologies first, prior to the CDM methodologies.**

4.6.1 Verra – Approved Methodologies under the VCS for each sectoral scope

Exhibit 50 summarises methodologies under VCS and eligible CDM methodologies applicable to the project for each sectoral scope in Malaysia.

Exhibit 50: Approved methodologies under the VCS and CDM programmes.

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
Nature-Based					
14 Agriculture, Forestry and Other Land Use (AFOLU)					
(a)	Afforestation, Reforestation and Revegetation (ARR)	VM0033¹⁷ Methodology for Tidal Wetland and Seagrass Restoration VM0034 Canadian Forest Carbon Offset Methodology	-	-	-

¹⁷ Verra has replaced CDM AR-AM0014 and AR-AMS0003 methodologies with VM0033 Methodology for Tidal Wetland and Seagrass Restoration, v2.0. Projects that have completed pipeline listing on the Verra Registry by 31 August 2022 may use CDM methodologies AR-AM0014 and AR-AMS0003 if they complete validation and request registration by 28 February 2023.

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
		VM0047 ¹⁸ Afforestation, Reforestation and Revegetation			
(b)	Agriculture Land Management (ALM)	VM0032 Methodology for the Adoption of Sustainable Grasslands through Adjustment of Fire and Grazing VM0042 Improved Agricultural Land Management	AM0073 (Agriculture) GHG emission reductions through multi-site manure collection and treatment in a central plant	AMS-III.D (Agriculture) Methane recovery in animal manure management systems	ACM0010 (Agriculture) GHG emission reductions from manure management systems
(c)	Improved Forest Management (IFM)	VM0003 Methodology for Improved Forest Management through Extension of Rotation Age VM0005 Methodology for Conversion of Low-Productive Forest to High-Productive Forest VM0010 Methodology for Improved Forest Management: Conversion from Logged to Protected Forest			

¹⁸ Starting 28 September 2023, VM0047 replaces AR-ACM0003 and AR-AMS0007.

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
		VM0011 Methodology for Calculating GHG Benefits from Preventing Planned Degradation VM0012 Improved Forest Management in Temperate and Boreal Forests (LtPF) VM0034 Canadian Forest Carbon Offset Methodology VM0035 Methodology for Improved Forest Management through Reduced Impact Logging VM0045 Methodology for Improved Forest Management Using Dynamic Matched Baselines from National Forest Inventories			

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
(d)	Reducing Emissions from Deforestation and Forest Degradation (REDD)	VM0006 Methodology for Carbon Accounting for Mosaic and Landscape-scale REDD Projects VM0007 REDD+ Methodology Framework (REDD+MF) VM0015 Methodology for Avoided Unplanned Deforestation VM0034 Canadian Forest Carbon Offset Methodology VM0048 Reducing Emissions from Deforestation and Forest Degradation			
(e)	Avoided Conversion of Grasslands and Shrublands (ACoGS)	-			
(f)	Wetland Restoration and Conservation (WRC)	VM0033 ¹⁹ Methodology for Tidal Wetland and Seagrass Restoration			

¹⁹ Verra has replaced CDM AR-AM0014 and AR-AMS0003 methodologies with VM0033 Methodology for Tidal Wetland and Seagrass Restoration, v2.0. Projects that have completed pipeline listing on the Verra Registry by 31 August 2022 may use CDM methodologies AR-AM0014 and AR-AMS0003 if they complete validation and request registration by 28 February 2023.

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
		VM0036 Methodology for Rewetting Drained Temperate Peatlands			
15	Livestock and Manure Management	VM0041 Methodology for the Reduction of Enteric Methane Emissions from Ruminants through the Use of Feed Ingredients	-	-	-
Technology-Based					
1	Energy Demand	VM0038 Methodology for Electric Vehicle Charging Systems VM0050 Energy Efficiency and Fuel-Switch Measure in Cookstoves	AM0026 Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order-based dispatch grid AM0036 Use of biomass in heat generation equipment AM0072 Fossil fuel displacement by geothermal resources for space heating	AMS-I.B. Mechanical energy for the user with or without electrical energy AMS-I.C. Thermal energy production with or without electricity AMS-I.D. Grid connected renewable electricity generation AMS-I.F. Renewable electricity generation for captive use and mini-grid AMS-I.L. Electrification of rural communities using renewable energy	ACM0006 Electricity and heat generation from biomass ACM0007 Conversion from single cycle to combined cycle power generation ACM0012 Waste energy recovery ACM0017 Production of biofuel ACM0018 Electricity generation from biomass in power-only plants ACM0022 Alternative waste treatment processes

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
					ACM0002 Grid-connected electricity generation from renewable sources
2	Energy Demand	-	-	-	ACM0009 Fuel switching from coal or petroleum fuel to natural gas ACM0011 Fuel switching from coal and/or petroleum fuels to natural gas in existing power plants for electricity generation
3	Energy Demand	VM0008 Weatherization of Single Family and Multi-Family Buildings VM0025 Campus Clean Energy and Energy Efficiency VMR0010 Electricity Supply for Ships VM0050 Energy Efficiency and Fuel-Switch Measure in Cookstoves	-	AMS-II.C. Demand-side energy efficiency activities for specific technologies AMS-II.J. Demand-side activities for efficient lighting technologies AMS-II.S. Energy efficiency in motor systems AMS-III.AR. Substituting fossil fuel-based lighting with LED/CFL lighting systems	ACM0003 Partial substitution of fossil fuels in cement or quicklime manufacture

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
				AMS-III.AV. Low greenhouse gas emitting safe drinking water production systems	
4	Manufacturing Industries	VM0043 CO ₂ Utilization in Concrete Production VMR0009 Revision to AM0057 Avoided Emissions from Biomass Wastes through Use as Feed Stock in Pulp and Paper, Cardboard, Fibreboard or Bio-oil Production	AM0036 Use of biomass in heat generation equipment AM0070 Manufacturing of energy efficient domestic refrigerators	AMS-II.D. Energy efficiency and fuel switching measures for industrial facilities AMS-III.Q. Waste energy recovery AMS-III.Z. Fuel switch, process improvement and energy efficiency in brick manufacture AMS-III.B. Switching fossil fuels	ACM0003 Partial substitution of fossil fuels in cement or quicklime manufacture ACM0012 Waste energy recovery
5	Chemical Industry	-	AM0028 N ₂ O destruction in the tail gas of Caprolactam production plants AM0124 Hydrogen production from electrolysis of water	-	ACM0017 Production of biofuel
6	Construction	VM0039 Methodology for Use of Foam Stabilized Base and Emulsion Asphalt	-	-	

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
		Mixtures in Pavement Application VMR0012 Production of Geopolymer Cement			-
7	Transport	VM0019 Fuel Switch from Gasoline to Ethanol in Flex-Fuel Vehicle Fleets VM0038 Methodology for Electric Vehicle Charging Systems VMR0004 Improved Efficiency of Fleet Vehicles (Revisions to AMS-III.BC to Include mobile machinery) VMR0010 Electricity Supply for Ships	AM0090 Modal shift in transportation of cargo from road transportation to water or rail transportation	AMS-III.AQ. Introduction of Bio-CNG in transportation applications AMS-III.BM. Lightweight two and three wheeled personal transportation AMS-III.C. Emission reductions by electric and hybrid vehicles	ACM0016 Mass Rapid Transit projects ACM0017 Production of biofuel
8	Mining/ Mineral Production	-	AM0064 Capture and utilisation or destruction of mine methane (excluding coal mines) or non-mine methane	-	ACM0003 Partial substitution of fossil fuels in cement or quicklime manufacture ACM0008 Abatement of methane from coal mines

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
9	Metal Production	-	AM0059 Reduction in GHGs emission from primary aluminium smelters	-	-
10	Fugitive Emissions – from fuels (solid, oil and gas)	-	AM0009 Recovery and utilization of gas from oil fields that would otherwise be flared or vented AM0023 Leak detection and repair in gas production, processing, transmission, storage and distribution systems and in refinery facilities AM0064 Capture and utilisation or destruction of mine methane (excluding coal mines) or non mine methane	-	ACM0008 Abatement of methane from coal mines
11	Fugitive Emissions – from industrial gases (halocarbons and sulphur hexafluoride)	VM0001 Refrigerant Leak Detection VM0016 Recovery and Destruction of Ozone-Depleting Substances (ODS)	-	-	-
12	Solvents Use	-	-	-	-

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
13	Waste Handling and Disposal	<p>VM0018 Energy Efficiency and Solid Waste Diversion Activities Within a Sustainable Community</p> <p>VM0044 Methodology for Biochar Utilization in Soil and Non-Soil Applications</p> <p>VM0046 Methodology for Reducing Food Loss and Waste</p> <p>VMR0007 Revision to AMS-III.AJ. Recovery and Recycling of Materials from Solid Wastes</p> <p>VMR0008 Revision to AMS-III.BA. Recovery and Recycling of Materials From E-waste</p> <p>VMR0009 Revision to AM0057 Avoided Emissions from Biomass Wastes through Use as Feed Stock in Pulp and Paper,</p>	<p>AM0073 GHG emission reductions through multi-site manure collection and treatment in a central plant</p> <p>AM0080 Mitigation of greenhouse gases emissions with treatment of wastewater in aerobic wastewater treatment plants</p>	<p>AMS-III.AO. Methane recovery through controlled anaerobic digestion</p> <p>AMS-III.E. Avoidance of methane production from decay of biomass through controlled combustion, gasification or mechanical/thermal treatment</p> <p>AMS-III.F. Avoidance of methane emissions through composting</p> <p>AMS-III.G. Landfill methane recovery</p> <p>AMS-III.H. Methane recovery in wastewater treatment</p> <p>AMS-III.I. Avoidance of methane production in wastewater treatment through replacement of anaerobic systems by aerobic systems</p> <p>AMS-III.Y.</p>	<p>ACM0001 Flaring or use of landfill gas</p> <p>ACM0010 GHG emission reductions from manure management systems</p> <p>ACM0014 Treatment of wastewater</p> <p>ACM0022 Alternative waste treatment processes</p>

Scope No.	Sectoral Scope/Category	VCS Methodology	CDM Methodology (Eligible under VCS)		
			Large-scale	Small-scale	Consolidated
		Cardboard, Fibreboard or Bio-oil Production		Methane avoidance through separation of solids from wastewater or manure treatment systems	
16	Carbon Capture and Storage (CCS)	VM0049 Carbon Capture and Storage (CCS)	-	-	-

Source: Illustration based on Verra and [CDM Methodology Booklet \(14th Edition, December 2022\)](#)

Note: Per the VCS Standard, v4.7, Section 3.22.3(4), Verra has set the grace period for inactivated CDM methodologies to twelve (12) months after the date they were inactivated. Project proponents that have already requested listing on the Verra Registry before the inactivation date may complete validation within twelve (12) months after the inactivation date.

4.6.2 Gold Standard – Approved Methodologies under GS for each sectoral scope

Exhibit 51 outlines the sectoral scopes and methodologies under GS and eligible CDM methodologies associated with these scopes. The list of the approved GS methodologies for eligible projects can be referred at [Gold Standard Eligible Impact Quantification Methodologies \(Version 2.8, dated 15.10.2024\)](#). CDM methodologies are eligible for use under GS, however, the additional GS applicability criteria found in the tool should be considered. See Column H in the CDM methodology tabs for additional GS applicability criteria/requirements/remarks.

Exhibit 51: Approved methodologies under the GS and CDM programmes.

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
Nature-Based					
Agriculture, Forestry and Other Land Use (AFOLU)					
14	Afforestation and Reforestation/Forestry	<ul style="list-style-type: none"> ➤ Afforestation – Reforestation GHG Emissions Reduction & Sequestration Methodology ➤ Sustainable Management of Mangroves 	-	-	-
15	Agriculture	<ul style="list-style-type: none"> ➤ Soil Organic Carbon Activity Module for Zero Tillage ➤ Soil Organic Carbon Activity Module for Enhancing Carbon Stocks in Managed Pasture ➤ Soil Organic Carbon Framework Methodology ➤ Soil Organic Carbon Activity Module – Biostimulants for Soil Revitalisation ➤ Soil Organic Carbon Activity Module: Increasing Soil Carbon 	<p>AM0073 GHG emission reductions through multi-site manure collection and treatment in a central plant</p> <p>AM0089 Production of diesel using a mixed feedstock of gasoil and vegetable oil</p>	<p>AMS-III.A. Offsetting of synthetic nitrogen fertilizers by inoculant application in legumes-grass rotations on acidic soils on existing cropland</p> <p>AMS-III.BE. (Agriculture) Avoidance of methane and nitrous oxide emissions from sugarcane pre-harvest open burning through mulching</p> <p>AMS-III.BF. (Agriculture) Reduction of N₂O emissions from use of Nitrogen Use Efficient (NUE) seeds that require less fertilizer application</p> <p>AMS-III.BK.</p>	<p>ACM0010 GHG emission reductions from manure management systems</p>

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
		<p>Through Improved Tillage Practices</p> <ul style="list-style-type: none"> ➤ Soil Organic Carbon Activity Module for Application of Organic Soil Improvers from Pulp and Paper Mill Sludges ➤ Soil Organic Carbon Activity Module for Cover Crops ➤ Methane Emission Reduction by Adjusted Water Management Practice in Rice Cultivation ➤ Methane Emissions Reduction from Enteric Fermentation in Beef Cattle Through Application of Feed Supplements ➤ Reducing Methane Emissions from Enteric Fermentation in Dairy Cows Through Application of Feed Supplements 		<p>Strategic feed supplementation in smallholder dairy sector to increase productivity</p> <p>AMS-III.D. Methane recovery in animal manure management systems</p> <p>AMS-III.R. Methane recovery in agricultural activities at households and small farms</p> <p>AMS-III.F. (Agriculture) Avoidance of methane emissions through composting</p>	

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
		<ul style="list-style-type: none"> ➤ Gold Standard Agriculture Smallholder Dairy Methodology ➤ Water and Erosion Impact Assessment of Sustainable Agricultural Land Management Projects 			
Technology-Based					
1	Energy Industries (Renewable/ Non-renewable sources)	<ul style="list-style-type: none"> ➤ Emission Reduction by Shore-side or Off-shore Electricity Supply System ➤ Methodology For Animal Manure Management and Biogas Use for Thermal Energy Generation ➤ Suppressed Demand Methodology Micro-Scale Electrification and Energization ➤ Suppressed Demand Small-Scale Methodology For Energy Use For the Processing of Agricultural Products 	<p>AM0007 Analysis of the least-cost fuel option for seasonally-operating biomass cogeneration plants</p> <p>AM0019 Renewable energy projects replacing part of the electricity production of one single fossil fuel fired power plant that stands alone or supplies to a grid, excluding biomass projects</p> <p>AM0123 Renewable energy generation for captive use</p> <p>AM0026 Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile</p>	<p>AMS-I.A. Electricity generation by the user</p> <p>AMS-I.B. Mechanical energy for the user with or without electrical energy</p> <p>AMS-I.C. Thermal energy production with or without electricity</p> <p>AMS-I.D. Grid connected renewable electricity generation</p> <p>AMS-I.E. Switch from non-renewable biomass for thermal applications by the user</p> <p>AMS-I.F.</p>	<p>ACM0006 Electricity and heat generation from biomass</p> <p>ACM0007 Conversion from single cycle to combined cycle power generation</p> <p>ACM0012 Waste energy recovery</p> <p>ACM0017 Production of biofuel</p> <p>ACM0018 Electricity generation from biomass in power-only plants</p> <p>ACM0020 Co-firing of biomass residues for heat generation and/or</p>

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			<p>or in countries with merit order-based dispatch grid</p> <p>AM0036 Use of biomass in heat generation equipment</p> <p>AM0048 New cogeneration project activities supplying electricity and heat to multiple customers</p> <p>AM0049 Methodology for gas based energy generation in an industrial facility</p> <p>AM0052 Increased electricity generation from existing hydropower stations through Decision Support System optimization</p> <p>AM0053 Biogenic methane injection to a natural gas distribution grid</p> <p>AM0055 Recovery and utilization of waste gas in refinery or gas plant</p> <p>AM0056</p>	<p>Renewable electricity generation for captive use and mini-grid</p> <p>AMS-I.G. Plant oil production and use for energy generation in stationary applications</p> <p>AMS-I.H. Biodiesel production use for energy generation in stationary applications</p> <p>AMS-I.I. Biogas/biomass thermal applications for households/small users</p> <p>AMS-I.J. Solar water heating systems (SWH)</p> <p>AMS-I.K. Solar cookers for households</p> <p>AMS-I.L. Electrification of rural communities using renewable energy</p> <p>AMS-I.M.</p>	<p>electricity generation in grid connected power plants</p> <p>ACM0022 Alternative waste treatment processes</p> <p>ACM0023 Introduction of an efficiency improvement technology in a boiler</p> <p>ACM0024 Natural gas substitution by biogenic methane produced from the anaerobic digestion of organic waste</p> <p>ACM0002 Grid-connected electricity generation from renewable sources</p>

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			<p>Efficiency improvement by boiler replacement or rehabilitation and optional fuel switch in fossil fuel-fired steam boiler systems</p> <p>AM0058 Introduction of a district heating system</p> <p>AM0069 Biogenic methane use as feedstock and fuel for town gas production</p> <p>AM0072 Fossil fuel displacement by geothermal resources for space heating</p> <p>AM0075 Methodology for collection, processing and supply of biogas to end-users for production of heat</p> <p>AM0076 Implementation of fossil fuel trigeneration systems in existing industrial facilities</p> <p>AM0081</p>	<p>Solar power for domestic aircraft at-gate operations</p> <p>AMS-II.B. Supply side energy efficiency improvements – generation</p> <p>AMS-II.H. Energy efficiency measures through centralization of utility provisions of an industrial facility</p> <p>AMS-III.AH. Shift from high carbon-intensive fuel mix ratio to low carbon-intensive fuel mix ratio</p> <p>AMS-III.AL. Conversion from single cycle to combined cycle power generation</p> <p>AMS-III.BL. Integrated methodology for electrification of communities</p>	

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			<p>Flare or vent reduction at coke plants through the conversion of their waste gas into dimethyl ether for use as a fuel</p> <p>AM0084 Installation of cogeneration system supplying electricity and chilled water to new and existing consumers</p> <p>AM0089 Production of diesel using a mixed feedstock of gasoil and vegetable oil</p> <p>AM0094 Distribution of biomass based stove and/or heater for household or institutional use</p> <p>AM0095 Waste gas based combined cycle power plant in a Greenfield iron and steel plant</p> <p>AM0098</p>		

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			Utilization of ammonia-plant off gas for steam generation AM0100 Integrated Solar Combined Cycle (ISCC) projects AM0103 Renewable energy power generation in isolated grids		
2	Energy Distribution	Not Available at the time of VCM Handbook preparation	AM0069 Biogenic methane use as feedstock and fuel for town gas production AM0075 Methodology for collection, processing and supply of biogas to end-users for production of heat	AMS-II.A. Supply side energy efficiency improvements – transmission and distribution AMS-II.T. Emission reduction through reactive power compensation in power distribution network AMS-III.A.G. Switching from high carbon intensive grid electricity to low carbon intensive fossil fuel AMS-III.A.W. Electrification of rural communities by grid extension AMS-III.B.B. Electrification of communities through grid	ACM0009 Fuel switching from coal or petroleum fuel to natural gas

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
				extension or construction of new mini-grids AMS-III.BL Integrated methodology for electrification of communities	
3	Energy Demand	<ul style="list-style-type: none"> ➤ Emission Reductions from Safe Drinking Water Supply ➤ Reduced Emissions from Cooking and Heating-Technologies and Practices to Displace Decentralised Thermal Energy Consumption (TPDDTEC) ➤ The Gold Standard Simplified Methodology for Clean and Efficient Cookstoves ➤ Methodology to Estimate and Verify Adalys from Cleaner Household Air ➤ Methodology For Metered & Measured Energy Cooking Devices 	AM0017 Steam system efficiency improvements by replacing steam traps and returning condensate AM0018 Baseline methodology for steam optimization systems AM0020 Baseline methodology for water pumping efficiency improvements AM0044 Energy efficiency improvement projects – boiler rehabilitation or replacement in industrial and district heating sectors AM0046 Distribution of efficient light bulbs to households	AMS-I.I. Biogas/biomass thermal applications for households/small users AMS-II.C. Demand-side energy efficiency activities for specific technologies AMS-II.E. Energy efficiency and fuel switching measures for buildings AMS-II.F. Energy efficiency and fuel switching measures for agricultural facilities and activities AMS-II.G. Energy efficiency measures in thermal applications of non-renewable biomass	ACM0003 Partial substitution of fossil fuels in cement or quicklime manufacture ACM0005 Increasing the blend in cement production

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
		<ul style="list-style-type: none"> ➤ Gold Standard Quantification of Climate-Related Emission Reductions of Black Carbon and Co-emitted Species Due to the Replacement of Less Efficient Cookstoves with Improved Efficiency Cookstoves ➤ Indicative Program, Baseline and Monitoring Methodology for the Large Scale Supply & Distribution of Efficient Light Bulbs, Shower Heads and Other Water Saving Devices to Households ➤ Suppressed Demand Small-Scale Methodology for Low GHG Food Preservation 	<p>AM0060 Power saving through replacement by energy efficient chillers</p> <p>AM0068 Methodology for improved energy efficiency by modifying ferroalloy production facility</p> <p>AM0086 Distribution of low GHG emitting water purification systems for safe drinking water</p> <p>AM0088 Air separation using cryogenic energy recovered from the vaporization of LNG</p> <p>AM0091 Energy efficiency technologies and fuel switching in new and existing buildings</p> <p>AM0105</p>	<p>AMS-II.J. Demand-side activities for efficient lighting technologies</p> <p>AMS-II.K. Installation of co-generation or tri-generation systems supplying energy to commercial building</p> <p>AMS-II.L. Demand-side activities for efficient outdoor and street lighting technologies</p> <p>AMS-II.M. Demand-side energy efficiency activities for installation of low-flow hot water savings devices</p> <p>AMS-II.N. Demand-side energy efficiency activities for installation of energy efficient lighting and/or controls in buildings</p> <p>AMS-II.O.</p>	

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			<p>Energy efficiency in data centres through dynamic power management</p> <p>AM0113 Distribution of compact fluorescent lamps (CFL) and light-emitting diode (LED) lamps to households</p> <p>AM0117 Introduction of a new district cooling system</p> <p>AM0120 Energy-efficient refrigerators and air-conditioners</p>	<p>Dissemination of energy efficient household appliances</p> <p>AMS-II.P. Energy efficient pump-set for agriculture use</p> <p>AMS-II.Q. Energy efficiency and/or energy supply projects in commercial buildings</p> <p>AMS-II.R. Energy efficiency space heating measures for residential buildings</p> <p>AMS-II.S. Energy efficiency in motor systems</p> <p>AMS-III.AE. Energy efficiency and renewable energy measures in new residential buildings</p> <p>AMS-III.AL. Conversion from single cycle to combined cycle power generation</p> <p>AMS-III.AR.</p>	

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
				Substituting fossil fuel based lighting with LED/CFL lighting systems AMS-III.AV. Low greenhouse gas emitting safe drinking water production systems AMS-III.X. Energy Efficiency and HFC-134a recovery in residential refrigerators	
4	Manufacturing Industries	Not Available at the time of VCM Handbook preparation	AM0007 Analysis of the least-cost fuel option for seasonally-operating biomass cogeneration plants AM0036 Use of biomass in heat generation equipment AM0049 Methodology for gas based energy generation in an industrial facility AM0055 Recovery and utilization of waste gas in refinery or gas plant AM0057	AMS-II.D. Energy efficiency and fuel switching measures for industrial facilities AMS-II.H. Energy efficiency measures through centralization of utility provisions of an industrial facility AMS-II.I. Efficient utilization of waste energy in industrial facilities AMS-III.AD. Emission reductions in hydraulic lime production AMS-III.AS.	ACM0003 Partial substitution of fossil fuels in cement or quicklime manufacture ACM0005 Increasing the blend in cement production ACM0012 Waste energy recovery ACM0015 Emission reductions from raw material switch in clinker production

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			<p>Avoided emissions from biomass wastes through use as feedstock in pulp and paper, cardboard, fibreboard or bio-oil production</p> <p>AM0070 Manufacturing of energy efficient domestic refrigerators</p> <p>AM0095 Waste gas based combined cycle power plant in a Greenfield iron and steel plant</p> <p>AM0106 Energy efficiency improvements of a lime production facility through installation of new kilns</p> <p>AM0109 Introduction of hot supply of direct reduced iron in electric arc furnaces</p> <p>AM0114 Shift from electrolytic to catalytic process for recycling of chlorine from</p>	<p>Switch from fossil fuel to biomass in existing manufacturing facilities for non-energy applications.</p> <p>AMS-III.BD. GHG emission reduction due to supply of molten metal instead of ingots for aluminium castings</p> <p>AMS-III.BG. Emission reduction through sustainable charcoal production and consumption</p> <p>AMS-III.K. Avoidance of methane release from charcoal production</p> <p>AMS-III.L. Avoidance of methane production from biomass decay through controlled pyrolysis</p> <p>AMS-III.P. Recovery and utilization of waste gas in refinery facilities</p> <p>AMS-III.Q. Waste energy recovery</p>	

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			hydrogen chloride gas in isocyanate plants	AMS-III.V. Decrease of coke consumption in blast furnace by installing dust/sludge recycling system in steel works AMS-III.Z. Fuel switch, process improvement and energy efficiency in brick manufacture	
5	Chemical Industry	Not Available at the time of VCM Handbook preparation	AM0027 Substitution of CO ₂ from fossil or mineral origin by CO ₂ from biogenic residual sources in the production of inorganic compounds AM0053 Biogenic methane injection to a natural gas distribution grid AM0055 Recovery and utilization of waste gas in refinery or gas plant AM0063	AMS-III.AC. Electricity and/or heat generation using fuel cell AMS-III.AI. Emission reductions through recovery of spent sulphuric acid AMS-III.AJ. Recovery and recycling of materials from solid wastes AMS-III.J. Avoidance of fossil fuel combustion for CO ₂ production to be used as raw material for industrial processes	ACM0017 Production of biofuel

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			<p>Recovery of CO₂ from tail gas in industrial facilities to substitute the use of fossil fuels for production of CO₂</p> <p>AM0069 Biogenic methane use as feedstock and fuel for town gas production</p> <p>AM0075 Methodology for collection, processing and supply of biogas to end-users for production of heat</p> <p>AM0081 Flare or vent reduction at coke plants through the conversion of their waste gas into dimethyl ether for use as a fuel</p> <p>AM0089 Production of diesel using a mixed feedstock of gasoil and vegetable oil</p> <p>AM0098 Utilization of ammonia-plant off gas for steam generation</p> <p>AM0114 Shift from electrolytic to catalytic process for</p>	<p>AMS-III.M. Reduction in consumption of electricity by recovering soda from paper manufacturing process</p> <p>AMS-III.O. Hydrogen production using methane extracted from biogas</p>	

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			recycling of chlorine from hydrogen chloride gas in isocyanate plants AM0124 Hydrogen production from electrolysis of water		
6	Construction	Not Available at the time of VCM Handbook preparation	-	AMS-III.BH. Displacement of production of brick and cement by manufacture and installation of gypsum concrete wall panels	-
7	Transport	<ul style="list-style-type: none"> ➤ Methodology for Reducing Methane Emissions from Combustion Engine Exhaust ➤ Two and Three Wheeled Personal Transportation ➤ Methodology For Marine Fuels and Biobunkers ➤ Retrofit Energy Efficiency Measures in Shipping ➤ Methodology for Reducing Methane 	<p>AM0031 Bus rapid transit projects</p> <p>AM0090 Modal shift in transportation of cargo from road transportation to water or rail transportation</p> <p>AM0101 High speed passenger rail systems</p> <p>AM0116 Electric taxiing systems for airplanes</p>	<p>AMS-I.M. Solar power for domestic aircraft at-gate operations</p> <p>AMS-III.AA. Transportation energy efficiency activities using retrofit technologies</p> <p>AMS-III.AK. Biodiesel production and use for transport applications</p> <p>AMS-III.AP. Transport energy efficiency activities using post - fit Idling Stop device</p> <p>AMS-III.AQ.</p>	<p>ACM0016 Mass Rapid Transit projects</p> <p>ACM0017 Production of biofuel</p>

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
		Emissions from Combustion Engine Exhaust		<p>Introduction of Bio-CNG in transportation applications</p> <p>AMS-III.AT. Transportation energy efficiency activities installing digital tachograph systems to commercial freight transport fleets</p> <p>AMS-III.AY. Introduction of LNG buses to existing and new bus routes</p> <p>AMS-III.BC. Emission reductions through improved efficiency of vehicle fleets</p> <p>AMS-III.BM. Lightweight two and three wheeled personal transportation</p> <p>AMS-III.BN. Efficient operation of public transportation</p> <p>AMS-III.BO. Trip avoidance through equipment improvement of freight transport</p> <p>AMS-III.BP.</p>	

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
				<p>Emission reduction by shore-side electricity supply system</p> <p>AMS-III.BQ. Hydrogen fuel cell vehicles</p> <p>AMS-III.C. Emission reductions by electric and hybrid vehicles</p> <p>AMS-III.S. Introduction of low-emission vehicles/technologies to commercial vehicle fleets</p> <p>AMS-III.T. Plant oil production and use for transport applications</p> <p>AMS-III.U. Cable Cars for Mass Rapid Transit System (MRTS)</p>	
8	Mining/Mineral Production	Not Available at the time of VCM Handbook preparation	<p>AM0064 Capture and utilisation or destruction of mine methane (excluding coal mines) or non-mine methane</p>	<p>AMS-III.W. Methane capture and destruction in non-hydrocarbon mining activities</p>	<p>ACM0003 Partial substitution of fossil fuels in cement or quicklime manufacture</p> <p>ACM0005 Increasing the blend in cement production</p> <p>ACM0015</p>

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
					Emission reductions from raw material switch in clinker production
9	Metal Production	Not Available at the time of VCM Handbook preparation	<p>AM0038 Methodology for improved electrical energy efficiency of an existing submerged electric arc furnace used for the production of silicon and ferro alloys</p> <p>AM0059 Reduction in GHGs emission from primary aluminium smelters</p> <p>AM0066 GHG emission reductions through waste heat utilisation for pre-heating of raw materials in sponge iron manufacturing process</p> <p>AM0068 Methodology for improved energy efficiency by modifying ferroalloy production facility</p> <p>AM0082 Use of charcoal from planted renewable biomass in the iron ore reduction process through the establishment of a new iron ore reduction system</p>	<p>AMS-III.V. Decrease of coke consumption in blast furnace by installing dust/sludge recycling system in steel works</p>	-

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
			AM0109 Introduction of hot supply of direct reduced iron in electric arc furnaces		
10	Fugitive Emissions – from fuels (solid, oil and gas)	Not Available at the time of VCM Handbook preparation	AM0064 Capture and utilisation or destruction of mine methane (excluding coal mines) or non-mine methane AM0122 Recovery of methane-rich vapours from hydrocarbon storage tanks	AMS-III.W. Methane capture and destruction in non-hydrocarbon mining activities	
11	Fugitive Emissions – from industrial gases (halocarbons and sulphur hexafluoride)	Not Available at the time of VCM Handbook preparation	–	AMS-III.X. Energy Efficiency and HFC-134a recovery in residential refrigerators	–
12	Solvents Use	Not Available at the time of VCM Handbook preparation	–	–	–
13	Waste Handling and Disposal	<ul style="list-style-type: none"> ➤ Reduction in Methane Emissions from Landfills Through Decentralised Organic Waste Processing ➤ Methodology For Animal Manure Management and Biogas Use for 	AM0057 Avoided emissions from biomass wastes through use as feedstock in pulp and paper, cardboard, fibreboard or bio-oil production AM0073	AMS-III.AF. Avoidance of methane emissions through excavating and composting of partially decayed municipal solid waste (MSW) AMS-III.AJ. Recovery and recycling of materials from solid wastes	ACM0001 Flaring or use of landfill gas ACM0010 GHG emission reductions from manure management systems ACM0014 Treatment of wastewater

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
		<p>Thermal Energy Generation</p> <p>➤ Methodology for Collection of Macroalgae to Avoid Emissions from Decomposition</p>	<p>GHG emission reductions through multi-site manure collection and treatment in a central plant</p> <p>AM0080 Mitigation of greenhouse gases emissions with treatment of wastewater in aerobic wastewater treatment plants</p> <p>AM0083 Avoidance of landfill gas emissions by in-situ aeration of landfills</p>	<p>AMS-III.AO. Methane recovery through controlled anaerobic digestion</p> <p>AMS-III.BA. Recovery and recycling of materials from E-waste</p> <p>AMS-III.BE. Avoidance of methane and nitrous oxide emissions from sugarcane pre-harvest open burning through mulching</p> <p>AMS-III.E. Avoidance of methane production from decay of biomass through controlled combustion, gasification or mechanical/thermal treatment</p> <p>AMS-III.F. Avoidance of methane emissions through composting</p> <p>AMS-III.G. Landfill methane recovery</p> <p>AMS-III.H.</p>	<p>ACM0022 Alternative waste treatment processes</p>

Scope No.	Sectoral Scope/Category	GS Methodology	CDM Methodology (Eligible under GS)		
			Large-scale	Small-scale	Consolidated
				<p>Methane recovery in wastewater treatment</p> <p>AMS-III.I. Avoidance of methane production in wastewater treatment through replacement of anaerobic systems by aerobic systems</p> <p>AMS-III.Y. Methane avoidance through separation of solids from wastewater or manure treatment systems</p>	
16	Carbon Capture and Storage (CCS)	<ul style="list-style-type: none"> ➤ Methodology for Biomass Fermentation with Carbon Capture and Geologic Storage ➤ Carbon Sequestration Through Accelerated Carbonation of Concrete Aggregate 	-	-	-

Source: Illustration based on [Gold Standard Eligible Impact Quantification Methodologies \(Version 2.8, dated 15.10.2024\)](#) and [SDG Impact Quantification Methodologies](#)

4.7 Double Counting

4.7.1 Verra – Double Counting and Projects Registered under Other GHG Programmes

With reference to Section 3.23 of the [VCS Standard, version 4.7](#), projects may be registered under both the VCS Program and another GHG programme (which may be an approved GHG programme such as the Clean Development Mechanism (CDM), Joint Implementation (JI), Climate Action Reserve or any other GHG programme). However, reductions and removals must not be double counted within or across GHG programmes. Projects are not eligible to seek registration under the VCS Program if registered and active under another GHG programme.

Project proponents shall not seek credit for the same GHG emission reduction or carbon dioxide removals under the VCS Program and another GHG programme. Besides that, projects issuing GHG credits under both the VCS Program and another GHG programme shall also conform with the rules and requirements in the VCS Program document the [Registration and Issuance Process](#). In addition, there shall be other conformances to be complied with for AFOLU projects registered under another GHG programme, as further explained in [Section 3.2.3, VCS Standard, version 4.7](#).

For the CDM, the following applies.

1. CDM – Without Carbon Credits Issued

Project proponents with projects registered under the CDM can potentially be suppliers of standardised carbon contracts for trading on BCX, provided that they are able to convert their issued Certified Emission Reductions (CERs) to Verified Carbon Units (VCUs) in the VCS registry and the credits' vintage is from 2016 onwards.

With reference to the VCS Standard, version 4.7 (Appendix 2), projects registered under another GHG programme (in this case, CDM), with activities that are included within the scope of the VCS Program, shall only be eligible to complete a gap validation and/or register under the VCS Program where the following applies:

Project that does not include afforestation and/or reforestation activities

The project must have an original project crediting period start date on or after 1 January 2016 with another GHG programme (in this case, CDM); or

Where the project has an original project crediting period start date from 1 January 2013 to 31 December 2015, the project must have issued credits during the period 1 January 2016 to 5 March 2021 or must have a status of "issuance requested" on the relevant GHG programme registry (in this case, CDM) by 5 March 2021.

Project with afforestation and/or reforestation activities

The project must have been registered under another GHG programme (in this case, CDM) on or after 1 January 2013.

Furthermore, the following applies with respect to vintages:

For a project that does not include afforestation and/or reforestation activities, only emission reductions with vintages beginning on or after 1 January 2016 are eligible for VCU issuance. For a project with afforestation and/or reforestation activities, only emission reductions with vintages beginning on or after 1 January 2013 are eligible for VCU issuance.

2. CDM – With Carbon Credits Issued

With reference to the [Registration and Issuance Process](#), version 4.6 (Appendix 1), project GHG credits issued to projects registered under another GHG programme (in this case, CDM), with activities that are included within the scope of the VCS Program, are only eligible for conversion into VCUs where one (1) of the following is demonstrated:

For GHG credits issued to a project that does not include afforestation and/or reforestation activities

The project shall have an original project crediting period start date on or after 1 January 2016 with another GHG programme (in this case, CDM); or

Where the project has an original project crediting period start date from 1 January 2013 to 31 December 2015, the project shall have issued credits during the period 1 January 2016 to 5 March 2021, or shall have a status of "issuance requested" on the relevant GHG programme registry (in this case, CDM) by 5 March 2021.

For GHG credits issued to a project with afforestation and/or reforestation activities

The project shall have been registered under another GHG programme (in this case, CDM) on or after 1 January 2013.

Furthermore, the following applies with respect to vintages:

For GHG credits issued to a project that does not include afforestation and/or reforestation activities, only GHG credits with vintages beginning on or after 1 January 2016 are eligible for conversion into VCUs. For GHG credits issued to a project with afforestation and/or reforestation activities, only GHG credits with vintages beginning on or after 1 January 2013 are eligible for conversion into VCUs.

4.7.2 Gold Standard – Double Counting

Referring to the [Gold Standard Double Counting Guideline](#) which addresses the risk of double counting in GS projects, especially in Kyoto Annex B countries, where a single emission reduction could be inadvertently claimed by both the GS credit and a host country or a second buyer. This situation can undermine the credibility of both the GS credit and the international accounting standards.

To mitigate these risks, the guideline suggests two main approaches:

1. The project developer can provide evidence to GS proving that their issuance is not at risk of double counting. Approval of such cases shall be at the discretion of the Gold Standard Technical Advisory Committee (TAC)

2. The project developer can cancel a valid or eligible unit within the host country or international accounting mechanism to prevent double counting.

This approach ensures the integrity of the international emissions accounting system by maintaining a balanced accounting framework, even when cancelling units from the host country is not feasible.

4.8 Other Requirements

When the project proponents have decided to proceed with registering their projects with VCS or GS, i.e. after formulating ideas and identifying suitable methodologies, the eligibility criteria and the applicability conditions of the selected methodologies shall be adhered to. This information is provided in the specific methodology documents available on Verra, Gold Standard or the CDM website. Besides that, other requirements shall be followed for projects to be registered in Malaysia.

Below is a list that highlights some of the important points to note from the specific methodologies and other requirements in Malaysia. Most of the project proponents in Malaysia have adopted these methodologies, which are focused on energy (renewable/non-renewable), waste handling and disposal and AFOLU.

4.8.1 AMS-I.C. Thermal energy production with or without electricity

This methodology comprises renewable energy technologies (e.g. solar thermal water heaters and dryers, solar cookers, energy derived from renewable biomass and other technologies that provide thermal energy that displaces fossil fuel) that supply users, i.e. residential, industrial or commercial facilities.

For project activities implemented in existing facilities under AMS-I.C. Thermal energy production with or without electricity baseline calculations shall be based on operational data on energy use (e.g. electricity, fossil fuel) and plant output (e.g. thermal and/or electrical energy) using:

- a) The most recent three (3) years' operational data immediately prior to the start date of the project activity in the case of existing facilities which have more than three (3) years of operation history;
- b) A minimum of the most recent one (1) year's data in the case of existing facilities that have more than three (3) years of operation history but do not have three (3) years' operational data; or
- c) A performance test/measurement campaign carried out prior to the implementation of the project activity in the case of existing facilities that have more than three (3) years of operation history but do not have operational data/information such as efficiency or energy consumption and output, or the available data is not reliable due to various factors such as the use of imprecise or non-calibrated measuring equipment.

4.8.2 AMS-I.D. Grid connected renewable electricity generation

Project activities that consist of renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass, which supply electricity to a national or a regional grid or supply electricity to an identified consumer facility via a

national/regional grid through a contractual arrangement such as wheeling (see Exhibit 52). Combined heat and power (co-generation) systems are not eligible under this category:

- ✓ If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. However, if the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.
- ✓ In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.
- ✓ In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.

Exhibit 52: Grid connected renewable energy produced from biogas engines.



Photo credit: Eco-Ideal Consulting Sdn Bhd.

4.8.3 AMS-III.E. Avoidance of methane production from decay of biomass through controlled combustion, gasification or mechanical/thermal treatment

Avoidance of methane production from decay of biomass through controlled combustion, gasification or mechanical/thermal treatment, apart from solid waste disposal sites (SWDS) and stockpiles (a pile of solid waste (not buried below ground) (see Exhibit 53). Anaerobic conditions are not assured in a stockpile with low volume-to-surface area ratios (less than 1.5) because the waste may be exposed to higher aeration), which can be characterised as waste disposal sites that consist of waste of a homogenous nature with similar origin (e.g. rice husks, empty fruit bunches of oil palm, sawmill waste, etc.) are also applicable under this methodology but their calculations for baseline emissions, where the baseline is stockpiling of the waste, differ and shall be followed.

Exhibit 53: Empty fruit bunches (EFBs) are a biomass source used to produce pellets (a source of energy) in Sabah.



Photo credit: Eco-Ideal Consulting Sdn Bhd.

4.8.4 AMS-III.F. Avoidance of methane emissions through composting

Projects under this methodology adopt measures to avoid the emissions of methane to the atmosphere from biomass or other organic matter that would have otherwise been left to decay anaerobically in an SWDS, or an animal waste management system (AWMS) or in a wastewater treatment system (WWTS). In the project activity, controlled aerobic treatment by composting of biomass is introduced.

Project activities that increase capacity utilisation at existing facilities under AMS-III.F. Avoidance of methane emissions through composting are required to demonstrate that special efforts have been made to increase the capacity utilisation, that the existing facility meets all applicable laws and regulations and that the existing facility is not included in a separate project activity. The special efforts should be identified and described. This methodology is also applicable to co-composting wastewater and solid biomass waste but it has to be demonstrated that the organic matter would have been left to decay anaerobically, otherwise baseline emissions related to such organic matter shall be accounted for as zero (0).

4.8.5 AMS-III.H. Methane recovery in wastewater treatment

This methodology comprises measures that recover biogas from biogenic organic matter in wastewater by means of one (1), or a combination, of the following options:

- (a) Substitution of aerobic wastewater or sludge treatment systems with anaerobic systems with biogas recovery and combustion;
- (b) Introduction of anaerobic sludge treatment system with biogas recovery and combustion in a wastewater treatment plant without sludge treatment;
- (c) Introduction of biogas recovery and combustion in a sludge treatment system;
- (d) Introduction of biogas recovery and combustion in an anaerobic wastewater treatment system such as an anaerobic reactor, lagoon, septic tank or an onsite industrial plant;
- (e) Introduction of anaerobic wastewater treatment with biogas recovery and combustion, with or without anaerobic sludge treatment, in an untreated wastewater stream;
- (f) Introduction of a sequential stage of wastewater treatment with biogas recovery and combustion, with or without sludge treatment, in an anaerobic wastewater treatment system without biogas recovery (e.g. introduction of treatment in an anaerobic reactor with biogas recovery as a sequential treatment step for the wastewater that is presently being treated in an anaerobic lagoon without methane recovery).

For a wastewater treatment plant that would like to be registered with AMS-III.H. Methane recovery in wastewater treatment and has been operating for at least three (3) years, and if one (1) year of historical data is not available, an ex ante measurement campaign shall be implemented to determine the required parameters (Chemical Oxygen Demand (COD) removal efficiency, specific energy consumption and specific sludge production). The measurement campaign shall be implemented in the baseline wastewater systems for at least ten (10) days. The measurements should be undertaken during a period that is representative of the typical operation conditions of the systems and the ambient conditions of the site (temperature, etc.) (see Exhibit 54).

According to the latest criteria for licence application to the Malaysian Palm Oil Board (MPOB), [*Kriteria dan Panduan Permohonan Lesen MPOB, Edisi Ketiga, 2022*](#) (page 21), all existing oil palm mills that apply for additional throughput shall install methane gas trapping or emissions avoidance facilities. However, effective from 2 May 2021, exemption is given to mills that process 270,000 mt FFB or below per year. **Any existing mills which apply with a yearly processing capacity of more than 270,000 mt FFB per year must install the biogas trapping facilities or methane gas emissions avoidance technology, or both, with 80% ($\pm 5\%$) consumption rate of POME produced.**

With reference to the VCS Standard, a project activity is additional if it can be demonstrated that the activity results in emission reductions or removals that are in excess of what would be achieved under a "business-as-usual" scenario and the activity would not have occurred in the absence of the incentive provided by the carbon markets. For palm oil mills that have applied for additional throughput and are required to install methane gas trapping or emissions avoidance facilities, the projects that have to follow the requirements are considered **not additional**.

Exhibit 54: Palm oil mill effluent (POME) treatment in a Johor palm oil mill by using anaerobic digester tanks.



Photo credit: Sungei Kahang Palm Oil Sdn Bhd.

4.8.6 ACM0001 Flaring or use of landfill gas

Project activities that include the destruction of methane emissions and the displacement of a more GHG-intensive service by capturing landfill gas from the landfill site and/or flaring it and/or using it to produce energy (i.e. electricity, thermal energy), and/or using it to supply consumers through a natural gas distribution network, dedicated pipeline or trucks, are eligible for ACM0001 Flaring or use of landfill gas (see Exhibit 55). However, project activities that have chosen this methodology are not permitted to be combined with other methodologies and are not applicable if the management of the SWDS in the project activity is deliberately changed during the crediting in order to increase methane generation compared to the situation prior to the implementation of the project activity.



Photo credit: Eco-Ideal Consulting Sdn Bhd.

4.8.7 VM0005 Methodology for Conversion of Low-Productive Forest to High-Productive Forest

This methodology facilitates the quantification of the net GHG benefits of Improved Forest Management (IFM) projects in natural evergreen tropical rainforests that achieve carbon benefits in one (1) of, or a combination of, two (2) activities:

- Avoiding emissions from the relogging of already logged-over forest; and
- Rehabilitation of previously logged-over forest by cutting climbers and vines, or liberation thinning or enrichment planting, or a combination of these activities.

The baseline scenario, therefore, consists of a logged-over natural evergreen tropical rainforest, normally with no or insignificant regrowth, which may or may not be relogged.

As for the AFOLU sector, one (1) of the VCS methodologies, i.e. VM0005 Methodology for Conversion of Low-Productive Forest to High-Productive Forest (see Exhibit 56), which is applicable to IFM activities, specifies that only areas that have been designated, sanctioned or approved for such activities (e.g. as logging concessions) by national or local regulatory bodies are eligible for crediting. In particular, this methodology is applicable to

improved forest management practices that achieve the conversion of low-productive forest to high-productive forest (LtHP) through the protection of logged-over, degraded forest from further logging or the adoption of silvicultural techniques increasing the density of tree vegetation, or a combination of these activities.

Exhibit 56: Logging activities in one of the Forest Management Units (FMUs) in Sabah.



Photo credit: Eco-Ideal Consulting Sdn Bhd.

The above list is non-exhaustive and project proponents shall ensure that all the applicability conditions and eligibility criteria as per the chosen methodologies, as well as the other requirements and policies required in Malaysia are followed.

Chapter 5

How to Formulate a VCM Project

5.1 Chapter Summary

5.2 General Process



Chapter 5: How to Formulate a VCM Project

5.1 Chapter Summary

This chapter provides an overview of how to formulate a VCM project and the applicable fees. It will outline the related process and applicable fees for both Verra and Gold Standard.

5.2 General Process

This chapter outlines the procedures for developing a VCM project, from the idea formulation to the project registration. The project proponent will be guided step by step, from registering for Verra or Gold Standard online accounts to issuing and maintaining the Verified Carbon Units (VCUs) or Verified Emission Reductions (VERs), as described in detail under Sections [5.2.3](#) and [5.2.4](#).

The concept for developing a VCM project, which involves three (3) elements, is described in Exhibit 57.

Exhibit 57: Elements of developing a VCM Project.



Source: Illustration based on Sections 5.2.3 and 5.2.4

5.2.1 Idea Formulation

The first step when developing a project is to formulate an idea. This process serves to obtain a complete picture of the project being undertaken without really arriving at a detailed feasibility study. It is also aimed at a preliminary evaluation of the proposed project. Exhibit 58 helps to outline the specific steps needed to develop an idea and turn it into strategic planning.

Exhibit 58: Idea formulation.



Source: Illustration based on Sections 5.2.3 and 5.2.4

5.2.2 Feasibility Study

As its name suggests, the study is designed to assess whether a project/plan is feasible. The purpose of the feasibility study is to provide an independent assessment that examines all aspects of a proposed project, including technical, economic, financial, legal and environmental considerations. Exhibit 59 describes the key elements in conducting a feasibility study.

Exhibit 59: Key elements in conducting a feasibility study.



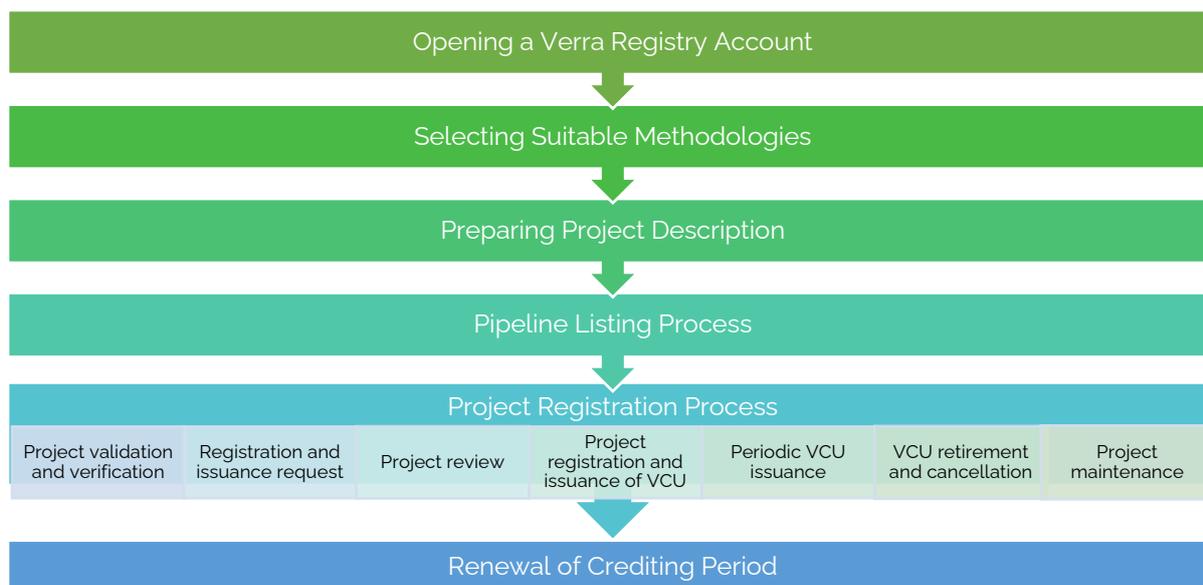
Source: Illustration based on Sections 5.2.3 and 5.2.4

5.2.3 Introduction to Verra

5.2.3.1 Development of a Verra VCM Project

Developing a Verra VCM project involves several processes, from opening a Verra Registry online account to the registration of the project. The processes involved in developing a VCM project are shown in Exhibit 60.

Exhibit 60: A Verra VCM project framework.



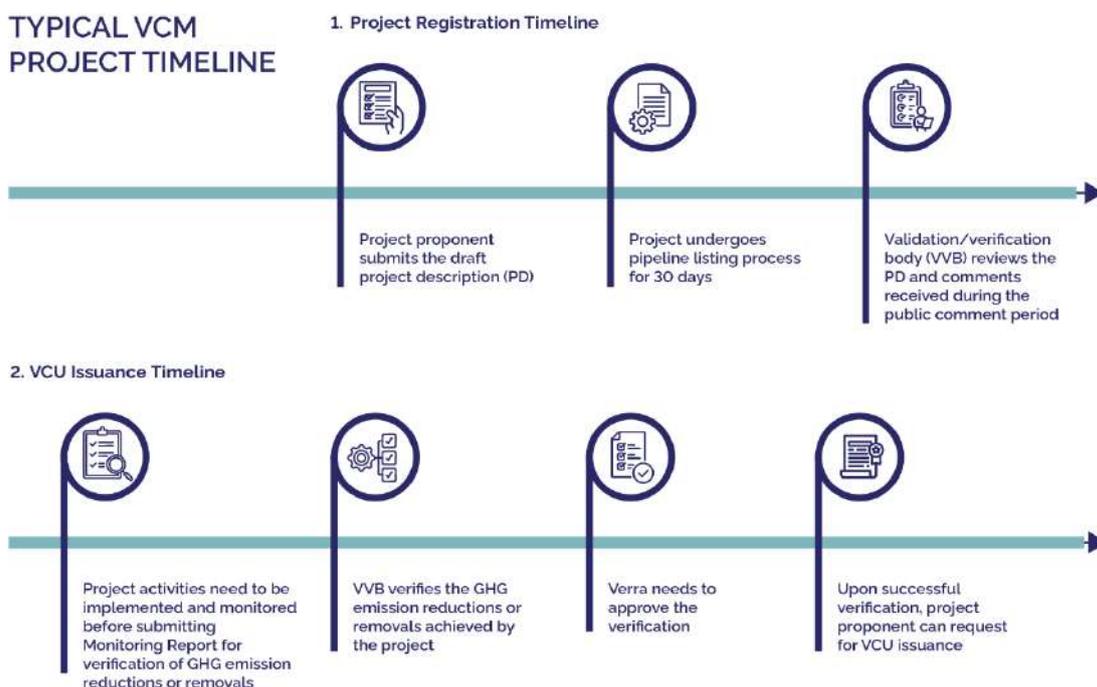
Source: Illustration from various sources ([Verra source 1](#), [Verra source 2](#) and [Verra source 3](#))

Before starting to develop a VCM project, the project proponent needs to know the timeline and the costs expected when developing a VCM project.

Timeline

There are two (2) timelines that the project proponent needs to be aware of (see Exhibit 61).

Exhibit 61: Typical VCM project timeline.



Source: Verra's website (<https://verra.org/programs/verified-carbon-standard/#starting-a-vcs-project:-what-to-expect>)

Costs

VCM project development costs vary from project to project. They fall into three (3) categories:

- i. Verra fees, as outlined in Section 2 of the [VCS Program Fee Schedule](#). All Verra fees disclosed in this Handbook are accurate at the time of publication;
- ii. Project development fees, which include project development and operations, monitoring and consultants' fees; and
- iii. Auditing fees payable directly to the validation/verification body (VVB).

Templates (Available on Verra's website)	Fees
Opening a Verra Registry Account	
No template	USD750 for each account
Selecting Suitable Methodologies)	
No template	No fee
Preparing Project Description (PD)	
<i>VCS Project Description Template</i>	No fee
Pipeline Listing Process	
<i>VCS Project Description Template VCS Listing Representation Template</i>	USD1,500 for each pipeline listing request

Templates (Available on Verra's website)	Fees
Preparing Monitoring Report	
<i>VCS Monitoring Report Template</i>	No fee
Project Registration Process	
Step 1: Project validation and verification	
<i>VCS Project Description Template</i> <i>VCS Monitoring Report Template</i>	USD5,000 for each verification review request comprising the following: <ul style="list-style-type: none"> • USD2,500 verification review request fee • USD2,500 prepayment fee which is credited against future issuances
Step 2: Registration and issuance request	
<i>VCS Project Description Template</i> <i>VCS Monitoring Report Template</i> <i>VCS Validation Report Template</i> <i>VCS Verification Report Template</i> <i>VCS Registration Representation Template (Single/Multiple PP)</i> <i>VCS Validation Representation Template</i> <i>VCS Verification Representation Template</i>	USD3,750 for each project registration request
Project Activity Data Allocation (PADA) Fee for REDD Projects	<p>Flat Fee: USD10,000 per request plus USD0.25 per hectare included in a submitted KML (Keyhole Markup Language) amounting to a maximum total cost of USD150,000 per project, payable at the time of the request.</p> <p>Area Change Fee: Changes to project areas that have already had activity data allocated incur a USD500 fee per request plus USD0.25 per previously unallocated hectare (with a maximum 20% change in total area).</p>
Step 3: Project review	
<i>VCS Project Description Template</i> <i>VCS Monitoring Report Template</i> <i>VCS Validation Report Template</i> <i>VCS Verification Report Template</i>	No fee
Step 4: Project registration and issuance of VCU	

Templates (Available on Verra's website)	Fees
<i>VCS Project Description Template</i> <i>VCS Monitoring Report Template</i> <i>VCS Validation Report Template</i> <i>VCS Verification Report Template</i> <i>VCS Issuance Representation Template (Single/Multiple PP)</i> Notification to national authority of Malaysia upon successful registration of project	USD0.23 per VCU, payable at the time of the issuance request USD0.07 per ABACUS VCU label, payable at the time of the issuance request USD0.05 per Article 6 VCU label, payable at the time of the issuance request USD0.07 per CCB VCU label, payable at the time of the issuance request USD0.07 per GHG emission reduction label and carbon dioxide removal VCU label, payable at the time of the issuance request USD0.07 per SD Vista VCU label, payable at the time of the issuance request
Step 5: Periodic VCU issuance	
<i>VCS Project Description Template</i> <i>VCS Monitoring Report Template</i> <i>VCS Verification Report Template</i>	USD0.23 per VCU, payable at the time of the issuance request
Step 6: VCU retirement and cancellation	
No template	USD0.02 per VCU transferred, retired or cancelled, paid by the account holder that initiates the transaction
Step 7: Project maintenance	
No template	USD750 per year for each account, payable in full at account approval and subsequently on the anniversary date of account approval each year USD2,000 account reactivation fee for account holders that have had their accounts suspended due to non-payment or other reasons
External Costs (Not Tracked by Verra)	
<ul style="list-style-type: none"> • Project development fees, including project development and operations, monitoring and consultants' fees • Auditing fees payable directly to the VVB 	

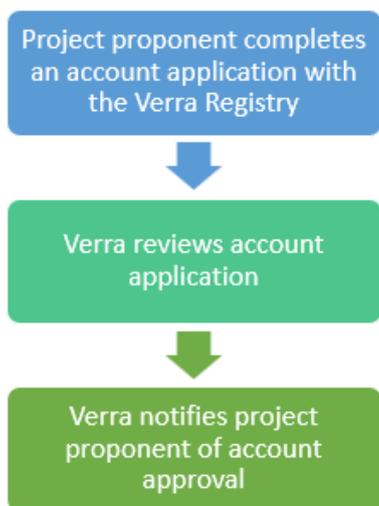
Note: The fee schedule is subject to changes by Verra. For more updated information, please visit [Verra's fee schedule](#) webpage.

5.2.3.2 Opening a Verra Registry Account

The project proponent must own an online Verra Registry account at the early stage of VCM project development. The Verra Registry is a platform where project pipeline listing, registration of a project and/or issuance, trading or retiring of VCUs take place. The Verra Registry account can be created by the project proponent at any time.

The general process of opening a Verra Registry account is summed up in Exhibit 62 below.

Exhibit 62: Opening a Verra Registry account.



Project proponents can apply to open a Verra Registry account through the Verra website at <https://registry.verra.org>

Account opening fee is USD750

Verra will send the applicants a list of Know-Your-Customer (KYC) questions that must be submitted for the account review

The review will take two (2) to five (5) working days to complete

The email notification of account approval will be sent to the designated Account Manager’s email address

Source: VCS Registration and Issuance Process, v4.3



Note that a single account on the Verra Registry may be used to manage multiple projects and projects participating in more than one Verra programme (e.g. VCS and Climate, Community and Biodiversity Standards (CCB)). It is not necessary to open separate accounts for each Verra program.

Verra online account registration: Step by step

The process of account registration with the Verra Registry is summarised in Exhibit 63.

Exhibit 63: Verra account application step-by-step procedure.



Source: Verra Registry User Guide

There are four (4) types of accounts. The project proponent needs to understand and choose which type of account (see Exhibit 64) is best suited for the organisation, as it will determine how the organisation interacts. For each type of account in the Registry, there are different functions available.

Exhibit 64: Definition of each account type.

Account Type	Definition
General Account	This account type allows the Account Holder to register projects, issue credits, transfer or export credits to counterparties, receive transfers of credits from counterparties and retire VCUs on its behalf. A General Account Holder can also retire credits on behalf of third parties.
Project Proponent	This account type allows the Account Holder to register projects, issue credits, transfer or export credits to counterparties and retire credits on its behalf. This account type cannot receive credit transfers nor hold or retire credits on behalf of third parties. This account type is recommended for most project proponents. If, in addition to registering projects, an Account Holder wishes to buy credits, a General Account is required.
Retail Aggregation	This account type allows the Account Holder to receive transfers of credits from counterparties and retire credits on behalf of third parties. Any credits transferred to the account must be retired within a certain period after delivery to the account, with the maximum holding period being established by the Registry Administrator. If the Account Holder does not retire the VCUs within the prescribed timeline, the Registry Administrator will do so. A Retail Aggregator Account Holder cannot transfer credits to counterparties. This account type is recommended for organisations that buy credits to retire on behalf of third parties.
End User	This account type allows the Account Holder to receive transfers of credits from counterparties for immediate retirement only. Retirements can only be on behalf of the Account Holder. An End User Account Holder cannot transfer or export credits to counterparties or hold active credits in their accounts. This account type is recommended for organisations that buy credits to offset their emissions.

Source: Verra Registry User Guide

Once the registration has been completed and submitted, all new accounts are subject to a KYC review of the application form.

The Registry Administrator will contact the Account Holder through the Account Manager's email address provided in the new account application form and send the Account Holder a list of questions that must be answered and submitted for the KYC review.

Email notification of account approval will be sent to the Account Manager. Once the account opening fee is paid, the Account Holder will be able to use all the functions of the system available for its type of account.

5.2.3.3 Selecting Suitable Methodologies

Methodologies are one of the vital keys in developing a VCM project. Methodologies provide requirements and procedures to determine project boundaries, identify baselines, assess additionality, monitor relevant parameters and ultimately, quantify GHG emission reductions or removals. Methodologies often refer to modules or tools that include specific methodological tasks and analyses (e.g. additionality) that are used in conjunction with the methodologies.

The methodologies can be either approved methodologies in the VCS Program or developed under an approved GHG programme such as the CDM.

When choosing a methodology for a project, the project proponent needs to identify the sector or category relevant to the project. Refer to [Chapter 4](#) for the types of eligible projects and VCS sectoral scopes.

The project proponent should check the list of methodologies available on Verra's and the CDM's websites and identify which methodologies best suit the proposed project.

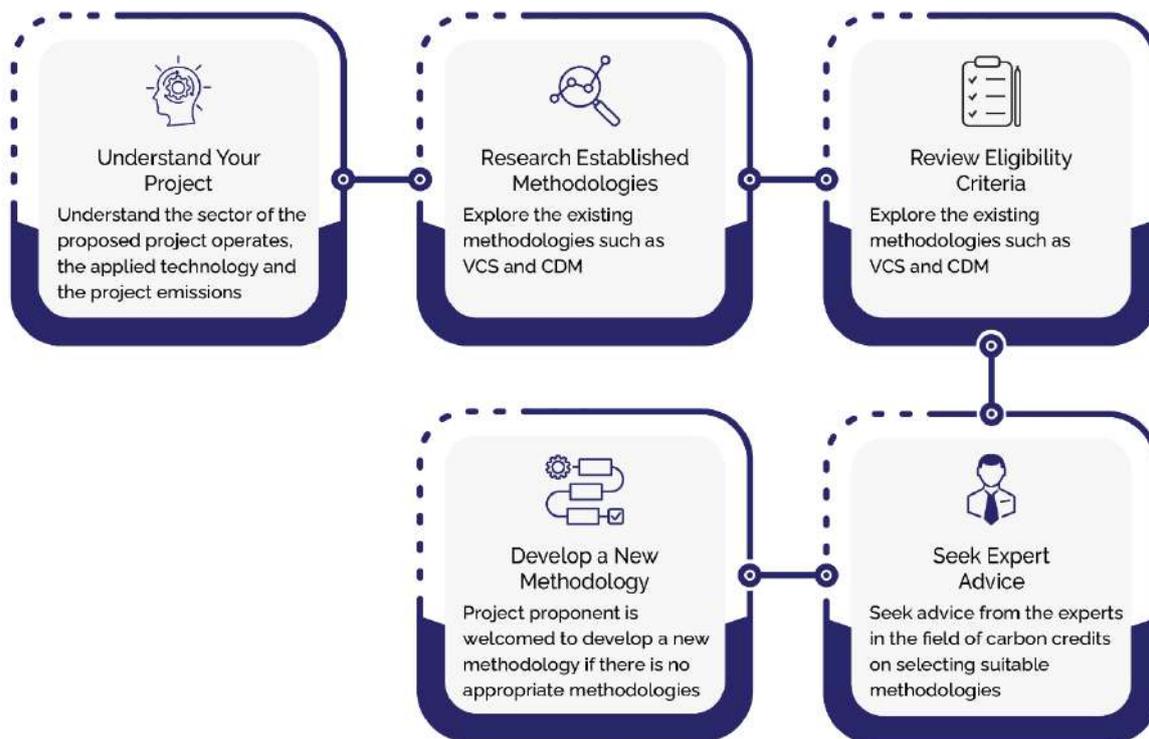
If no methodologies are applicable, the project proponent is welcome to propose a new methodology, which is described in [Chapter 6](#) of this Handbook.



When applying a methodology with scale and/or capacity limits, it shall be demonstrated that the project is not a fragmented part of a larger project or activity that would otherwise exceed such limits.

Exhibit 65 below shows the systematic steps in finding a suitable methodology for a proposed project.

Exhibit 65: Finding a suitable methodology.



Source: Illustration based on CDM Methodology Booklet

5.2.3.4 Preparing the Project Description (PD)

To register a project, a PD needs to be prepared as early as before the pipeline listing process, where project proponents are required to submit their PD when requesting for pipeline listing.

Following the VCS Program, a PD needs to be prepared using the VCS Project Description Template which is available on the Verra website. You may refer to the ["Training on Using the VCS and VCS/CCB Templates" webinar](#) for guidance and tips.

In the PD, project proponents are required to describe the details of the project and project activities, including project location, start date, project crediting period and ownership of the GHG emission reductions or removals.

Project proponents will also have to demonstrate additionality, identify the most plausible baseline scenario, estimate the GHG emission reductions or removals in the baseline and project scenarios, and set out the data and parameters that will be monitored throughout the project. All the monitored data and parameters of the project shall be included in the PD.

 *All information in the PD shall be presumed to be available for public review, although commercially sensitive information may be protected (as set out in the [VCS Registration and Issuance Process](#)) where it can be demonstrated that such information is commercially sensitive. The VVB shall check that any information designated by the project proponent as commercially sensitive meets the VCS Program definition of commercially sensitive information.*

The requirements for the development of a project are as follows:

Project Location

The project location for non-AFOLU projects shall be specified by a single geodetic coordinate, while for AFOLU projects, it shall be clearly specified and the description shall include the name of the project area, maps of the project zone, a Keyhole Markup Language (KML) file (i.e. a Geographic Information System (GIS) file format for representing geographic features) with geodetic polygons, total size of the project zone and details of ownership.

Project Boundary

The project boundary shall be described (using diagrams, as required) and GHG sources, sinks and reservoirs shall be identified and assessed in accordance with the methodology applied to the project. If any relevant GHG source, sink or reservoir is not selected, justification shall be provided.

Project Start Date

- ✓ The project start date of a non-AFOLU project is the date on which the project begins generating GHG emission reductions or removals. Non-AFOLU projects shall complete validation within two (2) years of the project start date. However, additional time is granted for non-AFOLU projects to complete validation where they are applying a new VCS methodology. Specifically, projects using a new VCS methodology and completing validation within two (2) years of the approval of the

methodology by Verra may complete validation within four (4) years of the project start date.

- ✓ For AFOLU projects, the project start date is the date on which activities that lead to the generation of GHG emission reductions or removals are implemented (e.g. preparing land for seeding, planting, changing agricultural or forestry practices, rewetting, restoring hydrological functions or implementing management or protection plans). AFOLU projects shall initiate the pipeline listing process within three (3) years of the project start date. All AFOLU projects with ex ante emission reduction/removal estimates of 20,000 tCO_{2eq} per year or less and ARR, RWE and IFM (with the exclusion of Logged to Protected Forest (LtPF) projects of any size) shall complete validation within eight (8) years of the project start date. All other AFOLU projects shall complete validation within five (5) years of the project start date.

Project Crediting Period

- ✓ For non-AFOLU projects, the project crediting period shall be either seven (7) years, twice renewable for a total of 21 years, or ten (10) years fixed.
- ✓ As for AFOLU improved agricultural land management (ALM) projects focusing exclusively on reducing N₂O, CH₄ and/or fossil-derived CO₂ emissions, the project crediting period shall be either seven (7) years (twice renewable for a total of 21 years) or ten (10) years fixed. For all AFOLU projects other than such ALM projects, the project crediting period shall be a minimum of 20 years, up to a maximum of 100 years, which may be renewed at most four (4) times, with a total project crediting period not to exceed 100 years.

Additionality

All VCM projects must demonstrate that they are additional to what would have occurred under a business-as-usual (BAU) scenario. Specifically, the projects shall demonstrate regulatory surplus at validation and each project crediting period renewal. Regulatory surplus means that project activities are not mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework. Generally, additionality shall be demonstrated and assessed in accordance with the requirements set out in the methodologies applied to the project.

For AFOLU projects, all approved VCS methodologies address additionality using the most recent [*VCS Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use \(AFOLU\) Project Activities*](#) and/or [*VCS Tool for the Demonstration and Assessment of Additionality in IFM Project Activities*](#). These tools generally follow a step-by-step process involving: (0) preliminary screening; (1) identifying alternative land use scenarios; (2) performing an investment analysis or barriers analysis; and (3) performing a common practice analysis.

Compliance with Laws

Projects and the implementation of project activities shall not lead to the violation of any applicable law, regardless of whether or not the law is enforced. Project proponents should stay abreast of applicable rules and requirements that may apply to their projects.

Once the PD is completed, it must be validated by the approved VVB before proceeding with project registration.



Grouped Projects

A VCS grouped project combines multiple project activity instances into a single, combined project that adds new instances over time. Using VCS requirements for grouped projects, a project proponent may avoid undergoing a full validation for each new instance added to the project. This can allow projects to scale up over time and reduce transaction costs. A grouped project shall be described in a single PD with all the required information as stated in the VCS Program Standard, Section 3.6.22.

A project proponent sets the geographic boundaries for the grouped project, including where new project activity instances may be added, and establishes criteria for determining the eligibility of future instances.

5.2.3.4 Pipeline Listing Process

The pipeline listing process is a process whereby project proponents will list their projects on the Verra Registry for public comments for 30 days.

There are two (2) types of pipeline listing: Under Development and Under Validation.

The project proponent needs to pay a pipeline listing request fee of USD1,500 for each pipeline listing request, payable at the time of the request. Refer to Verra's latest [VCS Program Fee Schedule](#).



Please refer to Verra's latest VCS Program Fee Schedule which is available on Verra's website.

Project Listing as "Under Development"

Projects that are listed under the status of "Under Development" are those projects that have yet to contract a VVB (see Exhibit 66). Under this status, a list of documents, as tabulated in Exhibit 66, shall be submitted to the Verra Registry.

Exhibit 66: Pipeline listing process for "Under Development" status.



Source: VCS Registration and Issuance Process, v4.3

Projects may later transition from "Under Development" status to "Under Validation" status and undergo a public comment period when requested by the project proponent.

Project Listing as "Under Validation"

Projects that have been requested to list as "Under Validation" status need to be validated by contracting a VVB (see Exhibit 67). The project proponent is required to submit proof of contracting along with other documents.

Exhibit 67: Pipeline listing process for "Under Validation" status.



Source: VCS Registration and Issuance Process, v4.3

The following is the list of documents to be submitted to the Verra Registry for projects Under Development and Validation (see Exhibit 68).

Exhibit 68: List of documents to be submitted for projects Under Development and Validation.

Under Development	Under Validation
Templates (Available on Verra's Website)	
<u>VCS Project Description Template</u> <u>VCS Listing Representation</u>	<u>VCS Project Description Template</u> <u>VCS Listing Representation</u>
Documents to be prepared and submitted	
Draft PD <ul style="list-style-type: none"> • Shall include at a minimum the cover page and draft of sections 1.1-1.5, 1.7-1.11, 1.13-1.17 and 3.1-3.2 of the <u>VCS Project Description Template</u> • Verra will conduct a completeness review of the submitted documents and project proponents shall address the raised issues before the project listing request can proceed. 	Complete PD <ul style="list-style-type: none"> • All sections of the PD template are to be completed
Listing Representation	Listing Representation
-	Proof of contracting of the validation

Source: VCS Registration and Issuance Process, v4.3



The latest template for PD and Listing Representation can be obtained on Verra's website.

For a project to be qualified as "Under Validation" status, project proponents are required to submit a complete PD and proof of contracting of the validation to the Verra Registry. Verra will then review the submitted documents and update the status of the project from "Under Development" to "Under Validation" status in the Verra Registry. Second Listing Representation is not required.

All relevant documents will be submitted to the Verra Registry in electronic format.

After submission, Verra shall review all the submitted project documents to ensure that sufficient information is given and all issues raised by Verra are addressed.

The public comment period starts on the date on which the project status is updated to "Under Validation" or the date on which the project is listed on the pipeline as "Under Validation". After the 30 days of the public comment period, Verra will provide all the comments received to the project proponent. The project proponent shall address all the comments.

Once the project has successfully completed the pipeline listing process, it may progress to Project Registration in the Verra Registry. An unsuccessful project will remain in the listing for 12 months before being inactivated unless the validation is still being pursued by the project proponent.

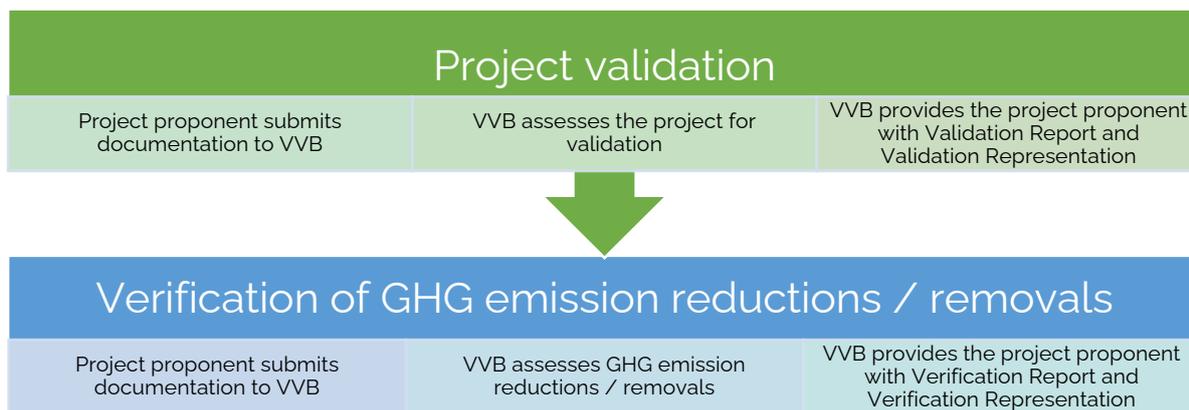
For further details on the pipeline listing process, the project proponent can refer to the [VCS Registration and Issuance Process](#).

5.2.3.5 Project Registration Process

Step 1: Project Validation and Verification

The first step of the project registration process is the validation of the project and verification of GHG emission reductions or removals, as shown in Exhibit 69 below.

Exhibit 69: Project validation and verification process.



Source: VCS Registration and Issuance Process, v4.3

Exhibit 70 lists all the documents to be submitted to the VVB for validation and verification. Project proponents shall address all the issues raised in the Validation Report and Verification Report sent by the VVB. In accordance with the [VCS Program Standard](#) and [VCS Program Guide](#), project proponents shall complete the validation process before requesting verification approval.

Exhibit 70: List of documents to be submitted to VVB for validation and verification.

Project Validation	Verification of GHG Emission Reductions / Removals
PD	Monitoring Report
Evidence of project ownership	Others as required by VVB
Others as required by VVB	-

Preparing a Monitoring Report

When a project proponent intends to request for project registration together with verification approval, the project proponent is required to prepare and submit a Monitoring Report as part of the requirements for verification.

A project proponent shall monitor and measure the GHG emission reductions or removals for a project during a defined monitoring period. A Monitoring Report is used to detail all the information of the project, as well as the GHG emission reductions or removals achieved during the specified period. It covers sections on project details, safeguards, implementation status, data and parameters, quantification of GHG emission reductions and removals and appendices.



The monitoring period of the Monitoring Report shall be a distinct time period that does not overlap with previous monitoring periods.

Metric tonnes shall be used as the unit of measure and the quantity of each type of GHG shall be converted to tonnes of CO₂ equivalent (CO₂eq).

The project proponent shall use the [VCS Monitoring Report Template](#) to prepare the Monitoring Report and must report the implementation status of the project activity. All recorded data and parameters monitored and used to calculate the GHG emission reductions or removals generated for that monitoring period shall be included.



Monitoring is a crucial part of a project activity as it is the key to ensuring successful verification and VCU issuance. A dedicated monitoring team within the project proponent's organisation can be set up, with its roles and responsibilities clearly outlined in an organisation chart. The monitoring team shall carry out all the tasks related to project monitoring, including proper recording and documentation of data. Engagement with technical experts, e.g. carbon credit consultants who can provide consultancy services for carbon credits, or pre-feasibility studies to explore the options, is useful in this situation.

Monitoring Plan

The project proponent shall establish a GHG information system for obtaining, recording, compiling and analysing data and information important for quantifying and reporting GHG emissions and/or removals relevant for the project (including leakages) and the baseline scenario. Where measurement and monitoring equipment is used, the project proponent shall ensure the equipment is calibrated according to the equipment's specifications and/or relevant national or international standards.

The project proponent shall then submit the completed Monitoring Report to the contracted VVB for verification of GHG emission reductions or removals. Once the VVB concludes the verification, the project proponent may submit the project for verification approval.



Grouped Projects/ AFOLU Projects

Grouped projects, AFOLU projects and other projects with a risk of a reversal or loss event shall not have gaps between monitoring periods.

Grouped Projects

The VVB is to assess the grouped project based on the initial project activity instances and to assess whether the eligibility criteria are appropriate for determining the validity of future instances.

The VVB is to verify the monitored GHG emission reductions or removals for the project activity instances that have been validated to be part of the grouped project.

During the verification, a project proponent may include new project activity instances. The contracted VVB assesses whether the project activity instances comply with the eligibility criteria and fall within the pre-determined geographic boundary. New instances are then monitored with the other project activity instances and GHG emission reductions or removals are verified.

Step 2: Registration and Issuance Request

The project registration process can only be initiated by the project proponent, an entity to which the project proponent has assigned sole rights to the GHG emission reductions or removals for the entire project crediting period or the authorised representative of either of these entities. No other entities can initiate the project registration process.

The project proponent may request both project registration and verification approval at the same time, or only project registration without verification approval.

Depending on which scenario the project proponents wish to register their projects under, the documents to be submitted to the Verra Registry are tabulated in Exhibit 71 below.



The request for registration of the project can only proceed after the validation process has been completed, but before the first verification of GHG emission reductions or removals.

Exhibit 71: List of documents to be submitted to Verra Registry for registration and issuance request.

Scenario 1	Scenario 2
The project proponent requests registration without requesting verification approval	The project proponent requests both registration and verification approval
Relevant documents to be submitted to Verra Registry	
PD and Registration Representation	PD and Registration Representation
Validation Report and Validation Representation	Validation Report and Validation Representation
Emission reductions and removals calculation spreadsheets	Emission reductions and removals calculation spreadsheets Monitoring Report and Issuance Representation
Proof of right or proof of contracting, where relevant	Verification Report and Verification Representation
Any annexes or supporting documents referenced in the PD	Proof of right ²⁰ or proof of contracting, ²¹ where relevant
	Any annexes or supporting documents referenced in the PD
	Evidence and representation with respect to the cancellation of GHG credits under another GHG programme

Source: Illustration based on VCS Registration and Issuance Process, v4.3



The latest templates for the PD, Registration Representation, Monitoring Report, Validation Report and Verification Report can be obtained on Verra's website.

Exhibit 72 lists all the information required when preparing the evidence of proof of right.

²⁰ Proof of right shall be submitted to the Verra Registry where an entity other than the project proponent or its authorised representative initiates the project registration process.

²¹ Proof of contracting shall be provided to the Verra Registry where required. The project proponent or its authorised representative shall provide evidence of the legal agreement between the project proponent (or other entity that has contracted the VVB to undertake validation) and the VVB in relation to the validation of the project. A final legal agreement, letter of intent, memorandum of understanding or term sheet shall serve as proof of contracting. Such evidence of proof of contracting shall be uploaded to the Verra Registry as a private document (for Verra internal auditing purposes) and therefore will not be publicly available.

Exhibit 72: Evidence of proof of right.

Verra Registry Check	
Names of the parties to the agreement	The parties are the entity initiating the project registration process (buyer or transferee) and the project proponent (seller or transferor), or where there are one or more intermediaries, the parties shall be the relevant parties in the chain of ownership between the project proponent and the entity initiating the project registration process
Date of the agreement	Appropriate to the project and transaction subject of the legal agreement
Project name	Same as the project that the entity is presenting for registration
Project crediting period	The project crediting period is defined, with a start date and duration (or end date) specified
The clause that transfers the right to GHG emission reductions or removals between the parties to the agreement	The clause transfers the right to the GHG emission reductions or removals generated by the project for the project crediting period
Signature of parties to the legal agreement	The legal agreement is signed by both parties to the agreement

Source: VCS Registration and Issuance Process, v4.3

Projects registered under an approved GHG programme or a non-approved programme are able to register under the VCS Program. All the documentation required for the registration process is the same as that required for projects registered under the VCS Program.

In addition, the VCS Program allows projects registered under an approved GHG programme to cancel GHG credits issued under the approved GHG programme and have them issued as VCU in the Verra Registry.

The registration fee for the requested project is USD3,750 for each project registration request, payable at the time of the request.

For more details, please refer to [VCS Registration and Issuance Process, Section 4.2.15 to Section 4.2.22.](#)



Grouped Projects/AFOLU Projects



Grouped projects and AFOLU projects with geographic areas characterised by one or more geodetic polygons shall provide the geodetic information to the Verra Registry in the format specified in the VCS Standard.

Grouped projects, AFOLU projects and other projects with risk of reversal or loss shall submit Monitoring and Verification Reports in chronological order.

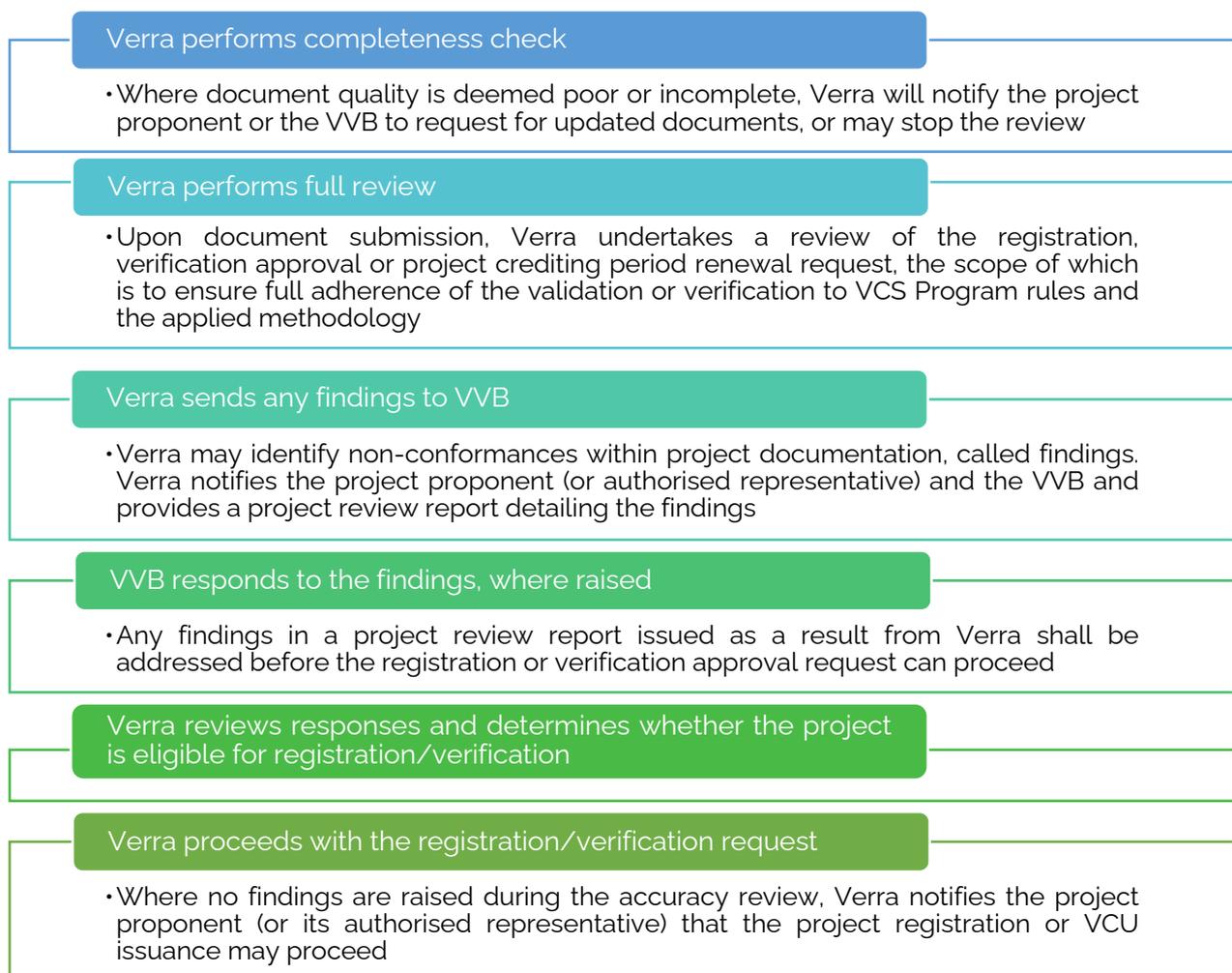
Step 3: Project Review

The project review process is a two (2)-part process consisting of a completeness check and an accuracy review of the project registration approval, verification approval or project crediting period renewal request (see Exhibit 73).

Project review is conducted by Verra where it checks that the VVB has appropriately assessed and has fully described how it has assessed the project's conformance with VCS Program rules. Note that the project review process is triggered when the relevant documentation and request for registration, verification approval or project crediting period renewal are submitted to the Verra Registry. As such, project proponents are encouraged to submit their documentation to the Verra Registry as soon as it is ready so that the project review process may be completed at an early stage.

Note also that when submitting verification approval documentation, it is not necessary to immediately request the issuance of VCUs. Instead, Verra begins the review process following receipt of the relevant documentation. VCUs may then be issued upon request to the Verra Registry at any time following the completion of such reviews.

Exhibit 73: Flow of the project review process.

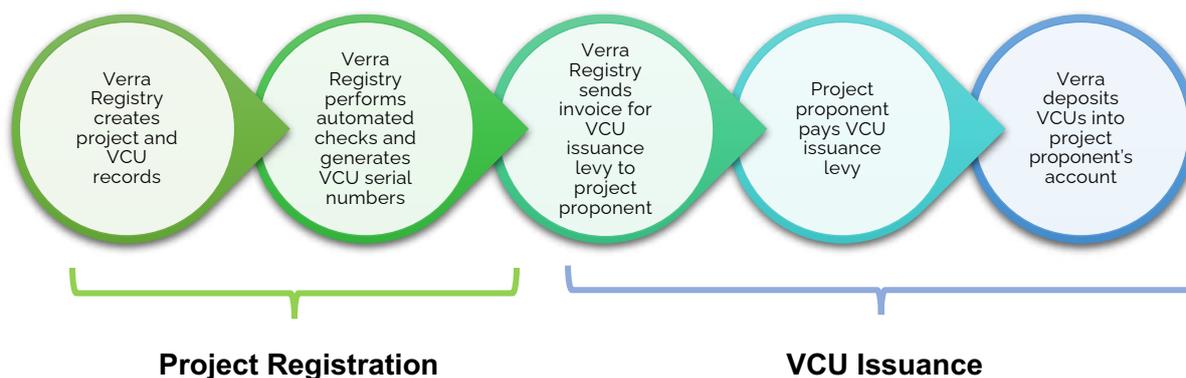


Source: VCS Registration and Issuance Process, v4.3

Step 4: Project Registration and Issuance of VCU

The overall process of project registration and issuance of VCU (initial issuance) is presented in Exhibit 74.

Exhibit 74: Project registration and issuance of VCU process.



Source: VCS Registration and Issuance Process, v4.3

Project Registration

After the green light at accuracy review, the Verra Registry will use the information submitted by the project proponent to create project and VCU records on the Registry. All the relevant documents, as listed in Exhibit 75, shall be uploaded to the Verra Registry as public documents, except for proof of right/proof of contracting.

Documents uploaded on the Verra Registry are based on the scenario when the project proponent requests for project registration, which is registration without verification approval or registration together with verification approval.

Exhibit 75 lists all the documents that need to be uploaded according to each scenario.



In a case where a PD deviation has been applied and a revised PD is issued, such PD shall be uploaded to the Verra Registry as a public document.

Likewise, where a project crediting period has been renewed, the revised PD and new Validation Report and Validation Representation shall be uploaded to the Verra Registry as public documents.

Exhibit 75: List of documents to be uploaded by Verra to the Registry for registration.

Scenario 1	Scenario 2
The project proponent requests registration without requesting verification approval	The project proponent requests both registration and verification approval
Relevant documents to be submitted to Verra Registry	
PD and Registration Representation	PD and Registration Representation
Validation Report and Validation Representation	Validation Report and Validation Representation
Emission reductions and removals calculation spreadsheets	Emission reductions and removals calculation spreadsheets Monitoring Report and Issuance Representation
Proof of right or proof of contracting, where relevant	Verification Report and Verification Representation
Any annexes or supporting documents referenced in the PD	Proof of right ²² or proof of contracting ²³ , where relevant
	Any annexes or supporting documents referenced in the PD
	Evidence and representation with respect to the cancellation of GHG credits under another GHG programme

Source: Illustration based on VCS Registration and Issuance Process, v4.3



Proof of right/Proof of contracting is for Verra's internal auditing purposes only.

The registration fee shall be paid to Verra before the project is registered, as mentioned in **Step 2** above.



Fees are not refundable if a project is rejected or a project request is denied. The fee is payable for each request, including a new request made as a follow up to a previously denied request.

[Project proponents with carbon projects that are successfully registered with Verra should notify the national authority of Malaysia. The national authority refers to the ministry that submits the national update report to the UNFCCC, i.e. NRES. Please refer to Section 3.1.]

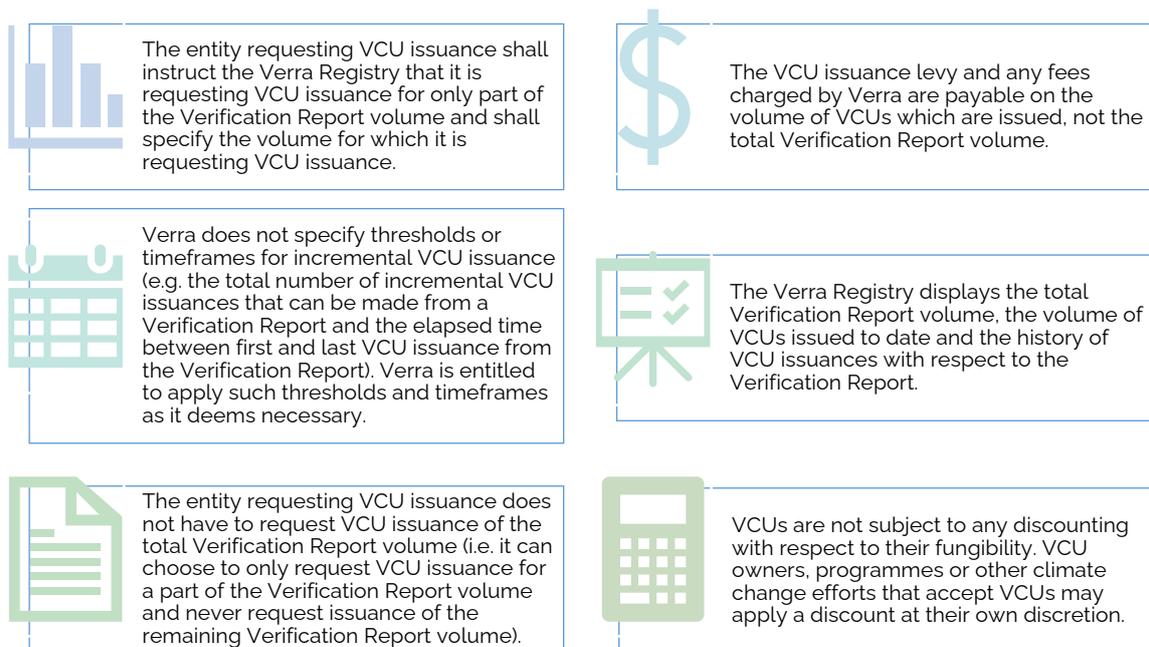
²² Proof of right shall be submitted to the Verra Registry where an entity other than the project proponent or its authorised representative initiates the project registration process.

²³ Proof of contracting shall be provided to the Verra Registry where required. The project proponent or its authorised representative shall provide evidence of the legal agreement between the project proponent (or other entity that has contracted the VVB to undertake validation) and the VVB in relation to the validation of the project. A final legal agreement, letter of intent, memorandum of understanding or term sheet shall serve as proof of contracting. Such evidence of proof of contracting shall be uploaded to the Verra Registry as a private document (for Verra's internal auditing purposes) and therefore will not be publicly available.

Initial VCU Issuance

VCUs can be issued incrementally from a Verification Report (i.e. when the project proponent or its authorised representative requests VCU issuance, it can request issuance of part of the Verification Report volume and request issuance of the remaining volume later). See Exhibit 76 for details.

Exhibit 76: VCU issuance process and initial VCU issuance requirements.



Source: Illustration based on VCS Registration and Issuance Process, v4.3

Where the project has cancelled GHG credits issued under an approved GHG programme and is having them issued as VCUs, the project reference number under the approved GHG programme shall be noted on the project record on the Verra Registry.

The VCU issuance levy, including conversion of GHG credits from approved GHG programmes, is USD0.23 per VCU.

The detailed process of requesting for VCU issuance can be found in **Step 5** below.

Step 5: Periodic VCU Issuance

All and any periodic VCU issuances shall be initiated by the project proponent stated on the project record in the Verra Registry or its authorised representative. Exhibit 77 presents the flow of the VCU issuance process.

Exhibit 77: VCU issuance process.

Project proponent submits documentation to Verra

Documents include:

- Monitoring Report, Verification Report, Verification Representation, Issuance Representation and emission reductions / removals (ERR) calculation sheets

Verra reviews verification request

Verra creates VCU record on Verra Registry

Verra Registry performs automated checks and generates VCU serial numbers

Verra sends invoice for VCU issuance levy to project proponent

Project proponent pays VCU issuance levy

Verra deposits VCUs into project proponent's account

Source: VCS Registration and Issuance Process, v4.3



The latest information on Issuance Representation of single and multiple project proponents can be obtained on Verra's website.

Step 6: VCU Retirement and Cancellation

VCU retirement and cancellation requests can be made through the Verra Registry, where one can see the status of the VCU as "Active", "Retired" or "Cancelled". VCU retirement²⁴ and VCU cancellation²⁵ have specific meanings, as set out in the VCS Program document [VCS Program Definitions](#).

²⁴ VCU retirement is the permanent removal of a VCU from circulation in the Verra Registry system, which represents an offset of one metric tonne of CO₂ equivalent.

²⁵ VCU cancellation is the permanent removal of a VCU from circulation in the Verra Registry system for purposes other than retirement (e.g. converting VCUs into another form of GHG credit, compensating for excess VCU issuance).

VCU Retirement

VCUs may be retired as set out in Exhibit 78 below.

Exhibit 78: VCU retirement process.



Source: VCS Registration and Issuance Process, v4.3

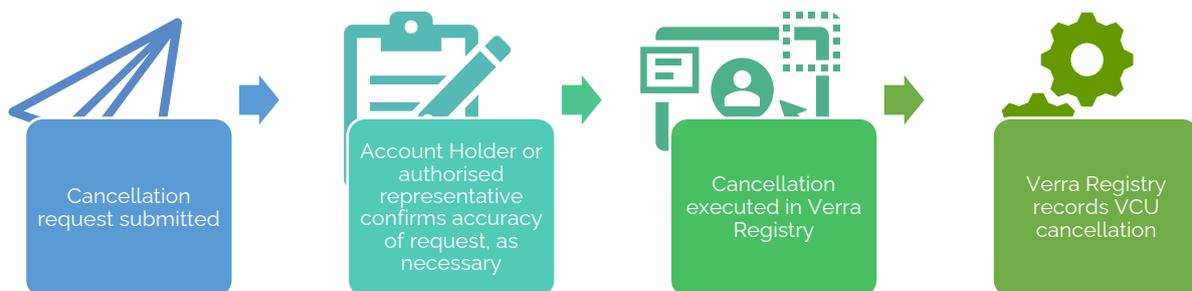
The Registry Account Holder or its authorised representative may execute a VCU retirement through its Verra Registry account at a cost of USD0.02 per VCU retired. The Verra Registry records the details of all VCU retirements. VCUs can be retired incrementally from a Registry Account Holder's VCU holdings.

 *Verra does not specify thresholds or timeframes for incremental VCU retirement.*

VCU Cancellation

VCUs may be cancelled as set out in Exhibit 79 below.

Exhibit 79: VCU cancellation process.



Source: VCS Registration and Issuance Process, v4.3

 *The initiator and recipient of a VCU cancellation request depends on the specific circumstances of the cancellation (e.g. where VCUs are being converted into another form of GHG credit, the cancellation request may be submitted to Verra by the other GHG programme in which the Registry Account Holder is participating).*

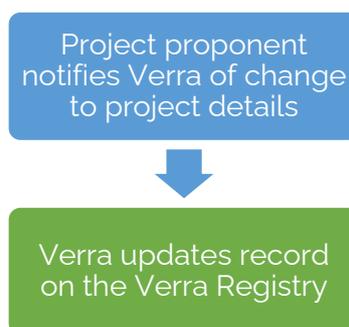
The Registry Account Holder, its authorised representative, the other GHG programme in which the Registry Account Holder is participating or Verra may initiate VCU cancellation at a cost of USD0.02 per VCU cancelled.

The Registry Account Holder or its authorised representative may be asked to confirm the details of the VCU cancellation request. VCUs are cancelled in the Verra Registry and the Verra Registry records the details of all VCU cancellations.

Step 7: Project Maintenance

Project maintenance may be updated as set out in Exhibit 80 below.

Exhibit 80: Project maintenance process.



Source: VCS Registration and Issuance Process, v4.3

Where a project fails to submit a Verification Report to the Verra Registry within five (5) years of its last verification, the following applies:

- 1) Verra sends a written communication to the project proponent to request evidence that the project is still active despite not having been verified.
- 2) The project proponent shall submit such evidence within one (1) year of receiving the written communication from Verra.
- 3) Where a letter is received, it shall be posted publicly to the Verra Registry and the project status in the Registry shall be changed to "Late to Verify".
- 4) Where no letter is received, the project status shall still be changed to "Late to Verify", but will not benefit from an explanation being available to potential buyers and other stakeholders. The project proponent is encouraged to submit an updated letter annually.



Where a project has not been verified because it has transitioned to another GHG programme (e.g. integrated into a government programme), its project status shall be changed to "Project Transferred to Other GHG Program" instead of "Late to Verify".

Where an AFOLU project fails to submit a Verification Report to the Verra Registry within five, 10 and 15 years of its last verification, buffer credits are put on hold or cancelled (and the project status will be changed to "Inactive"), as appropriate.

Where the project proponent wishes to withdraw the project from the VCS Program (e.g. in order to transfer the project to another GHG programme), the following applies:

- 1) The project proponent shall submit a letter (in English) on its organisation letterhead to the Verra Registry, requesting that the project be withdrawn. Such a letter shall include the project name, project ID, the reason for the withdrawal request and the signatures and contact information of all project proponents.
- 2) Verra reviews the withdrawal request and may request additional information prior to approving the request.
- 3) Upon approval, Verra updates the status of the project to "Withdrawn". The project information shall remain publicly available on the Verra Registry but the project will not be able to issue VCUs.
- 4) In the case of an AFOLU project where VCUs have been previously issued, the following applies:
 - a) The project shall not be eligible for any release of buffer credits;
 - b) Where Verra confirms that the project has registered with another GHG programme, all buffer credits associated with the project shall be cancelled; and
 - c) Where Verra is unable to confirm that the project has registered with another GHG programme, buffer credits shall be cancelled over time.

The account maintenance fee is paid annually to Verra. The amount of the maintenance fee is USD750 per year for each account, payable in full at account approval and subsequently on the anniversary date of account approval each year.

The Account Reactivation Fee is USD2,000 for account holders whose accounts have been suspended due to non-payment or other reasons.

Step 8: Renewal of Crediting Period

The project crediting period²⁶ must be renewed periodically throughout the lifetime of the project in order to ensure the changes in the project's baseline scenario and regulatory surplus are taken into consideration.

A full reassessment of additionality is not required when renewing the project crediting period unless otherwise specified in the methodologies. However, a PD containing updated information with respect to the baseline, the estimated GHG emission reductions or removals and the Monitoring Plan shall be submitted for validation based upon the latest approved version of the methodologies, or their replacement.

The updated PD shall be validated in accordance with VCS Program rules and against the (current) scope of the VCS. Such a Validation Report shall be issued after the end of the (previous) project crediting period but within two (2) years after the end of the (previous) project crediting period. Where a project crediting period is not renewed within these timelines, the project crediting period shall end and the project shall be ineligible for further crediting. The issuance date of the Validation Report shall not be more than one (1) year prior to the end of the current crediting period.

²⁶ The project crediting period is the time period during which GHG emission reductions or removals generated by the project are eligible for issuance as VCUs.

For non-AFOLU projects, there are two (2) options for the crediting periods, as follows:

- 1) Seven (7) years, twice renewable (21 years total); and
- 2) Ten (10) years, non-renewable (10 years total).

For all AFOLU projects, except for ALM projects, the crediting period shall be a minimum of 20 years and up to a maximum of 100 years. The project is allowed four (4) renewals, with a total crediting period not exceeding 100 years.

For projects registered under other GHG programmes, VCU issuance beyond the end of the total project crediting period under those programmes is not eligible.

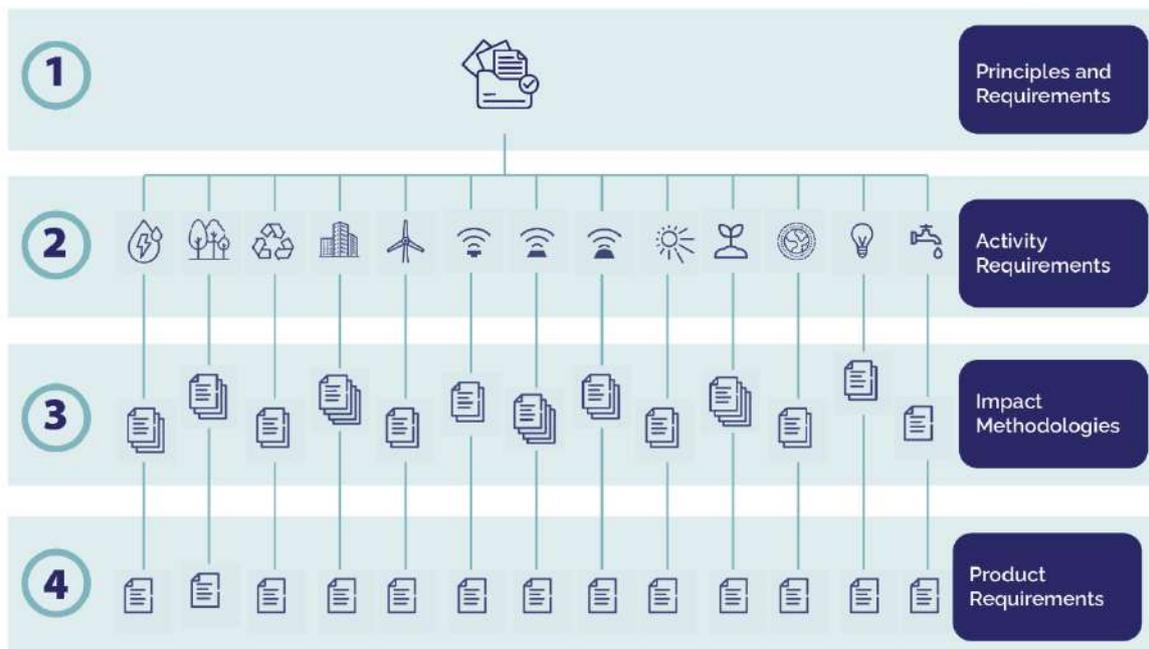
5.2.4 Introduction to Gold Standard

Gold Standard for the Global Goals (GS4GG, referred to as GS from here forth) is a globally recognised certification standard for carbon offset projects and sustainable development initiatives. Established in 2003 by the World Wildlife Fund (W/WF) and other international NGOs. Gold Standard aims to ensure that carbon projects not only reduce carbon emissions but also contribute to sustainable development goals (SDGs).

GS Documents

Before developing a Gold Standard carbon project, it is important to know the structure of GS documents. The document structure is designed to ensure comprehensive and transparent project certification. Here are the key components as in exhibit 81:

Exhibit 81: Key components in developing a Gold Standard carbon project.

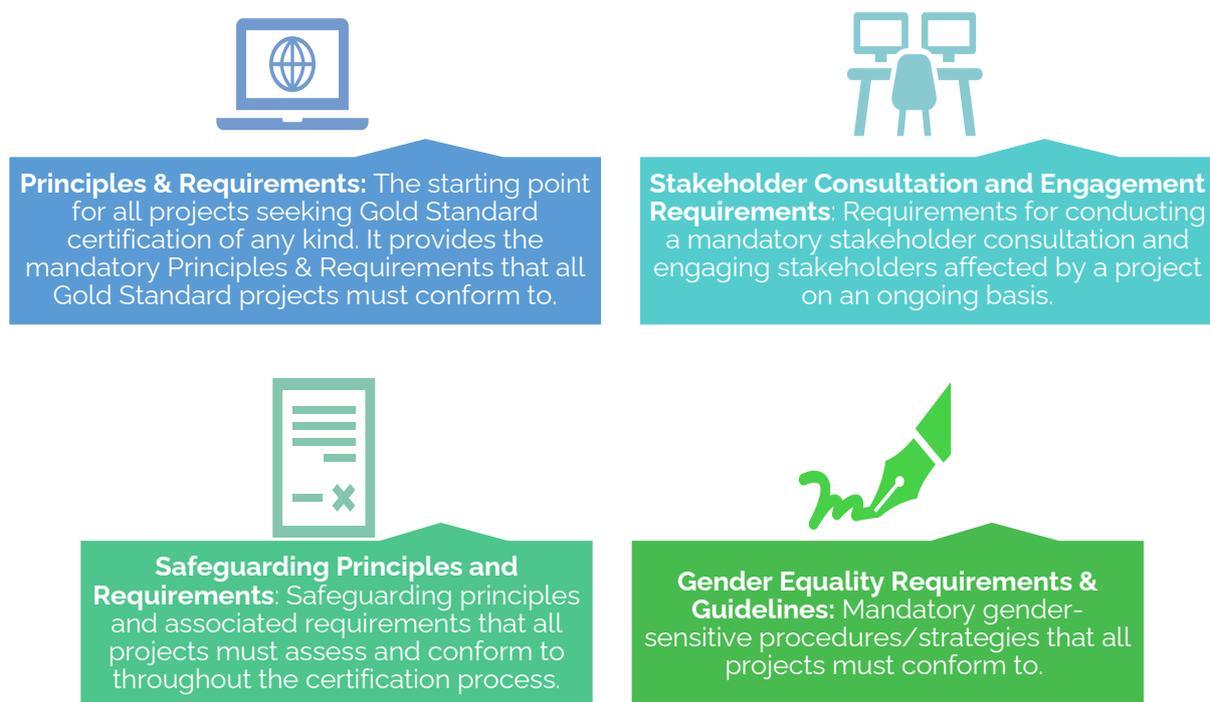


Source: <https://www.goldstandard.org/the-standard-structure>

1. **Principles & Requirements:** This section details the core principles and general requirements that all projects must follow. It includes five eligibility principles and requirements for carbon projects: (i) contributing to climate security and sustainable development, (ii) safeguarding principles, (iii) stakeholder inclusivity, (iv) demonstrating real outcomes, and (v) financial additionality and ongoing financial needs.
2. **Activity Requirements:** These guidelines are specific to various types of projects, such as renewable energy, waste management, and community services. Each project type has its own criteria and standards to ensure alignment with the GS objectives.
3. **Impact Methodologies:** This section outlines the methodologies for measuring and reporting the impacts of projects on the Sustainable Development Goals (SDGs). It includes tools and procedures for quantifying the positive outcomes in areas such as health, education, and environmental sustainability.
4. **Product Requirements:** This section covers the certification requirements for products generated by projects. It ensures that these products adhere to high quality and integrity standards, contributing to the overarching goals of the GS.

It is important to note that all projects seeking Gold Standard certifications must adhere to mandatory requirements listed in Exhibit 82.

Exhibit 82: [Mandatory requirements](#) for all Gold Standard Projects.



Source: <https://globalgoals.goldstandard.org/100-principles-and-requirements>

Under the [Principles and Requirements](#), the five core principles, as outlined in Exhibit 83, must be met:

Exhibit 83: Five core principles that projects must adhere to.

Principle 1: Contribution to Climate Security & Sustainable Development

Requirements:
Eligibility: Projects must be of a type pre-identified as eligible or must seek approval from Gold Standard for eligibility.
Baseline and Project Scenarios: Projects must define their Baseline Scenario (what would happen without the project) and Project Scenario (what will happen with the project).
Sustainable Development Goals (SDGs): Projects must demonstrate positive impacts on at least three SDGs, including SDG 13 (climate action). This ensures that projects not only reduce emissions but also contribute to broader sustainable development goals.

Principle 2: Safeguarding Principles

Requirements:
Assessment: Projects must conduct a Safeguarding Principles Assessment to identify and mitigate any potential negative impacts.
Conformity: Projects must demonstrate how they meet all relevant safeguarding requirements.
Documentation: The assessment and evidence of conformity must be included in the Project Design Document and Monitoring and Reporting Plan. This ensures transparency and accountability in how projects address potential risks.

Principle 3: Stakeholder Inclusivity

Requirements:
Engagement: Projects must identify, engage, and consult with relevant stakeholders, including local communities and experts.
Feedback: Projects must demonstrate how stakeholder feedback has influenced project design and implementation.
Ongoing Mechanisms: Projects must have systems in place for ongoing stakeholder feedback and grievance mechanisms. This ensures that stakeholders can continuously provide input and raise concerns throughout the project lifecycle.

Principle 4: Demonstration of Real Outcomes.

Requirements:
Project Design Document (PDD): Projects must develop a comprehensive PDD that includes a Monitoring and Reporting Plan.
Certification Process: Projects must undergo Design Certification (Validation and Design Review) and Performance Certification (Verification and Performance Review).
Monitoring and Reporting: Projects must undertake regular monitoring and produce Annual Reports and Monitoring Reports.
Renewal: Projects must undergo Design Certification Renewal to maintain their certified status and continue issuing Certified Impact Statements and Products. This ensures that projects are continuously monitored and verified for their impacts.

Principle 5: Financial Additionality & Ongoing Financial Need

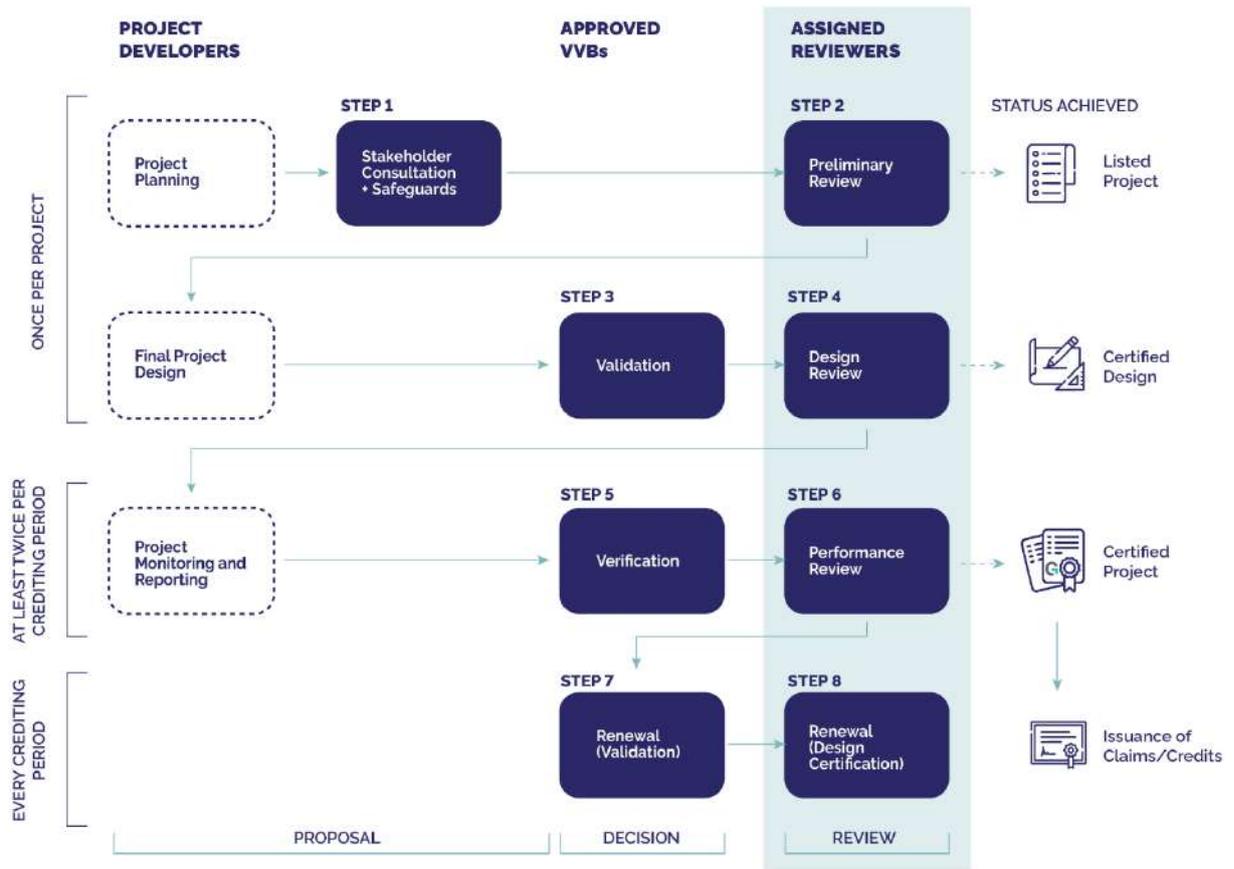
Requirements:
Additionality: Projects must demonstrate that their impacts are additional compared to the baseline scenario, meaning the benefits would not have occurred without the project.
Financial Tools: Projects seeking to issue Certified Impact Statements or Products must use approved tools to demonstrate financial additionality.
Ongoing Financial Need: Projects must demonstrate ongoing financial need at Design Certification Renewal, supported by an overview of project finances. This ensures that the financial support from certification is crucial for the project's sustainability.

Source: [Gold Standard](#)

5.2.4.1 Development of a Gold Standard VCM Project

Developing a Gold Standard VCM project involves several processes, from project planning to design verification and the renewal of design certification. The general processes involved in developing a Gold Standard VCM project are shown in Exhibit 84. Full details can be found in the Gold Standard's [Step-by-Step Certification Guide](#).

Exhibit 84: Gold Standard VCM project certification process.

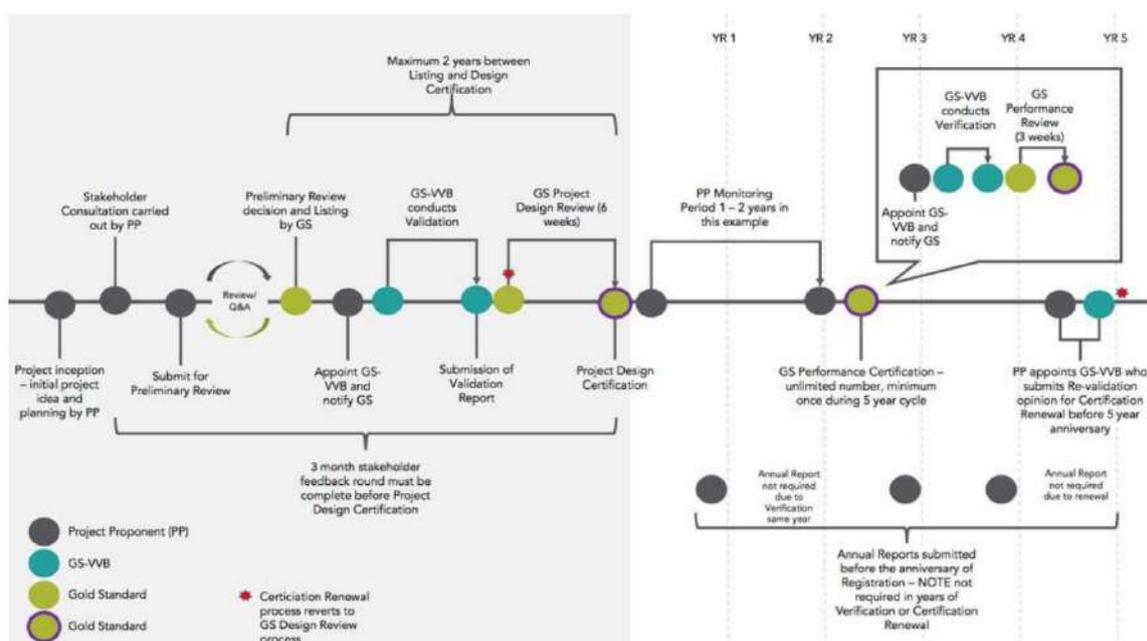


Source: Illustration based on [Certification Process Step-by-Step](#)

Timeline

There are two timelines that the project proponent needs to be aware of (see Exhibit 85). For a detailed guide to Gold Standard's Certification Process, please refer to the [process document](#).

Exhibit 85: Gold Standard VCM project timeline



1) Design Certification Process timeline:

- **Preliminary Review:** The project developer submits draft documentation for review by the Gold Standard. This process can take **between 14 days and four weeks**. Projects that pass the preliminary review will be listed in the Gold Standard Impact Registry with the status "Gold Standard Project Listed".
- **Validation by a VVB:** The project developer must engage a [VVB approved by Gold Standard](#) to verify whether the project's design and monitoring system comply with GS Requirements.
- **Design Certification Review:** After a positive validation from the Gold Standard-approved VVB, Gold Standard will assign an approved reviewer to conduct a final review of the documentation. Simultaneously, Gold Standard will conduct a two-week public consultation to gather feedback on the project design. Upon approval, the project's status will change from "Gold Standard Project Listed" to "Gold Standard Design Certified" in the Gold Standard Impact Registry. **This process takes a minimum of four weeks.**

2) Verified Emission Reductions (VER) Units Issuance timeline:

- **Project Monitoring and Reporting:** Once a project achieves "Gold Standard Design Certified" status, the project should be implemented and monitored according to the registered project design. The project developer must engage a Gold Standard approved VVB to independently assess the project activities and the Monitoring Report prepared by the project developer. **The duration of this assessment depends on the VVB.**
- **Project Performance Review:** Gold Standard will conduct a completeness check and then initiate the global consultation - which will run for two weeks in parallel with the performance review - and assign an expert to conduct a quality check of the project documents and Verification Report to ensure the accuracy, consistency and compliance of the project. Project performance reviews are

managed and scheduled by Gold Standard. They last for **a minimum of 3 weeks** from date of review.

- Approval: Successful completion of the Project Performance Review will result in the project being granted "Certified Gold Standard Project" status.

VER Issuance: Projects that have an approved Project Performance Review can opt to issue VERs.

Costs

Gold Standard VCM project development costs vary from project to project. They fall into three (3) categories:

- iv. Gold Standard fees, as outlined in [Gold Standard Fee Schedule](#). All Gold Standard fees disclosed in this Handbook are accurate at the time of publication²⁷;
- v. Project development fees, which include project development and operations, monitoring and consultants' fees; and
- vi. Auditing fees payable directly to the validation/verification body (VVB).

Depending on the project stream, type and scale, and phase, the fees vary as per below Exhibit 86. For the full list of applicable fees, please refer to [Gold Standard Fee Schedule](#).

Exhibit 86: Gold Standard VCM project development fees

Type	Fee	
Opening a Gold Standard Registry Account	USD1,000 (Annual, per organisation)	
Preliminary Review (listing)	USD1,000 (Per project) The review process will commence immediately after the submission of documents and a successful completeness check by Gold Standard. Although the fee payment is not required to initiate the review, it must be completed before the conclusion of the first review round. Gold Standard will only release the project review results once the fee has been paid. (40% discount for microscale + regular Voluntary Project Activity (VPA))	
Design Review (registration)	USD2,500 (Per project) (40% discount for microscale + regular VPAs)	
Performance Review	USD2,000 (Per project) (40% discount for microscale + regular VPAs)	
Issuance	Fee model CASH	Fee model Share of Proceeds (SOP)

²⁷ Please refer to the [Gold Standard Fee Schedule](#) for the latest information related to Gold Standard fees.

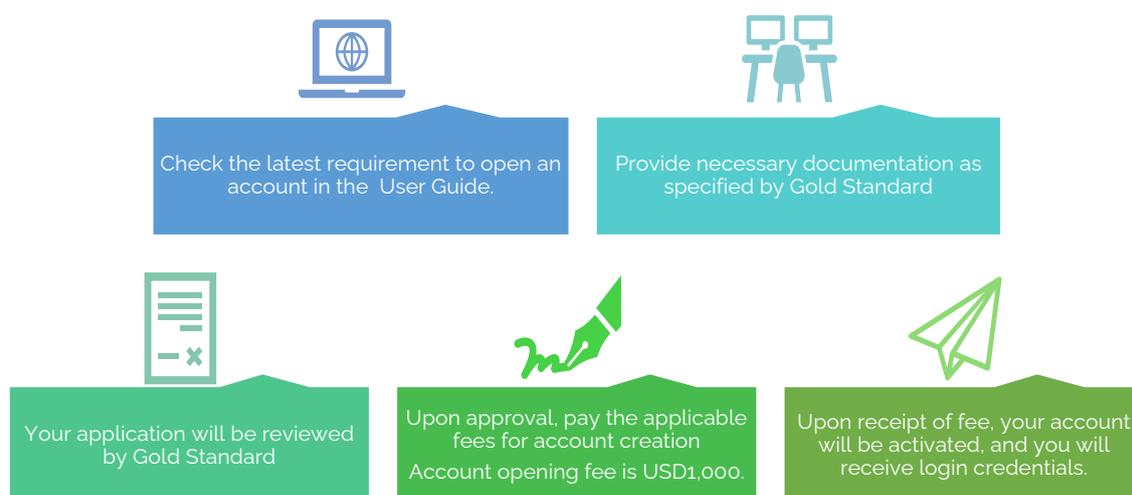
	USD0.25/credit (USD 0.20/credit for projects in least developed countries (LDCs))	USD0.15/credit plus 2% of issuance (USD0.10/credit plus 2% of issuance for projects in Least developed countries (LDCs))
Crediting Period Renewal	USD2,000 (Per project)	
Design Change Review	USD1,000 (Per project)	
Deviation Reconsideration Request	USD1,000 (Per project)	
External Costs (Not Tracked by Gold Standard)		
<ul style="list-style-type: none"> • Project development fees include project development and operations, monitoring and consultants' fees. • Auditing fees payable directly to the VVB 		

Note: The fee schedule is subject to changes by Gold Standard. For more updated information, please visit Gold Standard's [fee schedule](#) webpage.

5.2.4.2 Opening of Gold Standard Registry Account

As part of the Gold Standard project certification process, project developers must open an account on the Gold Standard [Impact Registry](#) and [Digital Assurance Platform](#). This account allows the transfer and retirement of credits and submission of project documentation for review. Steps to open a Gold Standard Impact Registry account is summarised in Exhibit 87.

Exhibit 87: Steps to open a Gold Standard Impact Registry account.



The Gold Standard Impact Registry account structure consists of the following components:

Account Holder

- This is the primary entity, typically a company or organisation, that holds the main account.

Users

- These is the staff members at the account holder's company who have access to the account.

Projects and Products

- Accounts can contain projects or products, such as carbon credits. Projects and their respective documentation are submitted via a new digital assurance platform and linked to the relevant Registry account. Products, such as Gold Standard Verified Emission Reductions (GS VERs), are issued directly into the linked Registry account. These products can then be transferred to other accounts as needed.

Please refer to the Registry [User Guide](#) for the latest update process to open an account.

Once a Registry account has been opened, please see the [Assurance Platform Authentication Manual](#).

5.3.4.3 Selecting Suitable Methodologies

Selecting the appropriate methodology is a critical step in developing a VCM project under the Gold Standard. Methodologies provide the necessary requirements and procedures to determine project boundaries, identify baselines, assess additionality, monitor relevant parameters, and ultimately quantify GHG emission reductions or removals.

Steps to Select a Suitable Methodology

Before the project starts, project developers should:

Step 1: Check if there is a relevant methodology for the proposed project.

Step 2: Examine the available and upcoming [mitigation and removals options](#) under Gold Standard for the Global Goals to get a high-level overview of feasible scopes.

Step 3: For a more comprehensive review, use the [methodology tool](#) to identify eligible and available methodologies for Gold Standard for the Global Goals.

If a suitable methodology is not available, there is a [procedure](#) for methodology approval. Initial concepts, whether for entirely new methodologies or revisions to existing ones, can be submitted to Gold Standard for approval. There may also be certain methodologies of interest under development; the status of methodologies under development can be followed [here](#).

After identifying a suitable methodology, please ensure that:

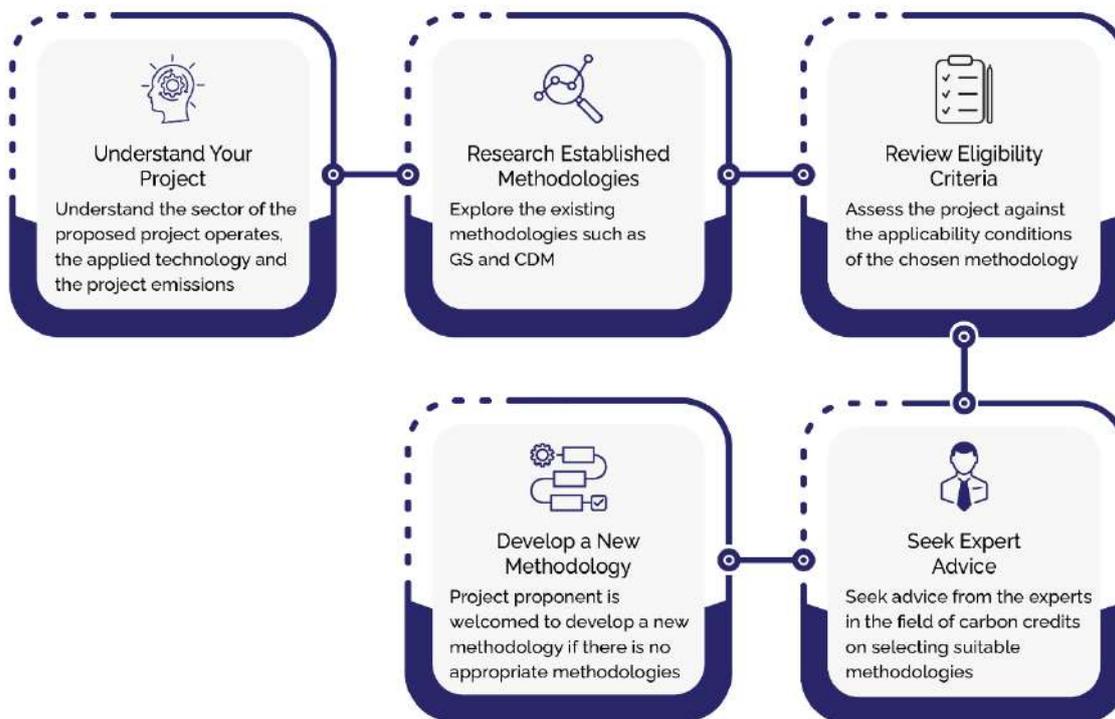
- the carbon project's eligibility by reviewing the [Principles & Requirements](#) and the relevant [Project Activity Requirements](#). Please confirm the basic project design and evaluate it against [Gold Standard safeguarding Principles](#).
- the carbon project comply with Product Requirements, specifically [GHG emission reductions and sequestration product requirements](#).
- you should use the latest version of the methodology and any applicable tools at the time of the initial submission (preliminary review).



All projects must attain Gender Sensitive Status and adhere to Principle 2 – Gender Equality and Women's Rights of the Safeguarding Principles and Requirements, ensuring no negative impacts on women, men, girls, or boys. Additionally, projects must align with Sustainable Development Goal 5 (Gender Equality) and other relevant SDGs, demonstrating significant contributions to gender equality. Further guidance is available in the [Gender Equality Requirements & Guidelines](#).

Exhibit 88 shows the systematic steps in finding a suitable methodology for a proposed project.

Exhibit 88: Finding a suitable methodology.



Source: Illustration based on CDM Methodology Booklet

5.3.4.4 Preparing the Project Design Document and Stakeholder Consultation

As part of the project planning process, the project developer must prepare a Project Design Document (PDD) and conduct a stakeholder consultation.

To register a project, the draft project design needs to be prepared as early as before the preliminary review process, where project developers are required to submit their project concept to Gold Standard for Preliminary Review.

A PDD needs to be prepared for Validation using the [Project Design Document \(PDD\) Template](#) which is available on the Gold Standard website. You may refer to the [Template Guide](#) for guidance and tips.

In the PDD, project developers are required to describe the details of the project and project activities, including project location, start date, project crediting period and ownership of the GHG emission reductions or removals.

Project proponents will also have to demonstrate additionality, identify the most plausible baseline scenario, estimate the GHG emission reductions or removals in the baseline and project scenarios and set out the data and parameters that will be monitored throughout the project. All the monitored data and parameters of the project shall be included in the PDD.



Key project documentation, except for confidential information, will be publicly accessible through the Impact Registry. If PDD contains confidential or proprietary information, project developers should submit the documentation in two versions: a. One version with all confidential/proprietary information obscured (e.g., covered with black ink) b. A complete version containing all confidential/proprietary information, which will be treated as strictly confidential by all parties handling the documentation (VVBs, Gold Standard, Gold Standard Technical Advisory Committee, and Gold Standard NGO Supporters).

Project Boundary

Where possible, include a flow diagram of the project boundary based on the list of facilities, systems, and equipment that will be installed or modified by the project. Specify sources and GHGs in the project boundary in accordance with the applied methodologies. Describe emission sources and GHGs included for calculating project emissions, baseline emissions, and, if applicable, leakage emissions.

Project Start Date

The project start date is defined in the [Principles & Requirements](#) section 4.1.39 as “the earliest date on which the Project Developer has committed to expenditures related to the implementation of the project”, unless otherwise stated in the applied Activity/Product Requirements (e.g. LUF Requirements). This definition excludes the purchase or option to purchase the land where the project is intended to take place.

Project Crediting Period

All Gold Standard VCM projects operate on a renewable 5-year cycle. The [Activity Requirements](#) and/or [Product Requirements](#) governs the maximum number of Design Certification Renewals allowed for specific project types. In the absence of any such

stated Requirement, a Project is limited to one Renewal (i.e. maximum 10 years certification).

[Afforestation & Reforestation \(A/R\) Projects specific](#): The crediting period shall be a minimum of 30 years and maximum 50 years. The project developer shall select the crediting period based on the characteristics of the project.

[Agriculture \(AGR\) Projects specific](#): The crediting period shall be a fixed 10-year period unless otherwise stated in applicable Impact Quantification Methodology

According to the Principles & Requirements, all projects who seek a Crediting Period Renewal shall do so every 5th year, and must apply the newest versions of the methodologies, tools and standard documents, demonstrate ongoing finance need, redefine the baseline scenario, and update its monitoring system accordingly. At the time of project renewal, The A/R and AGR projects shall update the baseline following the applied Impact Quantification Methodology requirements.

Additionality

All Gold Standard projects must show that their impacts are additional compared to their baseline scenario, meaning the benefits go beyond what would occur in a business-as-usual situation. Additionally, carbon projects need to demonstrate both Financial Additionality and Ongoing Financial Need.

To demonstrate Financial Additionality, carbon projects shall use either a UNFCCC-approved additionality tool, Gold Standard-approved additionality tool, or Activity Requirements to demonstrate project additionality. Where appropriate under specific Activity Requirements, small-scale Gold Standard projects can use the latest version of the CDM [Methodological Tool - Demonstration of additionality of small scale project activities](#) to demonstrate additionality. Please refer to the [Gold Standard Principles & Requirements](#) for a more detailed information.

Project developers must also provide a brief narrative explaining how the revenue from Gold Standard certification is crucial for the project's ongoing sustainability.

Stakeholder Consultation

Conducting a stakeholder consultation is a crucial part of the Gold Standard certification process. It ensures that all relevant stakeholders are engaged, their views are considered, and any potential impacts of the project are addressed.

The key highlights for the stakeholder consultation are outlined as below:

Section	Details
Applicability	The requirements specified apply to all project activities for which the project developer/Coordinating and Managing Entity (CME) seeks certification under GS.
General Requirements	Identify, engage, and consult stakeholders in a meaningful manner to improve project design and outcomes.

	<p>Inform stakeholders about the projects and discuss their likely impacts (both positive and negative) during the design, planning, and implementation stages.</p> <p>Establish an ongoing engagement process for stakeholders to provide input, feedback, and raise concerns throughout the project life.</p>
<p>Timing of Stakeholder Consultation</p>	<p>Stakeholder Consultation should be carried out before the project's start date.</p> <p>However, if the Stakeholder Consultation occurs after the project's start date (retroactive project), the project developer must:</p> <p>a. Clarify why the consultation was not conducted before the project start date, b. Conduct the consultation with relevant stakeholders as soon as possible, and c. Explain how the feedback received during the consultation was incorporated into the project's design and implementation.</p>
<p>Minimum Group of Stakeholders to be Consulted</p>	<ul style="list-style-type: none"> • Local people, communities, and/or representatives who are expected to be directly or indirectly affected by the project. • Stakeholders with land-tenure rights within or adjacent to the project and marginalised individuals and groups. • Local policymakers and representatives of local authorities. • National government officials or National Focal Point (e.g., Designated National Authority). • Local non-governmental organisations (NGOs), Women Groups working on topics relevant to the project. • Gold Standard representative. • Relevant international Gold Standard NGO Supporters with representation in the region and all Gold Standard NGO Supporters located in the host country of the project.
<p>Means of Inviting Stakeholders</p>	<ul style="list-style-type: none"> • Invite stakeholders in an open and transparent manner, ensuring equal opportunity for all stakeholders to participate in meetings and provide feedback. • Stakeholders should be invited at least 30 days before the physical meeting. • The invitation method should be appropriate, considering the project's context, stakeholders, and local and national circumstances. • Invitations should use suitable language and measures, ensuring they are adequate and effective. • Invitations must be gender-sensitive, making efforts to gather input from women and marginalised groups. • Stakeholder consultations should be open to anyone wishing to attend and participate, with no one being denied access.
<p>Information to be Made Available to Stakeholders</p>	<ul style="list-style-type: none"> • Non-technical summary of the project, including design, technology, objectives, scale, duration, and implementation plan. • Summary of economic, social, and environmental impacts as per Safeguarding Principles & Requirements. • Summary of likely contributions to Sustainable Development Goals (SDGs). • Other relevant information to help stakeholders understand the project. • Preliminary agenda for the event. • Contact details of a project developer's representative.

	<ul style="list-style-type: none"> Means and methods to provide further feedback for those unable to attend the physical meeting.
Physical Meeting(s) and Feedback Round	<ul style="list-style-type: none"> Conduct a minimum of two rounds of consultations: a mandatory physical meeting and stakeholder feedback round lasting at least 30 days. Ensure the place and timing of the physical meeting(s) are appropriate for all relevant stakeholders. Encourage equal and effective participation by both men and women, marginalised individuals, and groups. Provide feedback to stakeholders on how comments received in the physical meeting(s) have been considered and seek further comments during the feedback round.
Stakeholder Consultation Documentation	<ul style="list-style-type: none"> Use the Stakeholder Consultation Report template to document all steps taken to meet the requirements and provide evidence of compliance. Submit the stakeholder consultation report to Gold Standard at the time of first submission (preliminary review).
Ongoing Reporting	<p>Provide information in the annual report and Monitoring Report on concerns identified during project implementation and measures taken to address them.</p> <p>Report any stakeholder comments received after validation and actions taken to address them at the time of the next verification or earlier as part of the annual report.</p>

It is important to check the latest [requirements](#) and additional [guidelines](#) of the Stakeholder Consultation from Gold Standard website. The general step by step to conduct Stakeholder Consultation are as below:

1. Prepare for the Consultation

- i. Review Guidelines:
 - a. Familiarise yourself with the [Gold Standard Stakeholder Consultation and Engagement Requirements](#) and [Gold Standard Stakeholder Consultation and Engagement Guidelines](#).
 - b. Understand the objectives and scope of the consultation.
- ii. Identify Stakeholders:
 - a. Identify all relevant stakeholders, including local communities, government agencies, NGOs, and other interested parties.
 - b. Ensure a diverse representation of stakeholders to capture a wide range of perspectives.
- iii. Plan the Consultation:
 - a. Develop a Stakeholder Consultation Plan outlining the objectives, methods, and timeline for the consultation.
 - b. Decide on the time and place for the physical meeting(s) to ensure maximum participation.

c.

2. Invite Stakeholders

- i. Means of Invitation:
 - a. Use various methods to invite stakeholders, such as public notices, direct invitations, emails, and social media.
 - b. Ensure that invitations are sent out well in advance to allow stakeholders to prepare and attend.
- ii. Provide Information:
 - a. Share relevant information about the project with stakeholders before the consultation. This includes project objectives, potential impacts, and benefits.
 - b. Make the information available in accessible formats and languages.

3. Conduct the Consultation

- i. Physical Meeting(s):
 - a. Hold the consultation meeting(s) at a convenient location and time for stakeholders.
 - b. Facilitate the meeting to encourage open and inclusive discussions.
 - c. Use visual aids, presentations, and other materials to explain the project clearly.
- ii. Gather Feedback:
 - a. Encourage stakeholders to share their views, concerns, and suggestions.
 - b. Document all feedback received during the consultation.

4. Consider and Incorporate Feedback

- i. Review Comments:
 - a. Review all comments and feedback received from stakeholders.
 - b. Assess the feasibility and relevance of the suggestions and concerns raised.
- ii. Incorporate Feedback:
 - a. Incorporate relevant feedback into the project design and implementation plan.
 - b. Make necessary adjustments to address stakeholder concerns and improve project outcomes.

5. Provide Feedback to Stakeholders

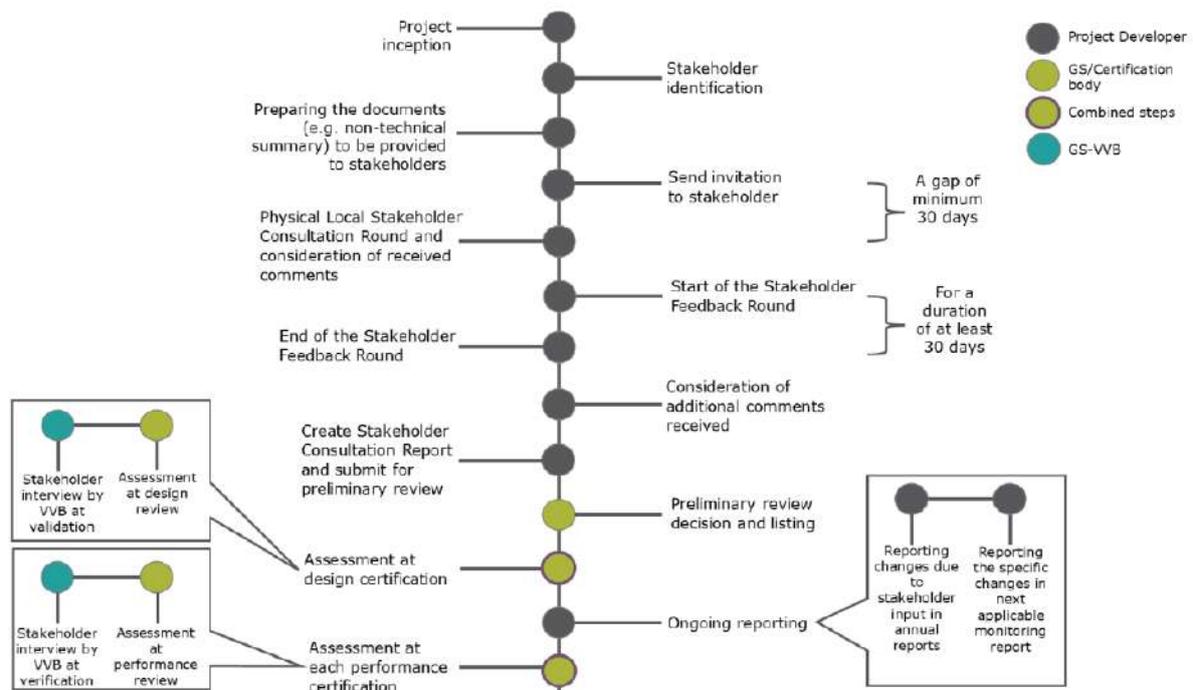
- i. Feedback Round:
 - a. Conduct a feedback round to inform stakeholders about how their input has been considered and incorporated.
 - b. Share the revised project plan and explain any changes made based on stakeholder feedback.
- ii. Ongoing Communication:
 - a. Establish a continuous input and grievance mechanism to allow stakeholders to provide feedback throughout the project lifecycle.
 - b. Maintain regular communication with stakeholders to keep them informed about project progress and developments.

6. Document the Consultation Process

- i. Documentation:
 - a. Document the entire stakeholder consultation process, including the Stakeholder Consultation Plan, invitations, meeting minutes, feedback received, and how it was addressed.
 - b. Ensure that all documentation is clear, comprehensive, and accessible.
- ii. Reporting:
 - a. Prepare a [Stakeholder Consultation Report](#) summarising the process and outcomes.
 - b. Submit the report to Gold Standard as part of the project documentation.

Exhibit 89 presents a schematic diagram of a stepwise approach for conducting stakeholder consultation and establishing continuous input and grievance mechanism.

Exhibit 89: Steps for conducting stakeholder consultation.



Source: <https://globalgoals.goldstandard.org/102-par-stakeholder-consultation-requirements/>.

5.3.4.5 Stakeholder consultation and grievance mechanism establishment (from Gold Standard's [Stakeholder Consultation and Engagement Requirements](#))

Step 1: Preliminary Review

After completing the stakeholder consultation process, a project will have all the necessary documentation to proceed to the Preliminary Review stage.

The Preliminary Review assesses whether the project has the potential to meet the Gold Standard Requirements and can therefore advance to listed status. To reach this decision Gold Standard will review the draft documentation submitted. The Gold Standard may request clarifications if/where required.

Steps to complete Preliminary Review

1. Compile Documentation:
 - i. Ensure all required documents are complete and accurate.
 - ii. The key documentations as below:
 - [Preliminary Review Request Form](#)
 - [Completed Stakeholder Consultation Report](#)
 - [Signed GS Cover Letter](#)
 - [Signed Gold Standard Terms and Conditions](#)
 - Any other relevant documents
2. Submit Documentation:
 - i. Upload the compiled documents to the **Gold Standard Digital Assurance Platform**.
 - ii. Ensure that all documents are in the correct format and meet the submission guidelines.

 *Project developers or their representatives can request access to the [Assurance Platform](#) by completing the [provided form](#). Once the request is submitted, it will be reviewed. Users who already have approved access to the Gold Standard Impact Registry will be granted access to the Assurance Platform. If project developers do not have user access to the Registry, Gold Standard will seek approval from the Gold Standard Impact Registry Account manager. Companies that have not completed Gold Standard's KYC/AML process will be required to do so. Organisations without a Registry account will need to apply for one. An Individual can have multiple logins if they need access to Platform Accounts for multiple companies. In such cases, please submit a user registration for each organisation you need access for. Please refer to the [the Assurance Platform Authentication Guide](#) for more information.*

3. Pay Preliminary Review Fee:
 - i. Pay the applicable Preliminary Review fee as specified in the [Gold Standard Fee Schedule](#).
 - ii. Ensure that the payment is processed and confirmed to avoid delays in the review process.
4. Gold Standard Review:
 - i. The Gold Standard team will review the submitted documentation to ensure it meets all requirements.
 - ii. They will check for completeness, accuracy, and compliance with Gold Standard Principles & Requirements.
5. Address Feedback:
 - i. If the Gold Standard team provides feedback or requests additional information, address these promptly.

- ii. Make any necessary revisions to the documentation and resubmit if required.
6. Receive Preliminary Review Outcome:
- i. Once the review is complete, you will receive an outcome from the Gold Standard team.
 - ii. If the project passes the preliminary review, it will move on to the next stage of the certification process.

Timeline

Review dates are to be scheduled and managed by Gold Standard. As an approximate guideline a simple 'Completeness Check Review' can take as little as 14 days from submission of documents and payment of the fee. The timeline is 4 weeks for a more extensive review, (i.e. for new project types, methodologies, or products, or for projects applying the land use and forestry Activity Requirements). Check the [Principles & Requirements Section 5](#) for more detailed information on the Preliminary Review and its timelines.

Approval

Approval of the Preliminary Review grants the project "**GOLD STANDARD PROJECT LISTED**" status. This status makes the project publicly visible in the Impact Registry, allows for its promotion according to the claims guidelines, and gives the project the green light to proceed to the validation stage.

Step 2: Validation by an Independent Third-Party

Validation is an independent assessment conducted by an approved Validation and Verification Body (VVB), appointed by the project developer. This process involves a thorough review, which may include a field visit and/or a desk-based review, to impartially confirm that the project's design and monitoring system align with GS requirements and that the project can achieve the expected impact. Validation must be successfully completed within two years of the project being listed.

Steps to Undertake Third-Party Validation



Please note the following:

- the list of approved VVBs can be found on the [Gold Standard website](#).
- the digital [SDG Impact Tool](#) is to be submitted with the estimation of the climate and sustainable development impacts for **at least three Sustainable Development Goals (SDGs), including SDG 13 (Climate Action)**.
- **Once the VVB has completed the validation, the VVB will upload the Validation Report and any other relevant documentation directly into the assurance platform.**

The scheduling of validation timelines and cost should be coordinated directly with the contracted VVB.

Step 3: Project Design Certification Review

The Design Review is the final step in the documentation process after a project has received a positive validation from a Gold Standard-approved VVB. Once the third-party validation has been completed, the VVB will upload the Validation Report and any other relevant documentation onto the assurance platform. Gold Standard will conduct a completeness check and then initiate the global consultation - which will run for two weeks in parallel with the Design Review - and assign an expert to conduct a quality check of the project documents and Validation Report to ensure the accuracy, consistency and compliance of the project

Review findings are submitted to the GS-VVB and project developer through the platform. The GS-VVB will review these findings and, if applicable, make any necessary changes to the certification decision and submit to Gold Standard.

Steps to Initiate Project Design Certification Review

To begin the Design Review process, projects must:

1. Obtain a positive validation opinion from an approved VVB.
2. Submit required documentation:
 - o Ensure that the VVB submits the VVB-approved PDD, Final Validation Report, SDG Impact Tool, and all relevant supporting documentation.
3. Pay the Design Review fee:
 - o Pay the applicable fee for the. Refer to the Gold Standard [Fee Schedule](#) for an overview of the fees.

The review is concluded when all Corrective Action Requests (CARs) and Clarification Requests (CLs) are successfully closed. The date of 'Design Certification' is the last day of the 4-week Design Review period, even if the review is concluded after this period.

Design Review Checks

During the Design Review, the following aspects are checked:



Safeguards: Ensuring that safeguards are adequately covered by the project design.



Stakeholder Inclusion: Confirming that the project design includes stakeholder input and engagement.



Monitoring Plan: Verifying that there is a robust monitoring plan in place.



Baseline and Additionality: Ensuring that the baseline is credible and that the project demonstrates additionality.



Impact Estimation: Confirming that the estimation of climate and sustainable development impacts is credible.

Timeline

The review process lasts at least 4 weeks from the date the review is booked, provided all documents are submitted, and the fee payment is received.

Approval

Upon approval, the project achieves "**GOLD STANDARD DESIGN CERTIFIED**" status. This certification indicates that all relevant documentation, including the Project Design Document, Monitoring and Reporting Plan, and the final Validation Report, are made publicly available. The project can then be promoted in accordance with the claims guidelines and becomes eligible to proceed to the Performance Certification stage.

Step 4: Project Monitoring and Reporting

After achieving "GOLD STANDARD DESIGN CERTIFIED" status, the project developer is responsible for carrying out the project and implementing its monitoring system in line with the certified design.

Projects must:

- **Monitor Safeguards and Impacts:** Monitor the project's safeguards and impacts according to the certified Monitoring Plan.
- **Engage with Stakeholders:** Keep stakeholders continuously engaged throughout the project's lifecycle.
- **Submit Annual Reports:** Provide [Annual Reports](#) during years when verification is not conducted.
- **Prepare Monitoring Reports:** Prepare a [Monitoring Report](#) for verification to request the issuance of impact statements.

Step 5: Project Verification

Verification of the project activity is carried out through an independent assessment by an accredited VVB, chosen by the project developer. This process ensures that the project and its impacts adhere to Gold Standard Requirements and the relevant methodologies.

Components of Project Verification:

- **Site Visit:** The VVB may visit the project site to inspect activities, verify data, and engage with stakeholders.
- **Desk-Based Review:** Alternatively, or in addition to a site visit, the VVB may review project documentation remotely to ensure its accuracy and completeness.

Steps to Initiate Project Verification



After the VVB finishes the verification process, they will upload the Verification Report and any other pertinent documents directly to the [Assurance Platform](#). Once the documents are submitted, the Gold Standard Assurance and Review Management (ARM) Team will perform a completeness check and inform the VVB that the documents are ready for performance review.

Timeline

Please coordinate the scheduling and cost of verification directly with the contracted VVB. Verification is required at least once within the five-year certification cycle, with the initial verification to be completed within two years of either the project implementation date or the design certification date, whichever comes later. Please check the relevant Activity Requirements for project specific certification cycle requirements.

Step 6: Performance Review

Once the third-party verification is finished, the project documents are submitted tofor a comprehensive performance review. During this phase, project developers may be requested to provide clarifications or address require corrective actions.

Steps to Initiate the Performance Review

1. Obtain a positive verification opinion from an accredited VVB.
2. Submit required documentation:
 - o Ensure that the VVB submits the VVB-approved Monitoring Report, Final Verification Report, and all relevant supporting documentation to the [Assurance Platform](#).
3. Pay the Performance Review Fee:
 - o Pay the applicable fee for the performance review. Refer to the full [Gold Standard Fee Schedule](#) for detailed information on the fees.

The review is concluded when all Corrective Action Requests (CARs) and Clarification Requests (CLs) are successfully closed.

The Performance Review checks:

Adherence to Safeguards	Stakeholder Inclusivity	Impact Achievement
Ensuring that the project complies with all required safeguards.	Confirming that the project design includes stakeholder input and engagement	Verifying that the project has achieved the expected climate and sustainable development impacts.

Timeline

The review process lasts for a minimum of 3 weeks from the date the review is booked, unless otherwise specified in the methodology or Activity Requirements. The review may only be concluded when all Corrective Action/Clarification Requests are successfully closed.

Approval

Approval results in the project achieving "CERTIFIED GOLD STANDARD PROJECT" status. Once a project has received 'Certified Project Status,' it can choose to issue Gold Standard certified carbon credits.

Carbon Credit Issuance Fees

For detailed information on issuance fees, refer to the [Gold Standard Fee Schedule](#). For issuance fees, a carbon project can select either the Cash-Per-Credit Fee Structure or the Share of Proceeds Fee Structure. With the Cash-Per-Credit option, all fees are paid in cash. Alternatively, the Share of Proceeds option allows a project to pay part of its fees in carbon credits. This option is available only for carbon projects in the Energy & Waste sectors.

Upon payment of the applicable issuance fee, Gold Standard will transfer the GS-VERs to the designated Registry Account Holder, as defined in the Gold Standard [Cover Letter](#) submitted at Preliminary Review.

Once the GS-VERs are received by the project developer, they may be transferred or retired.

Step 7: Carbon Credit Retirement

Retiring carbon credits means permanently removing them from circulation, ensuring they cannot be sold or traded in the future. Here are the steps to retire the credits:

1. **Log in to Your Account:** Access the Gold Standard Impact Registry and log in with your credentials.
2. **Locate the Credits:** Navigate to the 'My Credits' page and identify the block of credits you wish to retire.
3. **Initiate Retirement:** Click the 'Actions' button next to the selected credits and choose 'Retire'.
4. **Select Credits to Retire:** In the Retire Credits dialogue box, specify the number of credits to retire. If retiring credits from multiple blocks, select the relevant blocks and click 'Actions' at the bottom of the page.
5. **Specify Use Case:** Select the appropriate use case from the drop-down menu (e.g., Voluntary, Compliance, or Other).
6. **Enter Retirement Attribution:** Enter the name of the organisation or individual on whose behalf the credits are being retired in the 'Using Entity' field. This is mandatory. Optionally, add a note with further details about the retirement.
7. **Set Privacy Preferences:** Choose whether to display the 'Using Entity' and 'Note' information publicly or keep it private.
8. **Review and Confirm:** Click 'Review Retirement' to verify all details. Once confirmed, click 'Initiate Retire'. Note that once a retirement is made, it cannot be changed.
9. **Second User Approval (if applicable):** If your account requires second user approval, a notification will be sent to other users on the account to approve the transaction.
10. **View Retirement Details:** Once the retirement process is complete, you can access the public retirement record in the Registry. You can also download the retirement certificate, which provides details of the retired credits and includes a link to the retirement on the Impact Registry.

Transfer, Retirement & Cancellation Fees are applicable as per the [Gold Standard Fee Schedule](#). Please refer to the latest Gold Standard [User Guide](#) for more information.

Step 8: Project Design Certification Renewal

The certification cycle for Gold Standard projects is based on a five-year renewable period. This means that to maintain Gold Standard Certified Project status beyond five years, a project must undergo Design Certification Renewal, a process that includes (i) validation by a VVB and (ii) review by Gold Standard. This process ensures that the project continues to meet the latest standards and methodologies set by Gold Standard.

Steps to Initiate Design Certification Renewal (Validation)

1. Achieve "Gold Standard Design Certified" status:
 - o Confirm that the project currently holds this certification status.

2. Update project Design and Monitoring Plan:
 - Apply the latest versions of relevant methodologies, tools, and standard requirements to the project Design and Monitoring Plan.
3. Identify and contract an eligible VVB:
 - Hire an approved VVB to perform the validation. A list of approved VVBs is available on the [Gold Standard website](#).
4. Submit updated documentation for revalidation:
 - SDG Impact Tool: Update and submit the SDG Impact Tool with the most recent data and impact estimates.
 - Project Design Document: Provide an updated PDD that reflects the new methodologies and baseline scenario.
 - Supporting documentation: Include all necessary supporting documents required for VVB revalidation.

After the VVB finishes the revalidation, they will upload the Validation Report and any other relevant documents directly to the [Assurance Platform](#). Once the documents are submitted, the Gold Standard ARM Team will perform a completeness check and inform the VVB that the documents are ready for review.

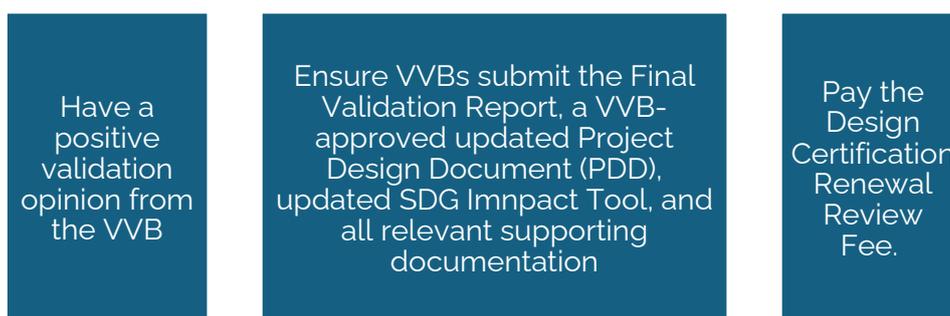
Timeline and Cost

Please coordinate the scheduling and cost of validation directly with the contracted VVB. The VVB must submit a renewal opinion by the final date of the current certification cycle. A delay in completion of revalidation shall result in a reduction of issued products/impact statements.

Steps to Initiate Design Certification Renewal (Review)

After the third-party validation for design certification renewal is completed, the documents are submitted by the VVB to the [Assurance Platform](#) for review. During this review, clarifications and resolutions of corrective actions may be requested as needed.

To initiate the review for design certification renewal, projects must:



5.3.4.6 Other Important Information About the Certification Process

Transition Projects

Eligible projects can transition from other standards to Gold Standard for the Global Goals. Detailed information, including eligibility criteria, requirements, and procedures, can be found in [ANNEX B of the GHG Emission Reduction and Sequestration Product Requirements](#) and guidance is available in [Transition Procedure for Transitioning Projects from Other Standards to Gold Standard for the Global Goals](#). Relevant documents and templates are accessible on the [Project Transition Page](#).

Design Change

Once a project design is certified, it should be implemented as outlined in the Project Design Document. Any major, permanent modifications or corrections, such as changes in project size, installed capacity, methodology, or the start date of the crediting period, must be submitted for review and re-certification through a formal design change request.

- Temporary Deviations: The design change procedure does not apply to temporary deviations. There is a separate process for short-term amendments.

To submit a design change request, project developers must adhere to the requirements in Annex A of the [Principles & Requirements](#). The template for submitting a design change can be found in the Design Document templates. Design changes are submitted to the [Gold Standard Assurance Platform](#). Upon receiving the formal request and payment of the design change fee, a review will be conducted.

Steps to Initiate a Design Change:

1. Complete Annex 4 of the relevant Project Design Document, including justification of the impact of the design change on the project's additionality, eligibility, safeguards, and estimated impact.
2. Conduct a stakeholder consultation, if necessary.
3. Update the Project Design Document.
4. Identify, contract, and pay a VVB to carry out validation.
5. Pay the Design Change Review Fee. Refer to the full Gold Standard fee schedule for more details.

Required Documentation for Review must be submitted to the [Gold Standard Assurance Platform](#):

- A VVB-approved Design Change Request Form
- An updated Project Design Document (PDD)
- Updated SDG Tool
- All relevant supporting documentation
- A final Validation Report

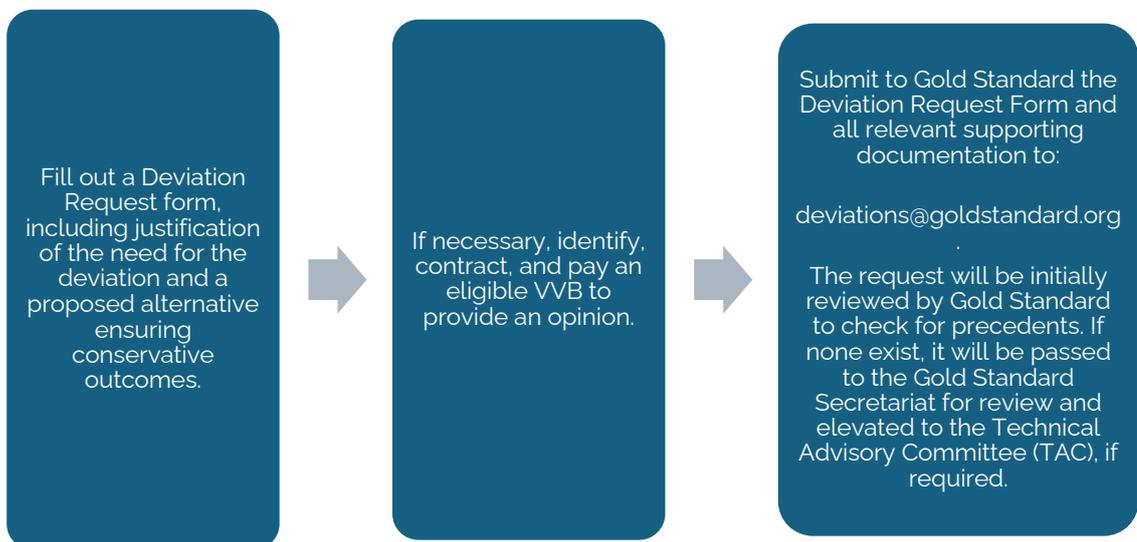
Deviations

If a project temporarily cannot adhere to the certified Monitoring Plan or meet specific deadlines, it can request an exception for a particular process or monitoring period. These deviations are approved individually by the Gold Standard Technical Advisory Committee or based on previously reviewed and published precedents.

The steps for submitting a deviation request are detailed in the [Deviation Approval Requirements and Procedures](#). You can access the [deviation request form](#) and the complete list of published deviations online.

For permanent modifications to a registered project activity, project developers must follow the Design Change Approval Process.

Steps to Initiate a Deviation Request:



Clarification Requests

To request clarifications or interpretations of the Gold Standard for the Global Goals requirements, complete the [clarification request form](#) and send it to help@goldstandard.org. The team will review your submission and provide a resolution within 10 working days.

Chapter 6

How to Formulate a VCM Methodology?

6.1 Chapter Summary

6.2 Verified Carbon Standard (VCS)

6.3 Gold Standard for the Global Goals (GS)



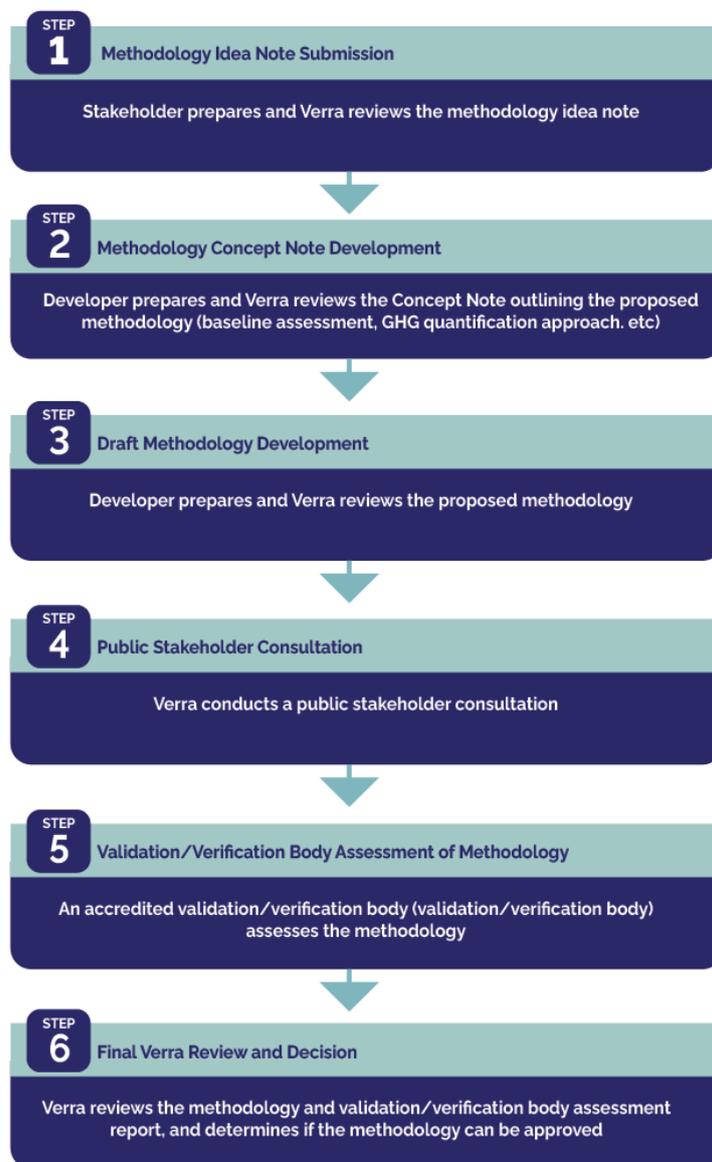
Chapter 6: How to Formulate a Methodology under the VCM?

6.1 Chapter Summary

This chapter provides a step-by-step guide for developing new methodologies, modules and tools, and revising methodologies under both the Voluntary Carbon Standard (VCS) and Gold Standard for the Global Goals (GS4GG, referred to as GS from here forth) programmes. The procedures for other international standards will be incorporated when appropriate.

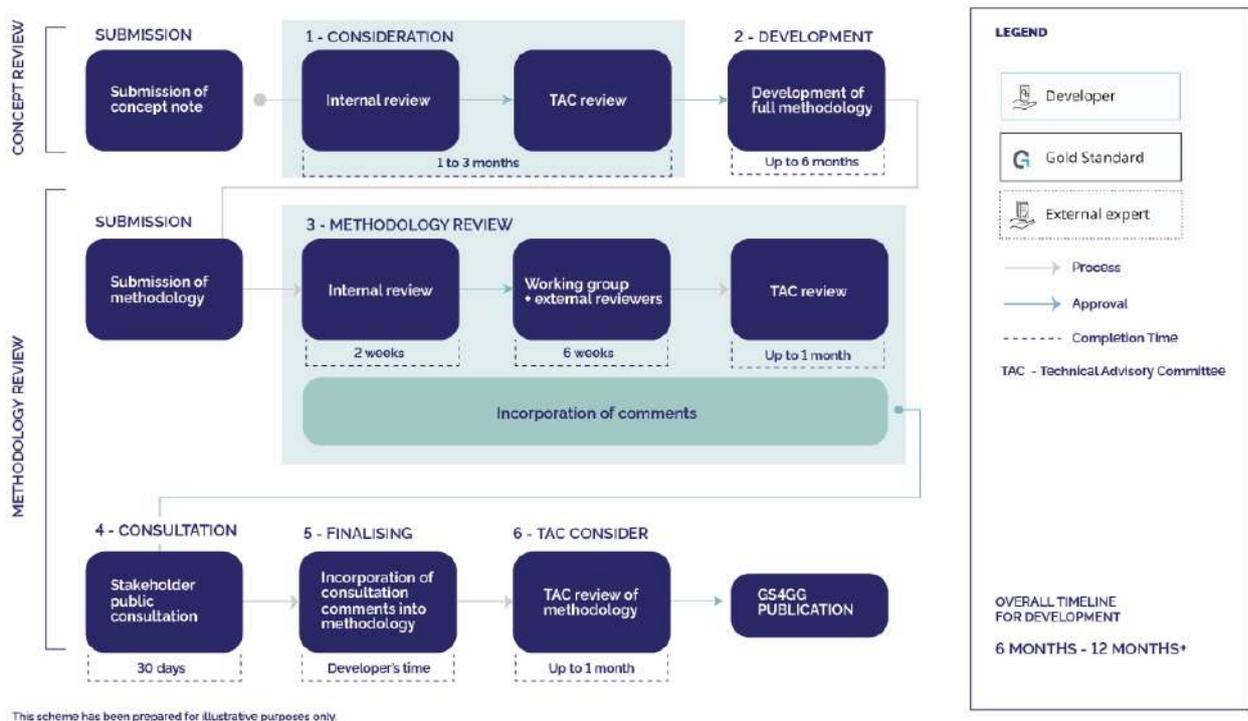
Verra and Gold Standard outline the specific procedures, requirements and applicable fees for methodology development, emphasising using designated templates for new methodology development and revisions.

The VCS development of methodology (new and revision), modules and tools process are illustrated as follows:



Source: VCS Methodology Development and Review Process, v4.4

For GS, the methodology development (new and approved methodology revision) and approval process is illustrated as follows:



Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

6.2 Verified Carbon Standard (VCS)

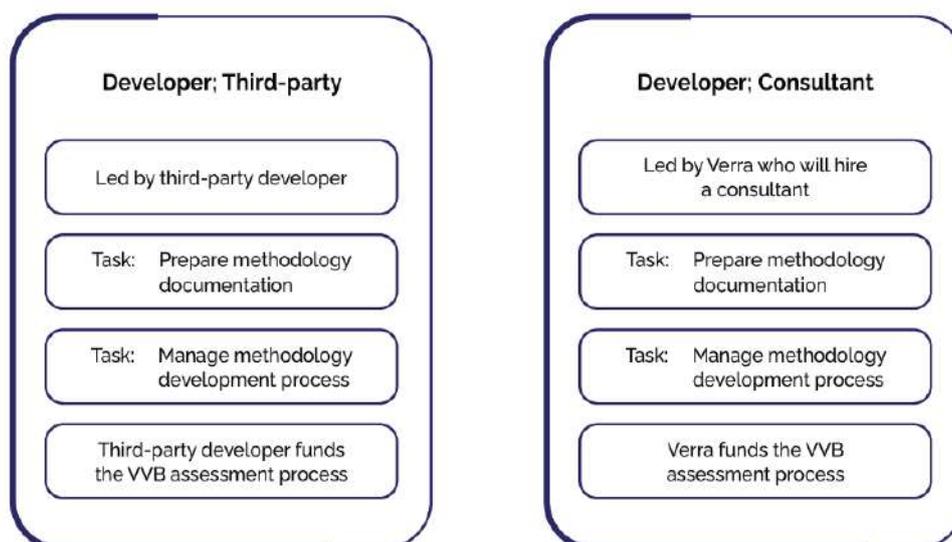
This section outlines the overarching rules and guidance, an overview of methodology development, and the fee for VCS. It also includes an overview of the possible status of methodologies in the development and review process, and previously approved methodologies.

6.2.1 VCS Overarching Rules and Guidance for Methodology Development

For Verra projects, project developers must use VCS-approved methodologies to quantify a project's GHG emission reductions, avoidance or carbon dioxide removals. If no suitable methodologies are available, project developers may consider developing their own methodologies. Experts or project developers can utilise their hands-on experience and skills to build tools best suited to their projects' needs. Once it has been determined that a methodology may proceed to the development or review process, Verra will determine the most appropriate path for methodology development.

Options for the development of new methodologies are displayed in Exhibit go.

Exhibit g0: Pathway options for methodology development.



Source: VCS Methodology Development and Review Process, v4.4

After selecting one of the options above, methodology developers may choose to develop their methodologies with engagement options or additional support, as shown in Exhibit g1.

Exhibit g1: Engagement options or additional support for methodology development.



Source: VCS Methodology Development and Review Process, v4.4

- 1. Verra may put the methodology development process on hold if the documentation does not meet reasonable standards or if the process does not result in a high-quality methodology.
- 2. Verra may reject the proposed methodology if its review determines that it could sanction or foster politically or ethically contentious project activities, produce a negative result or have an adverse effect on the integrity of the VCS Program or the operation of the larger carbon market.

Exhibit 92 illustrates three (3) types of status for each methodology in the development stage.

Exhibit 92: Methodology status in the development stage.

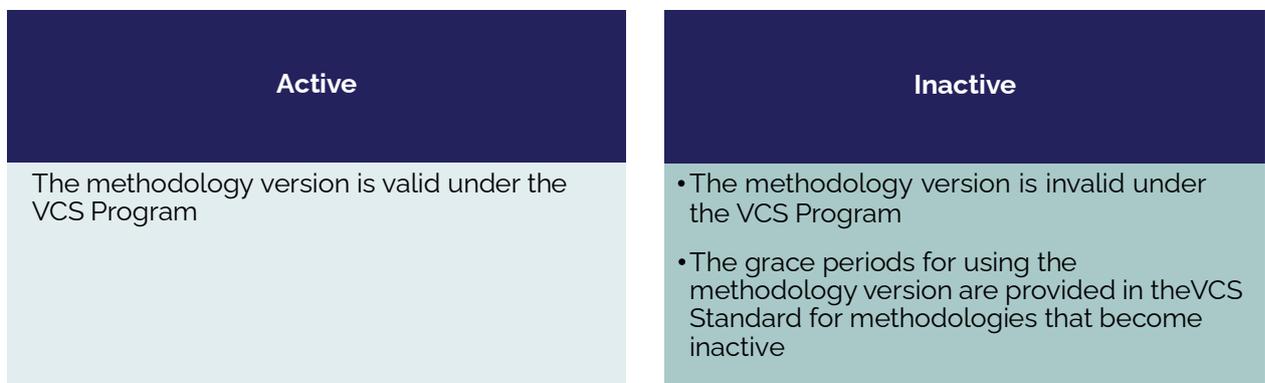


Source: VCS Methodology Development and Review Process, v4.4

 *The methodology status might change as the process develops.*

Once approved, there will be two (2) methodology versions, as displayed in Exhibit 93.

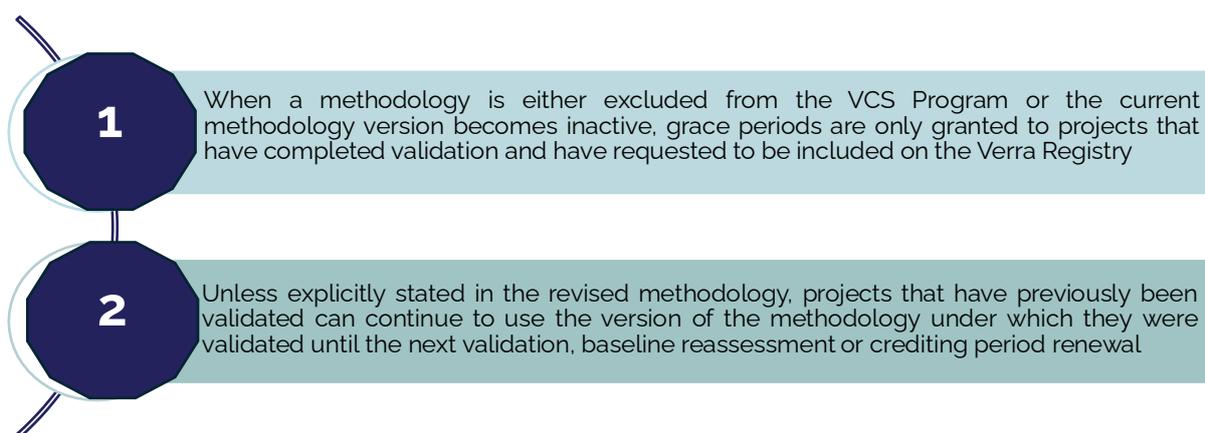
Exhibit 93: Approved methodology versions.



Source: VCS Methodology Development and Review Process, v4.4

A methodology grace period is a timeframe in which projects may apply a methodology, module or tool that has been revised, lately excluded or become inactive. The grace period deadline is the date of the issuance of the validation report (for the registration and crediting period renewal) or the verification report (for the baseline reassessment). The requirements of methodology grace periods are displayed in Exhibit 94.

Exhibit 94: Requirements of methodology grace periods.



Source: VCS Standard, v4.7

The grace periods for completing validation are set as in Exhibit 95.

Exhibit 95: Methodology grace periods.

Methodology is revised	Methodology of an approved GHG programme newly excluded from the VCS Program and replaced with a VCS methodology	Previously approved methodology becomes inactive
<ul style="list-style-type: none">• Project proponents may use the current methodology version for up to six (6) months after the approval of the new version• Unless explicitly stated on the Verra website	<ul style="list-style-type: none">• Project proponents may continue to apply the prior accepted methodology of the approved GHG programme for up to six (6) months after the approval of the VCS methodology	<ul style="list-style-type: none">• Project proponents may apply the methodology version for up to six (6) months after it becomes inactive• Unless explicitly stated on the Verra website

Source: VCS Standard, v4.7

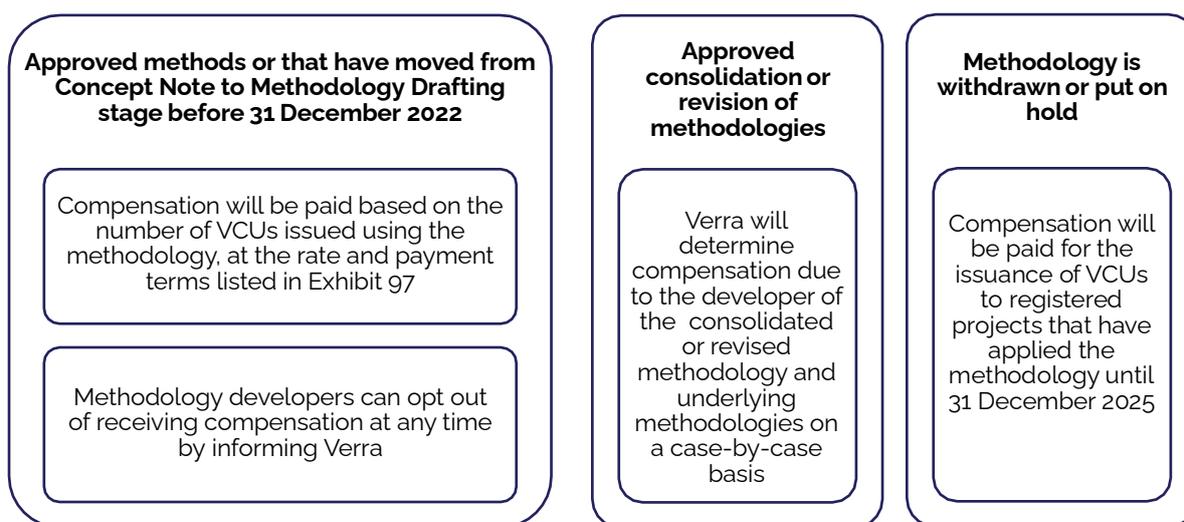


Do note that Verra reserves the right to set different grace periods.

Methodology developers are eligible for compensation until 31 December 2025 for methods approved under the VCS Program or that have progressed from the Concept Note Development stage to the Draft Methodology Development stage before 31 December 2022. Only methodologies developed as part of the VCS Program are eligible for compensation. Developers of methodology revisions, modules and tools are not involved in this compensation mechanism.

The compensation for methodology developers is illustrated in Exhibit 96.

Exhibit g6: Compensation for methodology developers.



Source: VCS Program Guide, v4.4

Exhibit g7 lists the details for cumulative VCU issuances using the applicable methodology from 1 January 2023 to 31 December 2025.

Exhibit g7: VCS methodology compensation rebate.

# of VCUs issued	USD/VCU
1 - 1,000,000	USD0.02
1,000,001 - 2,000,000	USD0.018
2,000,001 - 4,000,000	USD0.016
4,000,001 - 6,000,000	USD0.012
6,000,001 - 8,000,000	USD0.008
8,000,001 - 10,000,000	USD0.004
10,000,000 - 60,000,000	USD0.002

Source: Verra Program Fee Schedule, v1.0

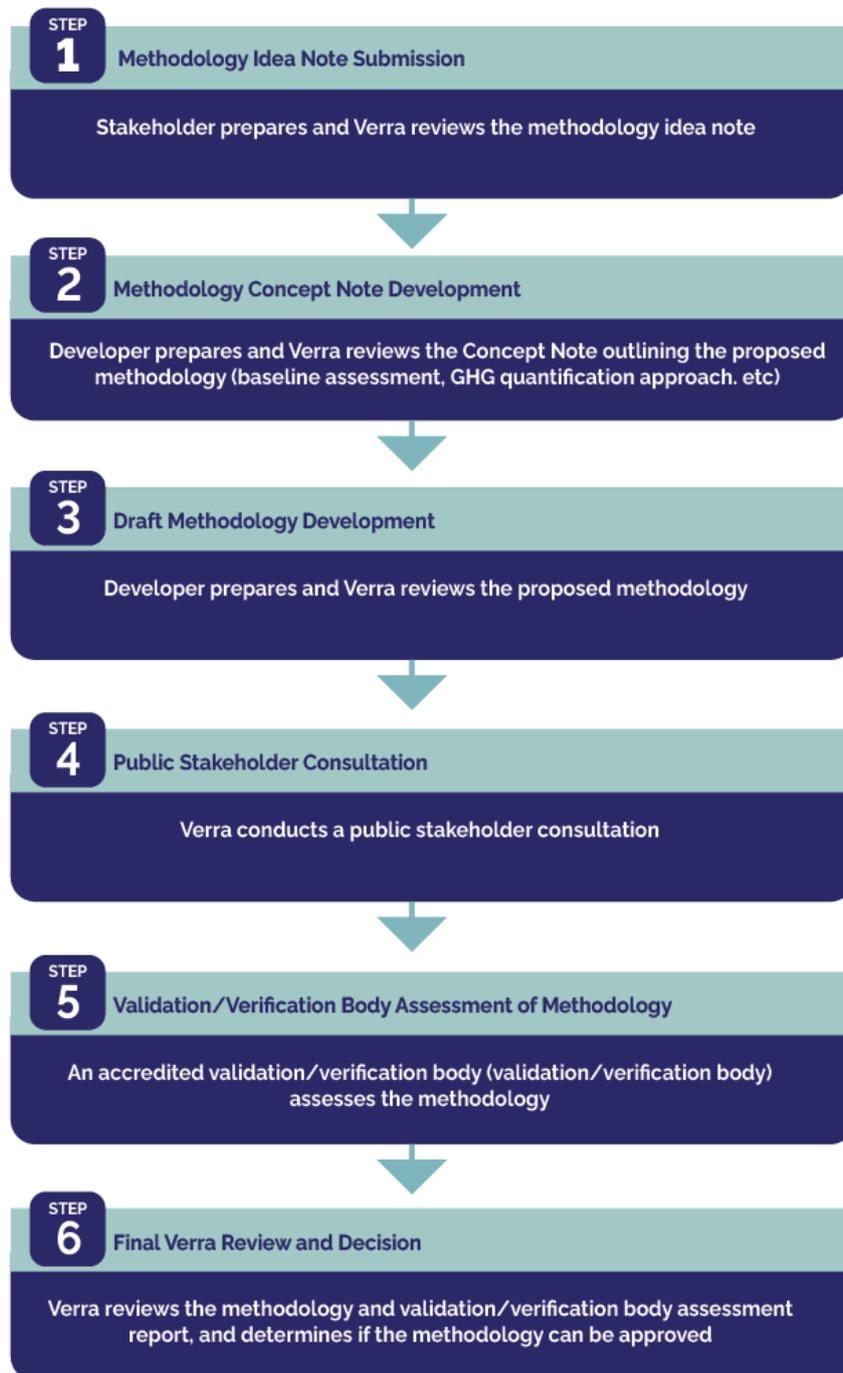


1. It should be noted that project proponents pay the same VCU issuance fee regardless of the methodology used for the project.
2. Verra pays the methodology developer's compensation to the methodology developer from the VCU issuance levy payments received by Verra.

6.2.2 VCS Procedures for Development of a New Methodology

Six (6) stages are involved in developing a new VCS methodology, as shown in Exhibit 98.

Exhibit 98: Stages for new methodology development.



Source: VCS Methodology Development and Review Process, v4.4

6.2.2.1 Methodology Idea Note Submission

Methodology developers shall use the [VCS Methodology Idea Note Template](#) to provide a summary of the proposed methodology's scope, without including any technical details, before submitting it for review on Verra's website.

The proposed methodology will be given preference and priority to proceed with the development process if it meets the following criteria listed in Exhibit 99 below.

Exhibit 99: Criteria of proposed methodology.

Broadly Applicable (i.e. a range of potential technologies, processes and geographic regions that may apply to related projects)	High Climate Change Mitigation Potential	Supports Sustainable Development	Free from Unmitigable Risks (social, environmental, legal or regulatory)
--	---	---	--

Source: VCS Methodology Development and Review Process, v4.4

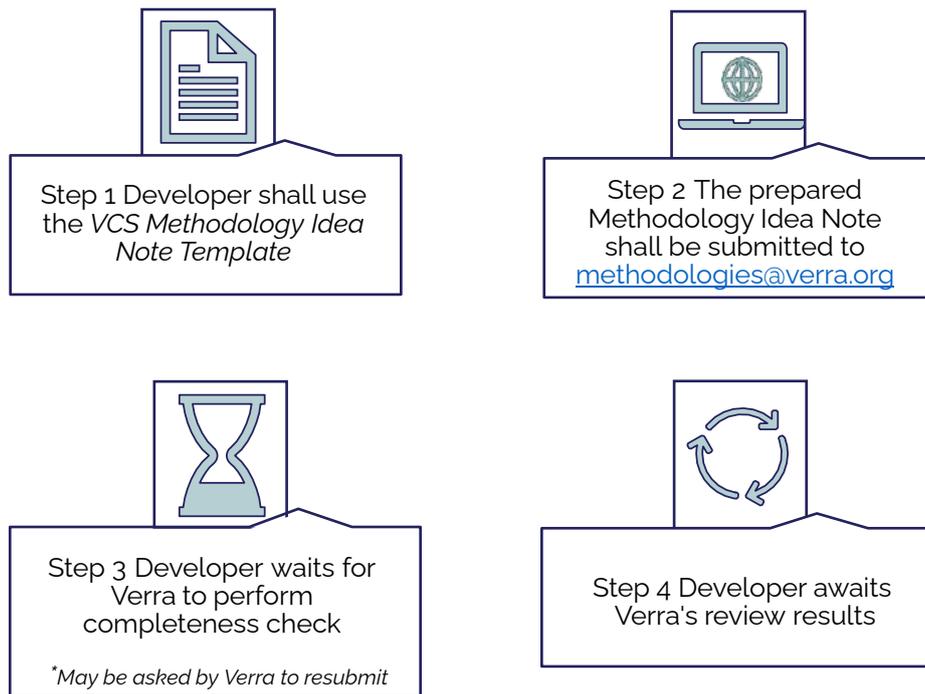


It should be noted that effective September 15, 2023, Verra will only review methodology idea notes for new or expanded methodologies with expected emission reductions or removals of 500 ktCO_{2eq}/year within five years.

See section 3.1.4 of [VCS Methodology Development and Review Process, v4.4](#)

Methodology Idea Note Submission involves the following steps, as shown in Exhibit 100.

Exhibit 100: Methodology Idea Note Submission process.

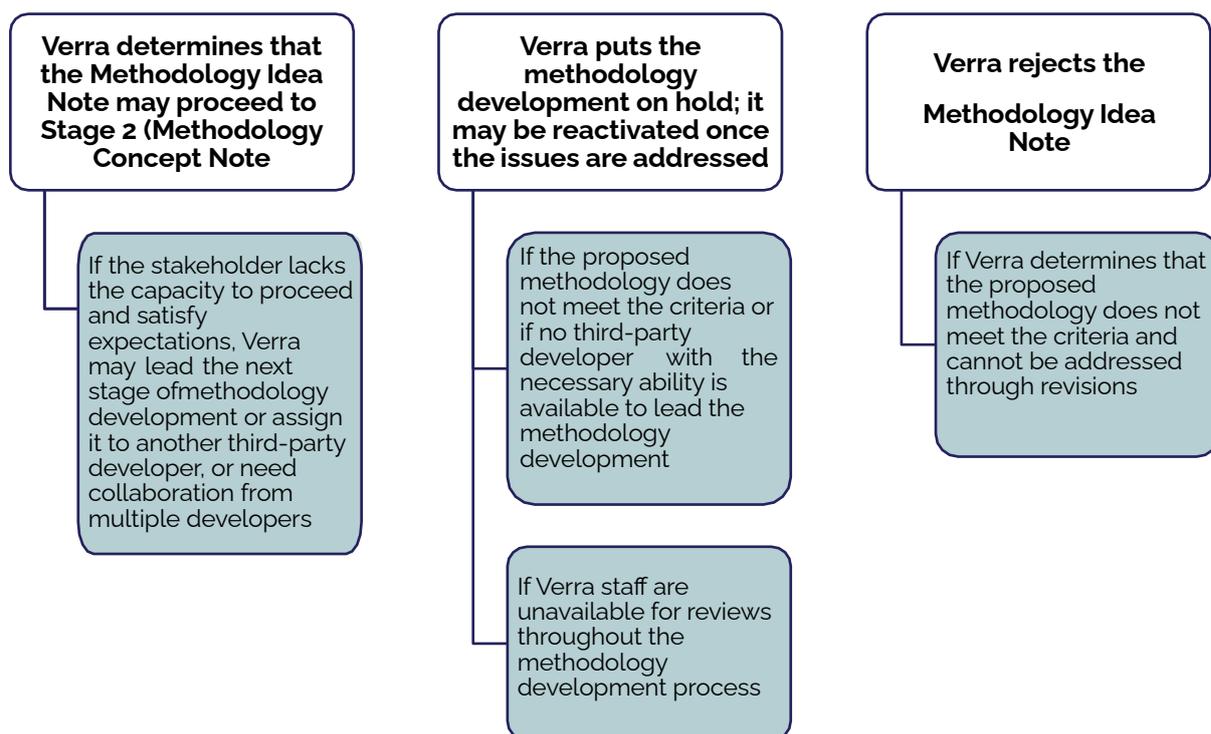


Source: VCS Methodology Development and Review Process, v4.4

 *The latest version of the [VCS Methodology Idea Note Template](#) can be found on [Verra's website](#):*

The potential outcomes of Verra's evaluation of the Methodology Idea Note are displayed in Exhibit 101.

Exhibit 101: Potential outcomes of Verra's evaluation of the Methodology Idea Note.

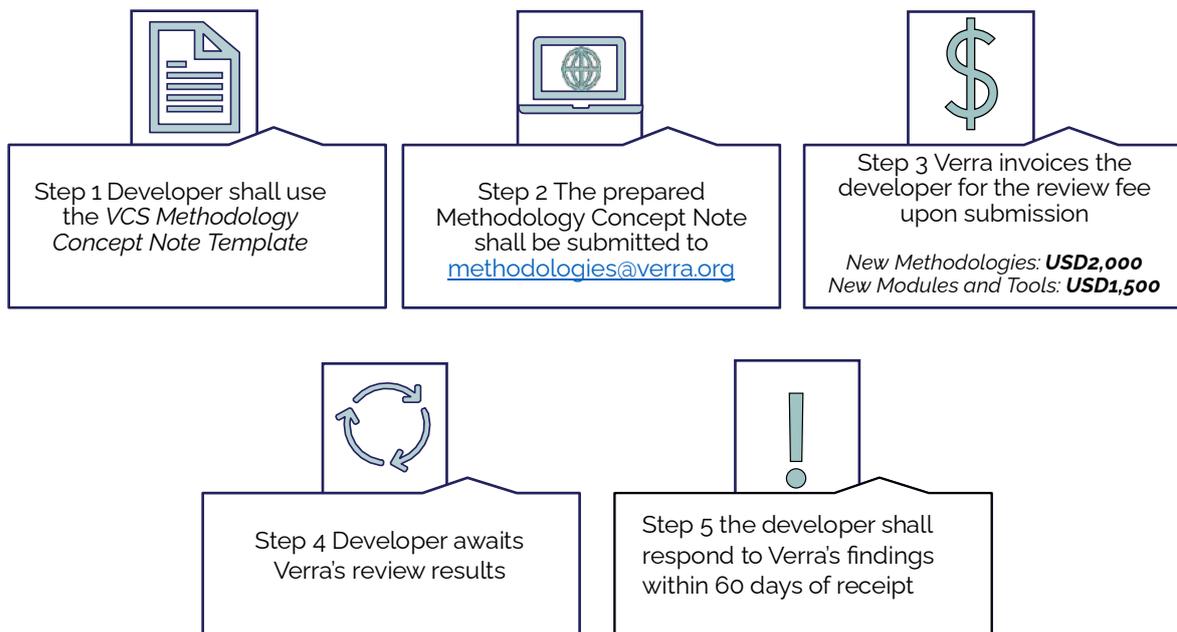


Source: VCS Methodology Development and Review Process, v4.4

6.2.2.2 Methodology Concept Note Development

The Methodology Concept Note is also referred to as a "proposed methodology" and outlines technical details and key methodological components to ensure compliance with VCS Program rules and requirements. The Methodology Concept Note Submission involves the following steps, as shown in Exhibit 102.

Exhibit 102: Methodology Concept Note submission process.

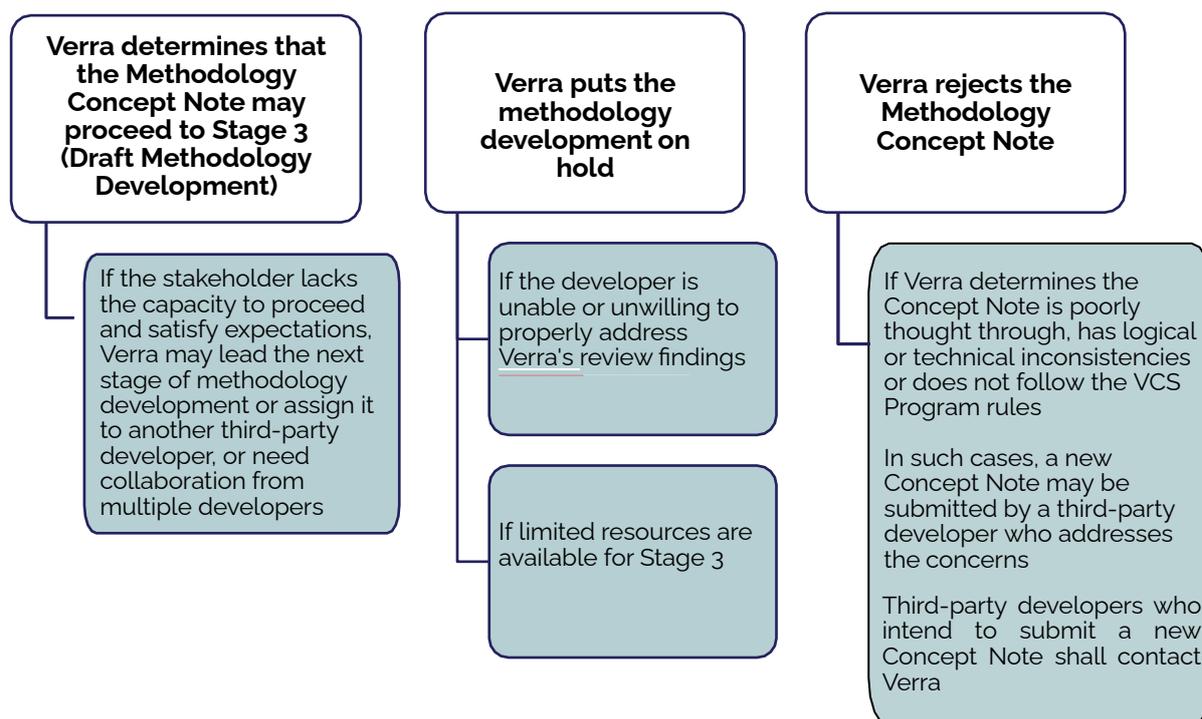


Source: *VCS Methodology Development and Review Process, v4.4 & Verra Program Fee Schedule, v1.0*

 Please find the latest version of the [VCS Methodology Concept Note Template](#) on [Verra's website](#).

The potential outcomes of Verra's evaluation of the Methodology Concept Note are displayed in Exhibit 103.

Exhibit 103: Potential outcomes of Verra's evaluation of the Methodology Concept Note.



Source: VCS Methodology Development and Review Process, v4.4

6.2.2.3 Draft Methodology Development

The methodology developer then prepares the draft methodology, which will be subject to review by Verra, public stakeholder consultation and independent assessment by a VVB. The lists of documents to be prepared and submitted to Verra are tabulated in Exhibit 104.

Exhibit 104: List of documents to be submitted to Verra for the Draft Methodology Development process.

New Methodologies	New Tools and Modules
Templates (Available on Verra's website)	
<u>VCS Methodology Template</u>	<u>VCS Module/ Tool Template</u>
Documents to Be Prepared and Submitted	
<ul style="list-style-type: none"> • Draft Project Description (PD) <ul style="list-style-type: none"> - Describes how the methodological approach may be applied in a project activity - Shall include (at a minimum) the cover page and sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.9, 1.11, 1.12, 1.13, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3, 4.4, 5.1 and 5.2 of the <u>VCS Project Description Template</u> • <u>Methodology Submission Form & Agreement</u> <ul style="list-style-type: none"> - The third-party developer shall submit a signed VCS Methodology Submission Form & Agreement to Verra within six (6) months of completing the Methodology Concept Note Development process. 	<ul style="list-style-type: none"> • Verra may request a (partial) drafted project description and additional sections if necessary to facilitate the methodology review.

Source: VCS Methodology Development and Review Process, v4.4



Please find the latest version of the [VCS Methodology Template](#), [VCS Module/Tool Template](#) and [Methodology Submission Form & Agreement](#) on [Verra's website](#).

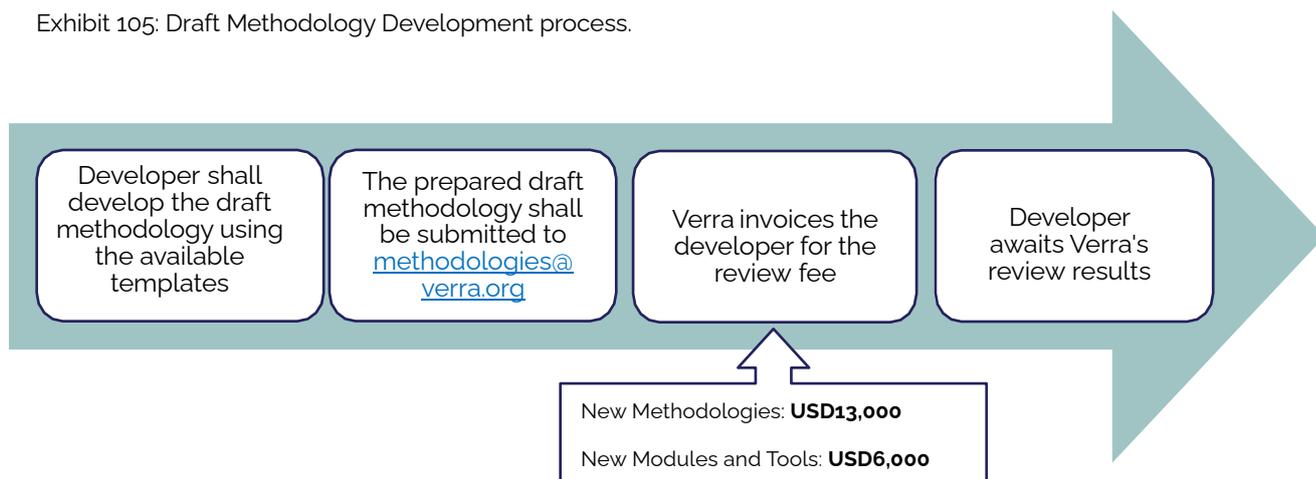
Supporting documentation is unnecessary until specifically requested during the review process.

Developers should use real project data or proxy data, but if neither is available, hypothetical data may be used instead.

The third-party developer shall submit to Verra a signed [Methodology Submission Form & Agreement](#), the draft methodology, and the draft PD within six (6) months of completing the Methodology Concept Note Development process.

Draft Methodology Development involves the following steps, as shown in Exhibit 105.

Exhibit 105: Draft Methodology Development process.



Source: VCS Methodology Development and Review Process, v4.4 & Verra Program Fee Schedule, v1.0



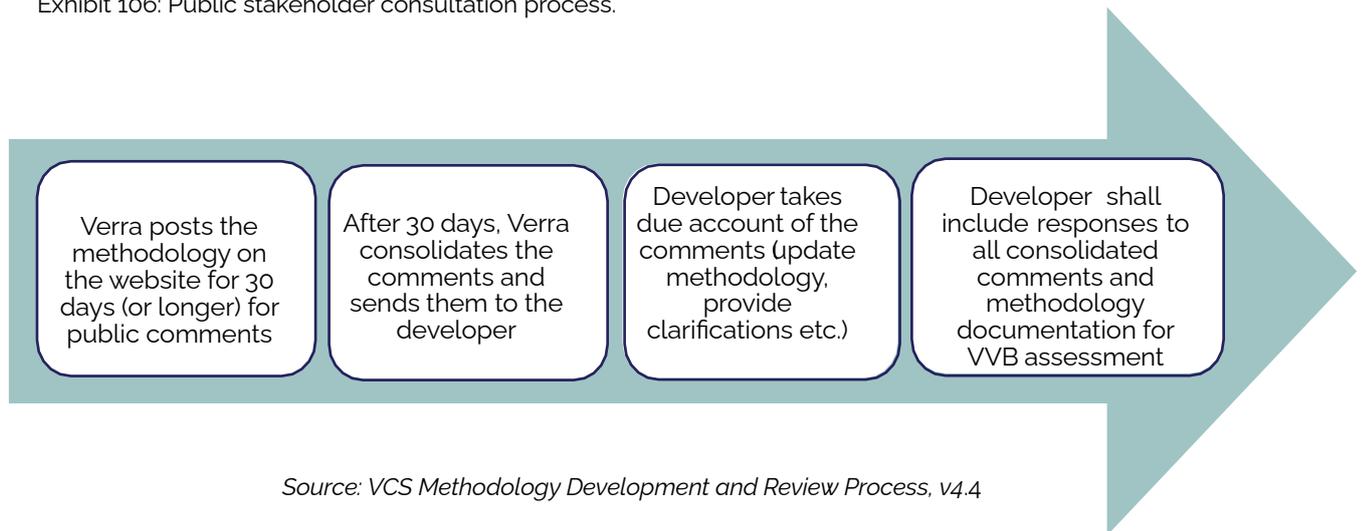
The developer shall pay the fees before Verra starts the methodology review.

Verra reviews the methodology to ensure that it has been completed in line with the VCS Program rules and requirements and is of sufficient quality to allow its assessment under the VCS methodology development process. The review is focused on ensuring that the methodology is well structured and clearly written, free of logical or technical errors, and compliant with VCS Program rules and requirements. If Verra's review of the draft methodology reveals that it is not yet of the required quality or does not adhere to VCS Program rules and requirements, the developer shall revise the draft methodology until Verra's review has been satisfactorily addressed.

6.2.2.4 Public Stakeholder Consultation

Verra invites public comments by posting the methodology on its website for 30 days. Comments shall be submitted to Verra using the template provided with the draft methodology. Respondents shall provide their name, organisation, country and email address and indicate whether they want to remain anonymous. Verra might host a webinar to provide an overview of the methodology. The public stakeholder consultation process is illustrated in Exhibit 106.

Exhibit 106: Public stakeholder consultation process.



Source: VCS Methodology Development and Review Process, v4.4

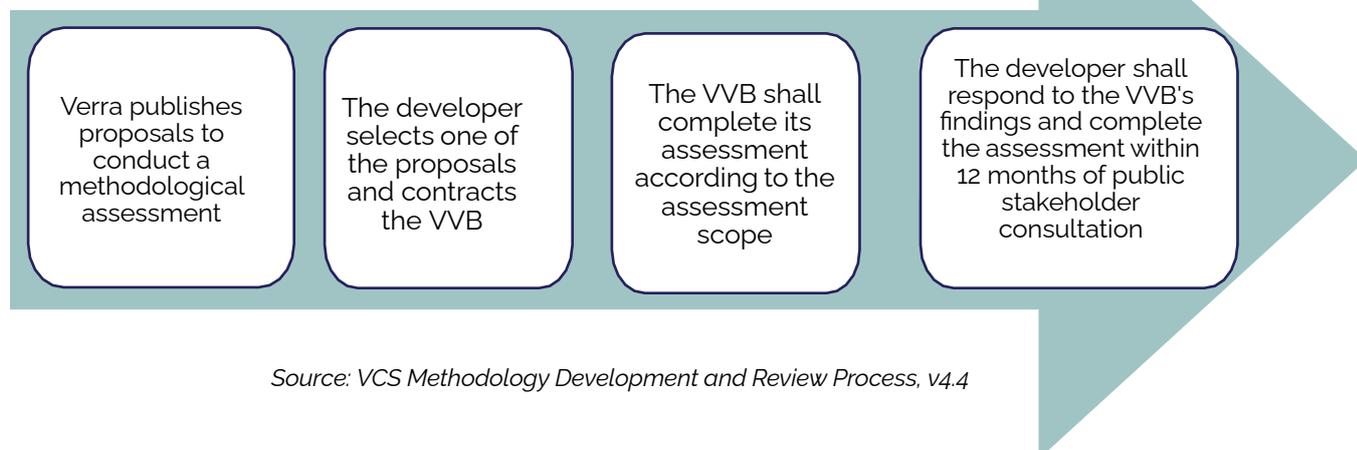


If significant changes are made to the methodology after the initial consultation, Verra might organise a second public stakeholder consultation.

6.2.2.5 VVB Assessment of Methodology

A proposed methodology, tool or module will be assessed by the VVB to determine if it meets the criteria outlined in the VCS Program document, VCS Methodological Requirements and any other criteria that may be relevant. The VVB assessment process is detailed in Exhibit 107.

Exhibit 107: VVB assessment process.



Source: VCS Methodology Development and Review Process, v4.4

The scope of the assessment of new methodology should be included (at a minimum), as tabulated in Exhibit 108.

Exhibit 108: Scope of assessment.

Scope of Assessment	Description
Relationship to Approved or pending methodologies	Assessment of whether any existing methodology may be reasonably revised to fulfil the proposed methodology's objective
Stakeholder consultation	Assessment of whether the developer considered all stakeholder comments, revised the methodology accordingly and gave clear and consistent responses to all stakeholder comments
Structure and Clarity of methodology	Assessment of whether the methodology is written clearly, logically, concisely and precisely enough to allow project developers to consistently implement projects and report project results in a transparent manner
Definitions	Assessment of whether the methodology's key concepts are defined clearly and appropriately and whether they are applied consistently
Applicability conditions	Assessment of whether the applicability conditions of the proposed methodology are appropriate, sufficient and in accordance with VCS Program rules and requirements
Project boundary	Assessment of whether an appropriate and adequate approach is provided for defining the project's physical boundary and sources, and types of GHGs included
Baseline scenario	Assessment of whether the approach used to determine the baseline scenario is suitable, adequate and in accordance with VCS Program rules and requirements
Additionality	Assessment of whether the approach/tools used to determine if the project is additional are appropriate, adequate and in accordance with VCS Program rules and requirements

Scope of Assessment	Description
Baseline emissions	Assessment of whether the approach for calculating baseline emissions is appropriate, adequate and in accordance with VCS Program rules and requirements
Project emissions	Assessment of whether the approach used to calculate project emissions is appropriate, adequate and in accordance with VCS Program rules and requirements
Leakage	Assessment of whether the leakage calculation approach is appropriate, adequate and in accordance with VCS Program rules and requirements
Net GHG emission reductions and/or removals	Assessment of whether the approach used to calculate the project's net GHG benefits is appropriate, adequate, conservative and in accordance with VCS Program rules and requirements
Monitoring	Assessment of whether the monitoring approach is appropriate, adequate and in accordance with VCS Program rules and requirements
Data and parameters	Assessment of whether the data and parameter specifications (available at validation and monitoring) are appropriate, adequate and in accordance with VCS Program rules and requirements
Uncertainty	Assessment of whether the approach to address uncertainty is appropriate, adequate and in accordance with VCS Program rules and requirements
Verifiable	Whether the methodology is sufficiently stated and specific to enable project developers to report project results in a transparent manner, which can be validated and verified with high confidence

Source: VCS Methodology Development and Review Process, v4.4

6.2.2.6 Final Verra Review and Decision

The most recent methodology drafts, VVB assessment report and methodology developer's responses to consolidated comments shall all be submitted to Verra to ensure compliance with VCS Program regulations and standards. The decisions made by Verra will be based on the review results, as shown in Exhibit 109.

Exhibit 109: Verra's potential review outcomes.

Decision	Description of Review Results
The methodology is rejected by Verra	<ul style="list-style-type: none"> The assessment report does not demonstrate that the methodology is approved
The VVB shall revise the assessment and issue a revised assessment report for further review by Verra	<ul style="list-style-type: none"> If Verra determines that the methodology has not been assessed by the VVB per VCS Program rules and requirements
The methodology is rejected if Verra's findings cannot be satisfactorily addressed	<ul style="list-style-type: none"> If Verra determines that the quality of the methodology is not sufficient or does not comply with VCS Program rules and requirements, the methodology developer is obliged to revise the methodology until all of Verra's findings have been satisfactorily addressed Verra may revise the methodology where deemed necessary and the VVB will assess the revised methodology and the methodology developer's responses
The methodology is approved by Verra	<ul style="list-style-type: none"> Verra will inform the methodology developer and the VVB A reference number is assigned to the approved methodology On Verra's website, the methodology, assessment report and stakeholder comments with responses are posted The methodology is now active and may be used as part of the VCS Program

Source: VCS Methodology Development and Review Process, v4.4

6.2.3 VCS Methodology Revisions

This section includes guidance and procedures for proposed revisions to approved VCS methods, modules and tools, and methodologies from other approved GHG projects. A revision to an approved methodology is considered an update of the current version of the methodology and the following applies:

- i. Methodological revisions are applicable when a proposed activity or measure is generally similar to an existing approved methodology, such as a VCS methodology or GHG programme and may be incorporated with reasonable modifications to that methodology; and
- ii. Unless approved by Verra, this shall not narrow the methodology or exclude project activities that are eligible under the current version.

Based on the extent of the revision, the VCS Program identifies two (2) types of methodology revisions, as tabulated in Exhibit 110.

Exhibit 110: Types of methodology revisions.

	Major Revision	Minor Revision
Impacts		
<ul style="list-style-type: none"> • Structure and content of the methodology • Methodological approach • Scope of the methodology • Project boundary • Applicability conditions • Baseline scenario • Additionality approach 	Significant impact	Limited impact <hr/> Limited or no impact
Examples	<ol style="list-style-type: none"> 1. Expansion of the scope to different project activities 2. Adaptation of a standardised method 3. Modifications to the GHG quantification approach 	<ol style="list-style-type: none"> 1. Improvements to language and clarity of the methodology and updates to emission factors 2. Improvements to the procedures 3. Minor expansions of the scope to include similar project activities that are consistent with the existing methodological approach
Steps		
<ul style="list-style-type: none"> • Verra review • Public stakeholder consultation • VVB assessment • Final Verra review 	Required	Required <hr/> Not required <hr/> Required

Source: VCS Methodology Development and Review Process, v4.4

6.2.3.1 Procedure for Methodology Revisions

The steps are similar to those for developing a new methodology, but the templates and scheduled fees differ. Verra assesses the Methodological Idea Note (see [Section 6.2.2.1](#)) and decides if the revision is major or minor based on the scope and nature of the changes that are being proposed.

Major Revision

When a major revision may proceed in line with the criteria as set out in [Section 6.2.2.1](#), the following steps shall be followed, as shown in Exhibit 111.

Exhibit 111: Steps for major revision.

Steps	Description
Step 1 Methodology Idea Note Submission	Refer to Section 6.2.2.1 and follow the steps involved <ul style="list-style-type: none"> • The VCS Methodology Idea Note for methodology revisions shall be used to submit the ideas for methodology revisions • Once the methodology has passed Verra's review, the methodology developer may proceed to the next step with reference to Section 6.2.2.2
Step 2 Methodology Concept Note Development	Refer to Section 6.2.2.2 and follow the steps involved <ul style="list-style-type: none"> • The VCS Methodology Concept Note template, shall be used in Step 2 • Methodology Review Fees are as follows: <ul style="list-style-type: none"> - Major Methodology Revisions: USD2,000 - Major Revisions of Modules and Tools : USD1,500
Step 3 Draft Methodology Development	Refer to Section 6.2.2.3 and follow the steps involved <ul style="list-style-type: none"> • The following supporting documentation shall be prepared: <ol style="list-style-type: none"> 1) The methodology developer shall transfer the current methodology into the most recent VCS Methodology Template and submit the proposed revision as a redlined version of the methodology 2) The methodology developer shall transfer the approved GHG programme methodology into the most recent VCS Methodology Template and submit the proposed revision as a redlined version of the methodology The methodology revision document should indicate changes and additions made to the underlying methodology, as well as the parts of the underlying methodology that have not changed 3) A draft PD is only required if Verra requests it during the review process • Methodology Review Fees: <ul style="list-style-type: none"> - Major Methodology Revisions: USD13,000 - Major Revisions of Modules and Tools: USD6,000
Step 4 Public Stakeholder Consultation	Please refer to Section 6.2.2.4 and follow the steps involved
Step 5 VVB Assessment of Methodology	Please refer to Section 6.2.2.5 and follow the steps involved
Step 6 Final Verra Review and Decision	Please refer to Section 6.2.2.6 and follow the steps involved Verra's potential review outcomes are as in Section 6.2.2.6

Source: VCS Methodology Development and Review Process, v4.4 & Verra Program Fee Schedule, v1.0

There are many potential outcomes for developers who complete the six (6) steps of major methodology revision. Following Step 6, Exhibit 112 displays four (4) potential review outcomes.

Exhibit 112: Verra's potential review outcomes for major revision.

Decision	Description of Review Results
The methodology is rejected by Verra	<ul style="list-style-type: none"> The assessment report does not demonstrate that the methodology revision is approved
The VVB shall revise the assessment and provide an updated assessment report for Verra to review	<ul style="list-style-type: none"> If Verra determines that the methodology revision has not been assessed by the VVB per VCS Program rules and requirements
The methodology is rejected if Verra's findings cannot be satisfactorily addressed	<ul style="list-style-type: none"> If Verra determines that the quality of the methodology revision is not sufficient or does not comply with VCS Program rules and requirements, the methodology developer is obliged to revise the methodology until all of Verra's findings have been satisfactorily addressed Verra may revise the methodology revision where deemed necessary and the VVB will assess the revised methodology and the methodology developer's responses
The methodology revision is approved by Verra	<ul style="list-style-type: none"> Verra will inform the methodology developer and the VVB A reference number is assigned to the approved methodology On the Verra website, the methodology, assessment report and stakeholder comments with responses are posted The revised methodology is now active and may be used as part of the VCS Program The methodology's previous version is considered inactive and the VCS Standard sets out the grace periods (up to six (6) months) for using the prior version of the methodology

Source: VCS Methodology Development and Review Process, v4.4 & VCS Standard, v4.7

Minor Revision

Where a minor revision may proceed as per [Section 3.1.7\(1\)](#) in the VCS Methodology Development and Review Process, v4.4, the developer submits the proposed revision as a redlined version of the methodology.

Verra reviews to ensure the proposed revision satisfies the criteria in Exhibit 113.

Exhibit 113: Criteria of proposed minor revision.



Source: VCS Methodology Development and Review Process, v4.4

Verra's potential review outcomes for minor revision are tabulated in Exhibit 114.

Exhibit 114: Verra's potential review outcomes for minor revision.

Decision	Description of Review Results
The methodology revision is rejected if Verra's findings cannot be satisfactorily addressed	If Verra's review reveals that the proposed revision is not yet of sufficient quality or does not comply with VCS Program rules and requirements, the methodology developer shall revise the methodology according to all findings from Verra's review
The methodology developer shall either revise the revision and narrow the scope to a minor revision or continue the process for a major revision	If Verra determines the proposed methodology revision is not within the scope of minor revisions
The methodology revision is approved by Verra	<ul style="list-style-type: none"> • Verra will inform the methodology developer of the review results • A reference number is assigned to the approved methodology • On the Verra website, the methodology, assessment report and stakeholder comments with responses are posted • The revised methodology is now active and may be used as part of the VCS Program • The previous version of the methodology becomes inactive • The methodology's previous versions are considered inactive and the VCS Standard sets out the grace periods (up to six (6) months) for using the prior versions of the methodology

Source: VCS Methodology Development and Review Process, v4.4

6.2.4. Applicable Fees for Methodology Development under Verra

Exhibit 115: Applicable Fee for Methodology Development (new and revision).

Templates (Available on Verra's website)	Fees
Step 1: Methodology Idea Note Submission	
New Methodologies: <i>VCS Methodology Idea Note Template</i> Major and Minor Revisions: <i>VCS Methodology Idea Note for Methodology Revisions</i>	No fee
Step 2: Methodology Concept Note Development	
New Methodologies and Revisions: <i>VCS Methodology Concept Note Template</i>	New Methodologies and Major Methodology Revisions: USD2,000 New Modules and Tools or Major Revisions: USD1,500
Step 3: Draft Methodology Development	
New Methodologies and Revisions: <i>VCS Methodology Template</i> New Modules and Tools and Revisions: <i>VCS Module and Tool Template</i>	New Methodologies and Major Methodology Revisions: USD13,000 New Modules and Tools or Major Revisions: USD6,000 Minor Methodology, Module or Tool Revisions: USD6,000
Third-Party Developer: <i>VCS Methodology Submission Form & Agreement</i>	No fee

Source: Verra Program Fee Schedule, v1.0

Note: The fee schedule is subject to changes by Verra. For more updated information, please visit [Verra's fee schedule](#).

6.3 Gold Standard for the Global Goals (GS) General Process

This section outlines the procedures and requirements for developing a new methodology and methodological tool and revising previously approved methodologies and methodological tools, together with the associated fees. It also provides guidance on seeking clarification for previously approved methodologies and methodological tools. Procedures for both Stakeholder-led and Secretariat-led methodology development and approval will be covered.

The procedure applies to all new methodologies and revisions to approved methodologies and methodological tools, as well as seeking clarification for the application of an approved methodology. From here on, methodologies and methodological tools will be referred to as 'methodology' unless stated otherwise.

Methodology developers should always follow the latest version of the [Procedure For Development, Revision and Clarification of Methodologies and Methodological Tools](#).

6.3.1 GS Guiding Principles and Requirements

6.3.1.1 GS Guiding Principles

Methodology development and review shall follow the guiding principles below, based on the International Organization for Standardization (ISO) 14064 Part 2 (2019) specifications, to ensure methodology application facilitates compliance with GHG accounting principles:

- i. General
- ii. Relevance
- iii. Completeness
- iv. Consistency
- v. Accuracy
- vi. Transparency
- vii. Conservativeness

6.3.1.2 GS General Requirements

1. To ensure compliance with general guiding principles, the methodology shall:
 - a) Design the applicability criteria that projects shall use to demonstrate compliance with the core principles of Gold Standard, as listed in the [Principles and Requirements](#);
 - b) Design flexible procedures to accommodate different types of projects of similar nature and circumstances while ensuring the integrity of the GHG accounting process;
 - c) Establish criteria for the selection of relevant GHG sources, sinks and reservoirs for regular monitoring or estimation where not monitored regularly;

- d) Establish criteria and procedures for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs;
 - e) Define assumptions and specify quantification methods and monitoring requirements to ensure that GHG emission reductions and removals are not overestimated, particularly in cases where estimation methods, and not direct measurements, are used to populate parameters;
 - f) Use conservative assumptions, values and procedures to ensure that GHG emission reductions or removal enhancements are not overestimated.
 - g) Include methods for estimating uncertainties relevant to the project and baseline scenario and underlying parameters and uncertainty adjustment approaches, where applicable;
 - h) Specify the approach to demonstrating the additionality of the activity applying the methodology.
2. The ['Rules, Modalities and Procedures for the Mechanism Established by Article 6, Paragraph 4 of the Paris Agreement'](#) outlines the principles, key requirements and processes of the Article 6.4 mechanism. The developer shall take into account the requirements outlined in Chapter V B – Methodologies, Paragraphs 33-39 of the Annex when preparing the new methodology. The GS plans to issue additional guidelines to ensure compliance with the methodology requirements of Chapter V B (Methodologies) of the Rules, Modalities and Procedures.

6.3.2 GS New Methodology Development

Based on the GS methodology procedure, the development of a new methodology can be done in two (2) ways. Refer to Exhibit 116.

Exhibit 116: New methodology development.

New Methodology Development	
<p>Stakeholder-led development</p> <ul style="list-style-type: none"> a) Selection of approval pathway b) Methodology Concept Note c) Preparation of draft methodology or methodology tool d) Review by methodology working group e) Stakeholder consultation f) Consideration by Technical Advisory Committee (TAC) g) Other 	<p>Secretariat-led development</p> <ul style="list-style-type: none"> a) Methodology development plan b) Preparation of new methodology draft or methodology tool c) Consideration by working group d) Stakeholder consultation e) Consideration by TAC

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, [v2.0](#)

6.3.2.1 Stakeholder-led Development

Selection of approval pathways

A new methodology can be submitted for approval using one of the following procedures. Refer to Exhibit 117. The methodology developers are encouraged to confirm the applicable pathway by submitting an outline of the scope of the proposed methodology to methodology@goldstandard.org prior to submission of the Methodology Concept Note.

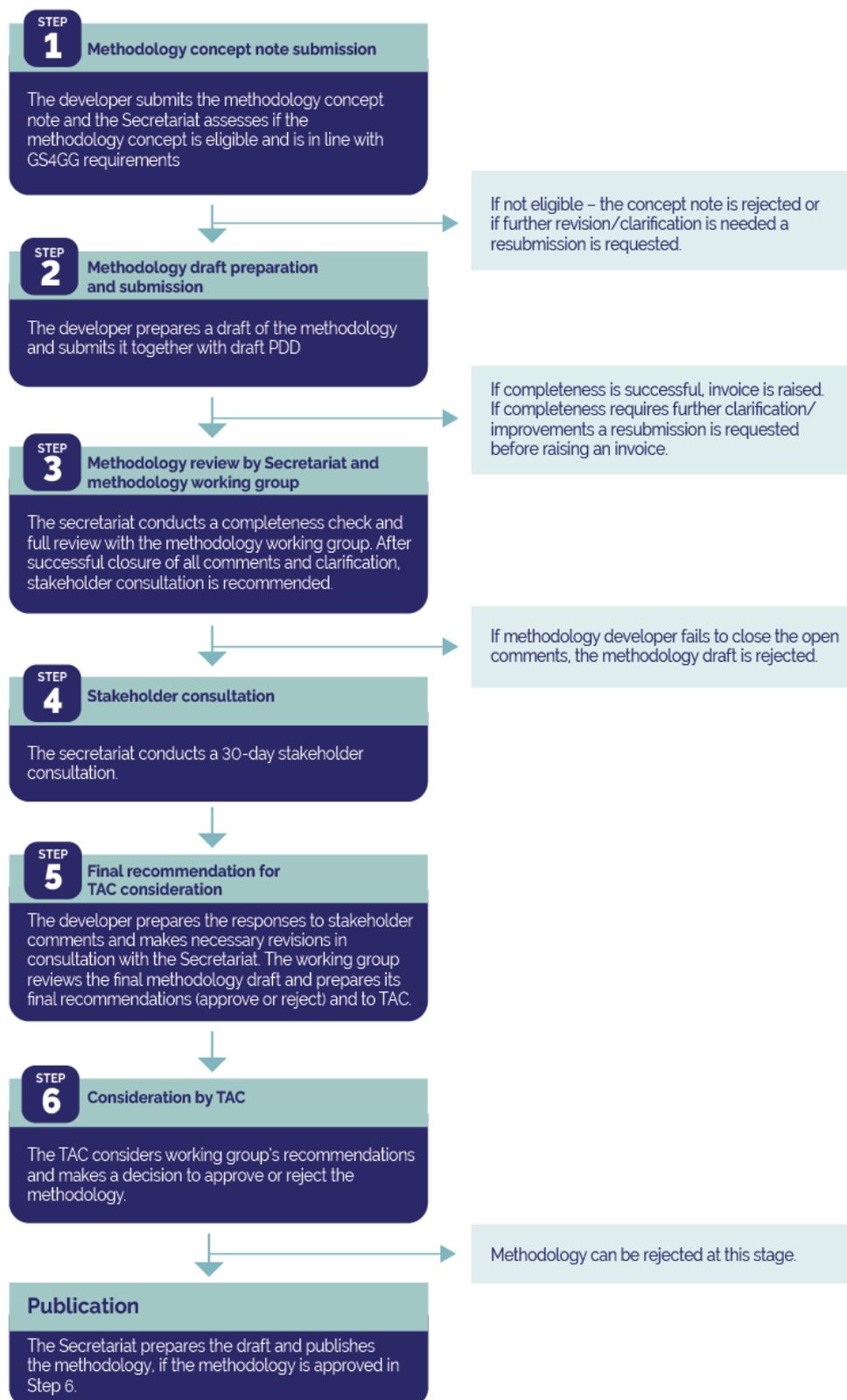
Exhibit 117: New methodology approval pathways.

Approval Pathways	
<p>i. Regular approval</p> <ul style="list-style-type: none">- Applies to a new methodology that has not been approved under any other certification scheme or standard.	<p>ii. Fast-track approval</p> <ul style="list-style-type: none">- Applies to a methodology that has already been approved or updated in the last five (5) years by another credible certification scheme or standard, such as CDM, Article 6.4 mechanism or a domestic scheme and is in compliance with the GS general eligibility principles.- Follows the same requirements as the regular approval procedure, except that the Secretariat shall appoint at minimum one (1) independent subject matter expert from the list of experts and one (1) reviewer with sectoral expertise from the relevant TAC and/or methodology working group.

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

There are six (6) stages involved in developing a new GS methodology approval procedure, as shown in Exhibit 118.

Exhibit 118: Stages for new methodology approval procedure.



Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.

Methodology Concept Note

- i. A methodology developer, which could be a project developer, Coordinating/Managing Entity (CME), Validation/Verification Body (VVB), national designated authority (NDA), or other stakeholders, can propose a new methodology by submitting a Methodology Concept Note. They must use the designated template ([Form – Methodology Concept Note](#)) and follow the instructions. Once completed, the Methodology Concept Note and Form – Methodology Submission should be sent to methodology@goldstandard.org for evaluation of the proposed methodology's eligibility.
- ii. The Methodology Concept Note must align with the eligibility principles outlined in the [Principles and Requirements](#) and demonstrate impact quantification approaches that contribute to at least one (1) Sustainable Development Goal (SDG).
- iii. If a proposed methodology partially or completely covers the scope of an approved methodology and introduces innovative approaches, it may be reviewed as a new methodology. However, if the proposed approaches are already covered partially or completely by an existing Gold Standard methodology, revisions should be made through the methodology revision procedure, as detailed in the methodology revisions section [6.3.3 Methodology Revisions](#) – approved methodology.
- iv. The Methodology Concept Note undergoes a completeness check by the Secretariat. If it passes, it is then reviewed by the methodology working group and/or TAC. During this process, the Secretariat may request additional information from the methodology developer as needed.
- v. The review process by the methodology working group and/or TAC can result in one of the following decisions communicated by the Secretariat. Exhibit 119 illustrates the decisions communicated/status of the review process:

Exhibit 119: Decision communicated/status of review process.

Resubmission	Approval	Rejection
<ul style="list-style-type: none"> • The methodology developer is requested to revise and resubmit the draft Methodology Concept Note to address the issues identified by the reviewers. 	<ul style="list-style-type: none"> • The methodology developer is advised to proceed to the next steps. • The methodology developer shall submit the complete methodology draft within six (6) months of methodology concept approval 	<ul style="list-style-type: none"> • The methodology developer is advised that the Concept Note has been rejected.

- vi. If multiple Methodology Concept Notes with similar ideas are submitted by different developers, the Secretariat may encourage collaboration or take the lead on development. The Secretariat will also maintain a public list of all proposed methodologies on the Gold Standard website, indicating their status in the review process. Developers must submit a summary of the Concept Note,

- vii. excluding proprietary or sensitive information for publication on the GS website. The methodology developer shall submit the complete methodology draft within six (6) months of methodology concept approval. If the developer fails to submit the Secretariat reserves the right to mark the methodology as:

On Hold	Withdrawn
<ul style="list-style-type: none">The Methodology Concept Note can be marked as "active" once the methodology draft is submitted	<ul style="list-style-type: none">May decide to invite or allow another developer to develop the methodology instead

Preparation of draft methodology or methodology tool

The methodology developer must submit the following documents for review:

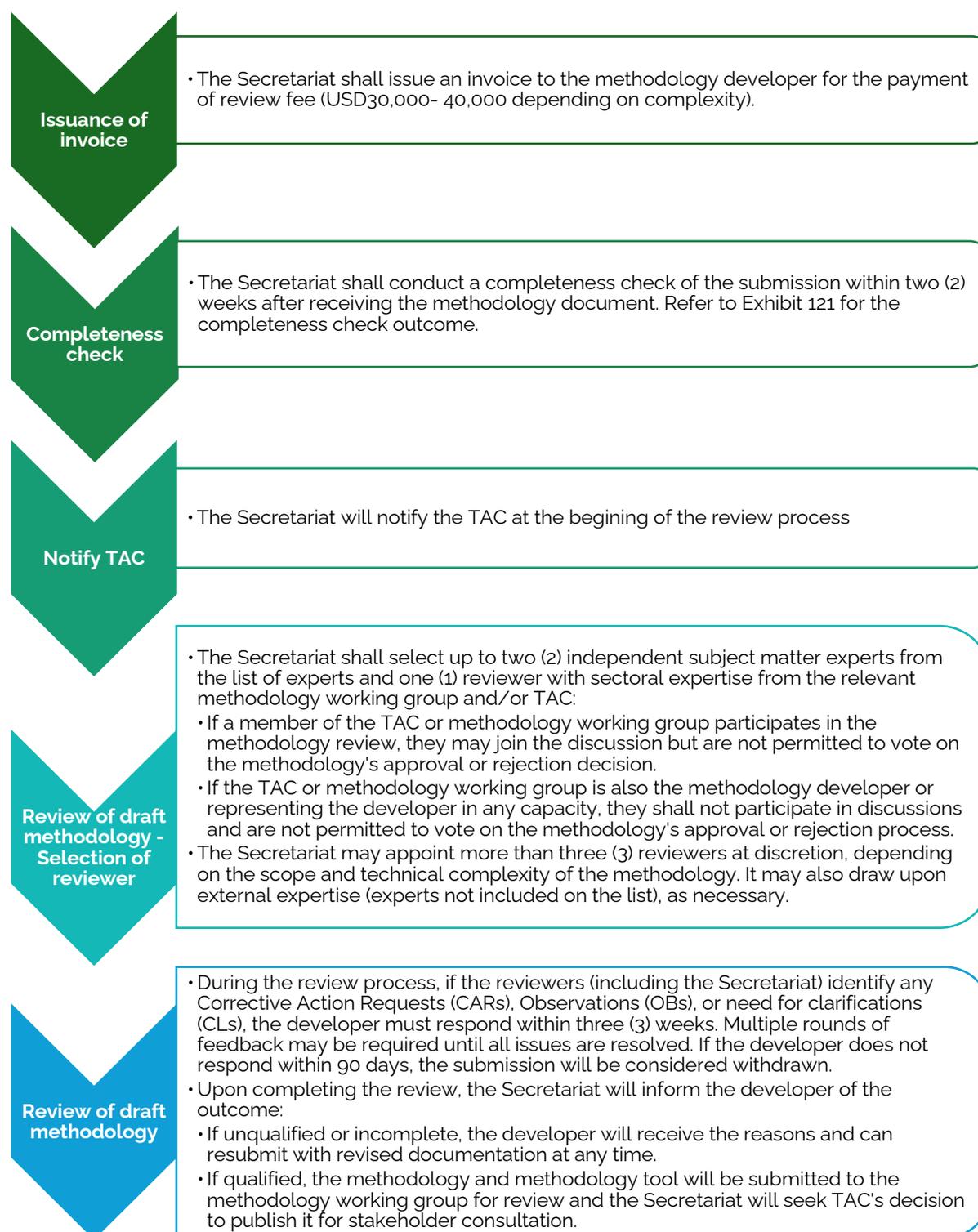
- i. [Form – Methodology Submission](#)
- ii. Draft Methodology or new methodology module/tool
- iii. Model Project Design Document (PDD), including:
 - o Description of project activity
 - o Application of baseline and monitoring methodology
 - o Duration and crediting period
 - o Demonstration of additionality approach (if necessary, the Secretariat may request the developer to draft additional sections of PPD section for review)

The draft methodology should be clear, concise, and written in English, ensuring it aligns with Activity Requirements and includes all relevant information.

Review by methodology working group

Exhibit 120 underlines the review process by the methodology working group.

Exhibit 120: The review process by methodology working group.



Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

The Secretariat shall conduct a complete check of the submission within two (2) weeks after receiving the methodology document.

Exhibit 121 illustrates the completeness check outcome after submission. If the submission is found:

Exhibit 121: The completeness check outcome.

Complete	Incomplete
<ul style="list-style-type: none"> • The Secretariat shall notify the developer and share the planned review timeline including the response time for each round of review. • The Secretariat shall select up to two (2) independent subject matter experts from the list of experts and one (1) reviewer with sectoral expertise from the relevant methodology working group and/or TAC. • During the review process, if the reviewers (including the Secretariat) identify any Corrective Action Requests (CARs), Observations (OBs), or need for clarifications (CLs), the developer must respond within three (3) weeks. Multiple rounds of feedback may be required until all issues are resolved. If the developer does not respond within 90 days, the submission will be considered withdrawn. • Upon completing the review, the Secretariat will inform the developer of the outcome. 	<ul style="list-style-type: none"> • The Secretariat shall request the developer to submit the missing or revised documents and/or information. • The developer shall submit the requested documents and/or information within three (3) weeks of receiving the request. • If the developer fails to submit the requested documents and/or information by the deadline, the Secretariat shall conclude that the submission is incomplete. • The developer may resubmit the proposed new methodology with revised documentation at any time and upon submission, the Secretariat shall provide a revised review timeline, considering the availability of reviewer(s).

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

Stakeholder consultation

The methodology draft will be made publicly available on the GS website for 30 days of global stakeholder consultation after TAC approval and/or methodology working group recommendation. The Secretariat will compile stakeholder comments and share them with the methodology developer, who will address relevant feedback and make necessary changes. All comments and responses will be published on the GS website.

The methodology working group will finalise their recommendation for the TAC, considering stakeholder feedback and any revisions made. The Secretariat will then add the recommendation to the agenda of the next TAC meeting for a decision on whether to approve or reject the proposed methodology.

Consideration by TAC

The TAC shall decide whether to approve or reject the methodology working group recommendation and provide guidance on the issues for review, if necessary. Exhibit 122 shows the outcome of TAC's decision on the proposed new methodology or methodology tool.

Exhibit 122: Outcome of TAC's decision.

Approve	Reject	Provisionally Approve
<ul style="list-style-type: none"> • After a decision is made, it will be recorded in the meeting minutes. • The developer will be informed of the approval and the next steps, including final drafting, reformatting and language checks, as well as any inputs needed to be submitted in writing. • The Secretariat will prepare the final draft and send it to the developer for final review and confirmation within five (5) working days. • Once confirmed, the approved methodology will be published on the GS website within 30 days. 	<ul style="list-style-type: none"> • The decision will be recorded in the meeting minutes. • The developer will be notified of the rejection of the methodology • The status of the methodology will be updated on the GS website, including the rationale for the decision. 	<ul style="list-style-type: none"> • The decision will be recorded in the meeting minutes. • The developer will receive advice on the provisional decision, including guidance on addressing any outstanding issues before final approval. • The methodology working group will be informed of the next steps to implement the TAC decision. • Once the issues are resolved, the final draft, including reformatting and language checks, will be prepared and the methodology status will be updated. • A copy of the final draft will be sent to the developer for final review and confirmation within five (5) working days. • The approved new methodology or methodology tool will be published on the GS website within 30 days of approval.

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

Other

The Secretariat is responsible for maintaining a publicly accessible list of all proposed new methodologies that have been deemed qualified for review by the relevant methodology working group and/or TAC. This list, available on the GS website, indicates the current status of the review process. Additionally, before the TAC makes a final decision, the Secretariat may request additional information from the developer regarding the proposed methodology within a specified time frame to assist in the assessment and consideration by the relevant working group and TAC.

6.3.2.2 Secretariat-led Development

Methodology development plan

- i. The Secretariat, in consultation with the TAC and/or the methodology working group, can decide to develop a new methodology or methodological tool at any time.
- ii. If the TAC approves this proposal, the Secretariat shall prepare a methodology plan outlining the scope, applicability and timeline for the development of the new methodology or methodological tool.
- iii. The Secretariat shall then select two (2) members from the relevant methodology working group to review the draft development plan and provide their input.

Preparation of draft new methodology or methodology tool

- i. The Secretariat is responsible for drafting a new methodology or methodological tool using the established draft template as per the development plan.
- ii. For this task, the Secretariat may engage external expertise if the methodology's technical complexity requires it, selecting up to two (2) independent experts and one (1) reviewer with relevant sectoral expertise from the TAC or methodology working group. If no suitable experts are available from the list, the Secretariat can also seek external experts not on the list.
- iii. After incorporating input from the selected members of the working group, the Secretariat shall finalise the draft and submit it for consideration at the next panel or working group meeting.

Consideration by working group

The relevant working group shall review the draft of the new methodology or methodological tool and prepare a draft recommendation. The Secretariat will then inform the TAC and submit this recommendation to them, seeking approval to publish the methodology for stakeholder consultation.

Stakeholder consultation

- i. The Secretariat shall make the methodology draft publicly available on the GS website for 30 days of global stakeholder consultation.

- ii. All comments and responses will be published on the consultation page of the GS website.
- iii. The relevant working group shall then finalise its recommendation for the TAC, considering the comments received during the global stakeholder consultation and any revisions made to address the comments.
- iv. Finally, the Secretariat shall place this recommendation on the agenda for the next TAC meeting.

Consideration by TAC

- i. The TAC shall decide to either approve, reject or request further review of the recommendation from the relevant methodological panel or working group and provide guidance on the issues for review.
- ii. If the TAC approves the proposed new methodology or methodological tool, the Secretariat shall publish it on the website within 30 days of the approval.

6.3.3 GS Methodology Revision – Approved Methodology

Based on the GS methodology procedure, the methodology revision for the approved methodology is divided into two (2). Refer to Exhibit 123.

Exhibit 123: Methodology revision for approved methodology.

Methodology Revision – Approved Methodology	
<p>Stakeholder-led revisions</p> <ul style="list-style-type: none"> a) Selection of type of revisions b) Submission of proposed revisions c) Preparation of draft revised methodology d) Review by working group e) Stakeholder consultation f) Consideration by TAC g) Other 	<p>Secretariat-led revisions</p> <ul style="list-style-type: none"> a) Methodology revision b) Preparation of draft revised methodology or methodology tool c) Consideration by working group d) Stakeholder consultation e) Consideration by TAC f) Other

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

6.3.3.1 Stakeholder-led Revisions

Selection of type of revisions

The developer shall select the category of the proposed revisions to an approved methodology (including CDM methodology). The categories are divided into two (2) types of methodology revisions, as tabulated in Exhibit 124.

Exhibit 124: Types of methodology revisions.

Major Revisions	Minor Revisions
<ul style="list-style-type: none"> • Major revisions involve significant changes to the methodology's scope, project boundary, applicability conditions, baseline scenario, additionality or quantification and monitoring approach. • Such revisions may include expanding the scope to include similar project activities, implementing a new or adapted quantification method or approach or altering the GHG quantification and monitoring approach. 	<ul style="list-style-type: none"> • Minor revisions are changes aimed at enhancing the language and clarity of the methodology, updating emission factors, improving procedures or making slight expansions to the scope that align with the existing methodological approach. • These revisions have minimal impact on the methodology's scope, project boundary, applicability conditions, baseline scenario or additionality approach. • The main goal is to improve clarity and maintain consistency without significantly altering the methodology's approved objectives, scope or application.

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

The review and approval procedure for both revisions is the same, except that the minor revisions may be published without stakeholders' consultation. The developer may confirm the revision category by submitting a brief outline of the proposed changes to methodology@goldstandard.org before submitting revisions to the methodology.

Submission of proposed revisions

- i. The developer shall complete the Form - Methodology Concept Note by following the instructions. After completing the form, the developer should send both the Form - Methodology Concept Note and the Form – Methodology Submission to methodology@goldstandard.org. This Concept Note will be used to assess the eligibility of the proposed revisions to the methodology.
- ii. A request to revise an approved methodology or methodological tool shall not include changes that would limit its applicability to other project activities or Programmes of Activities (PoAs). If a developer intends to make such restrictive changes, they shall propose a new methodology instead. Additionally, if the revision is likely to introduce new procedures or scenarios affecting more than half of the methodology's provisions, the developer should also propose a new methodology.
- iii. The Methodology Concept Note is subject to a completeness check by the Secretariat. If the note passes this check, it is reviewed by the methodology working group and/or Technical Advisory Committee (TAC). During this process, the Secretariat may request additional information from the methodology developer as needed.
- iv. The review process by the methodology working group and/or TAC may lead to one of the following decisions (see Exhibit 125), which the Secretariat will communicate:

Exhibit 125: Review process outcome.



Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

Preparation of draft revised methodology

The methodology developer prepares the methodology draft, which will be reviewed by the Secretariat, methodology working group members, external subject matter experts, public stakeholder consultation (for major revisions only) and the relevant technology advisory group.

The methodology developer submits the following documents:

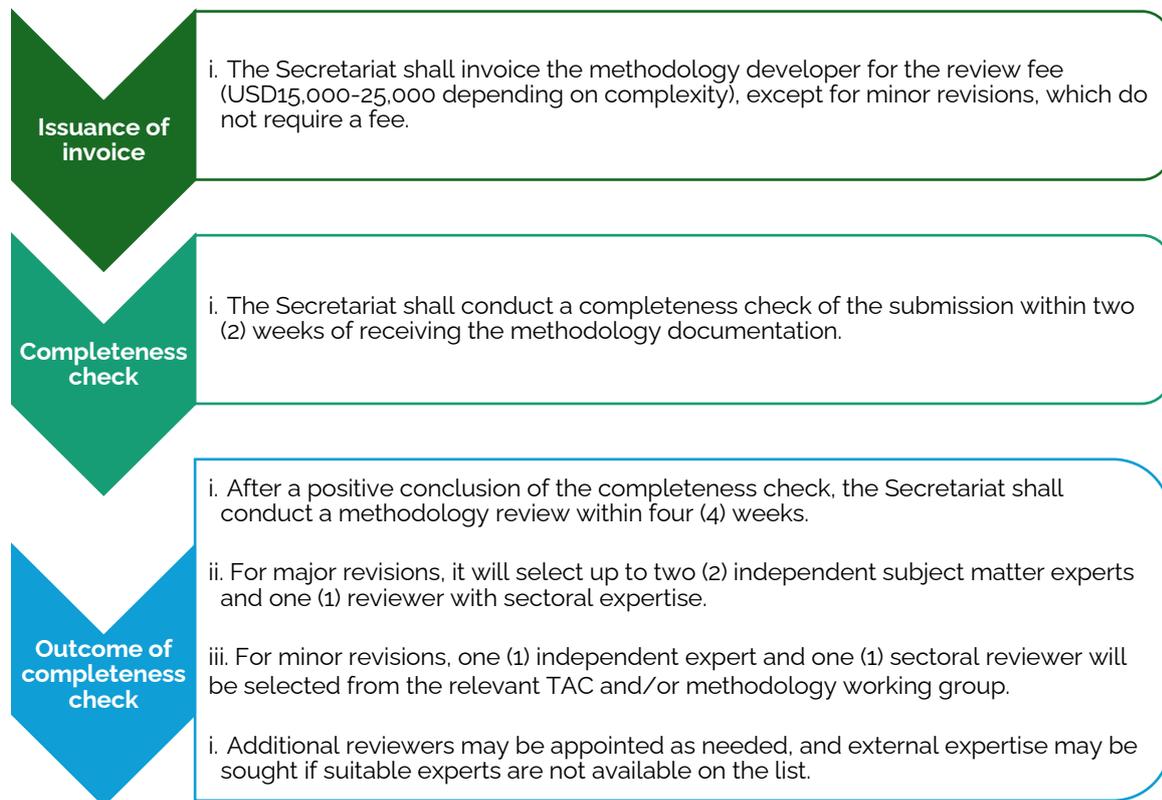
- i. [Form - Methodology Submissions](#)
- ii. Methodology draft or modules/tools with proposed revisions
- iii. A model project design document (PDD) including:
 - Description of project activity
 - Application of selected approved baseline and monitoring methodology
 - Duration of crediting period
 - Demonstrate the additionality approach, if applicable. The Secretariat may request additional sections of the PDD if needed to facilitate the review

Submitting a draft Project Design Document (PDD) is not required for minor revisions to an approved methodology or methodological tool, but it may be requested later. The revised draft methodology should be clear, concise, logically written and aligned with Activity Requirements, using precise English and including all relevant information for comprehensive understanding.

Review by working group

Exhibit 126 shows the review process by the working group.

Exhibit 126: Review process by working group.



Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

Stakeholder consultation

Exhibit 127 shows the stakeholder consultation requirement.

Major Revisions	Minor Revisions
<ul style="list-style-type: none">I. The Secretariat shall make the methodology draft publicly available on the GS website for 30 days of global stakeholder consultation after TAC approval and/or methodology working group recommendation.II. The Secretariat will compile stakeholder comments and share them with the methodology developer, who will address relevant feedback and make necessary changes. All comments and responses will be published on the GS website.III. The methodology working group will finalise their recommendation for the TAC, considering stakeholder feedback and any revisions made.IV. The Secretariat will then add the recommendation to the agenda of the next TAC meeting for a decision on whether to approve or reject the proposed methodology.	<p>The stakeholder consultation is not mandatory. However, the Secretariat, at its discretion and in consultation with the methodology working group, may request TAC to publish the revised methodology for stakeholder consultation.</p>

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

Consideration by TAC

- i. The TAC shall decide whether to approve or reject the methodology working group recommendation and provide guidance on the issues for review, if necessary.
- ii. If the TAC approves the proposed new methodology or methodological tool, the Secretariat shall record it in the meeting minutes.
- iii. The developer will be informed of the approval and the next steps, including final drafting, reformatting, and language checks, as well as any inputs that need to be submitted in writing.
- iv. The Secretariat will prepare the final draft and send it to the developer for final review and confirmation within five (5) working days.
- v. Once confirmed, the approved methodology will be published on the GS website within 30 days.

Others

- i. The Secretariat shall maintain a publicly available list on its website of all proposed revised methodologies that are qualified for consideration by the relevant methodology working group and/or TAC, indicating the current status of the review process and can be accessed on the GS website.
- ii. Additionally, before the TAC makes a final decision, the Secretariat may request additional information about the proposed methodology from the developer within a defined time frame.
- iii. This will facilitate the assessment by the Secretariat and/or the consideration by the relevant methodology working group and/or the TAC.

6.3.3.2 Secretariat-led Revisions

Methodology revision

The Secretariat shall conduct methodology revisions following the below requirements as illustrated in Exhibit 128.

Exhibit 128: Methodology revision requirements.

Periodic Review	Ad Hoc Review
<ul style="list-style-type: none"> • The Secretariat shall review methodology, module and tool at least every three (3) years following its last update or review. • However, if at least five (5) certified projects have not applied an approved methodology, the review may be conducted within five (5) years after its last update or review. 	<ul style="list-style-type: none"> • The Secretariat, in consultation with the TAC and/or the methodology working group, can revise an approved methodology or methodological tool at any time. • Revisions to approved methodologies or tools may be prioritised based on their relevance to least developed countries and small island developing states, host country priorities, potential for global or regional climate action, opportunities for programmatic approaches and the participation of small and micro-businesses.

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

If the methodology working group or the Secretariat considers that the current version of the methodology or methodological tool should be put on hold, they shall recommend it to TAC. In this case, TAC shall consider the proposal and/or the recommendation and decide whether to (see Exhibit 129).

Suspend an approved methodology or its version with immediate effect	Suspend an approved methodology or its version with a grace period of 60 days.	Maintain	An <i>ad hoc</i> interim provision
<p>In this case, for a project activity or PoA or its VPA that applies the methodology beginning from the day after the TAC decision is published,</p> <ul style="list-style-type: none"> i. The project developer or CME cannot submit a request for preliminary review to list a new activity. ii. VVB shall also not submit any request for design certification or renewal of the crediting period of a project activity or PoA or its VPA. 	<p>In this case, for a project activity or PoA or its VPA that applies the methodology beginning from the day after the TAC decision is published,</p> <ul style="list-style-type: none"> i. The project developer or CME cannot submit a request for preliminary review to list a new activity. ii. The VVB shall not request for design certification or any request for renewal of the crediting period of a project activity or PoA or its VPAs, applying the methodology or methodological tool after the grace period 	<p>Maintain the current version of the approved methodology or methodological tool until its validity expires</p>	<p>Establish and decide an <i>ad hoc</i> interim provision to address the identified issues</p>

Source: GS Methodology – Procedure for Development, Revision and Clarification of Methodologies and Methodological Tools, v2.0

If a member of the TAC, or a methodology working group, or the Secretariat identifies the need to correct an obvious error in an approved methodology or methodological tool, the chair and vice-chair of the relevant working group can initiate the revision directly. Additionally, the Secretariat in consultation with the TAC and/or the methodology working group may request the suspension of a methodology if no projects have been design certified using it within five (5) years of its last update or review. In such cases, the methodology will become inactive but can be reactivated through a review and any necessary revisions.

Preparation of draft revised methodology or methodology tool

- i. If the TAC or the chair and vice-chair of the relevant methodological working group decide to revise a methodology, the Secretariat shall prepare a draft revised methodology or methodological tool.
- ii. In preparing the draft revised methodology or methodological tool, the

Secretariat may seek external expertise depending on the technical complexity of the revision by selecting up to two (2) independent experts from the list of experts and one (1) reviewer with sectoral expertise from the relevant TAC or methodology working group. The Secretariat can also engage experts not on the list if suitable experts are unavailable.

- iii. After incorporating input from selected members, the Secretariat shall finalise the draft and submit it for consideration by the panel or working group.

Consideration by working group

- i. The relevant methodological panel or working group shall consider the draft revised methodology or methodological tool and prepare a draft recommendation to the TAC on the draft revised methodology or methodological tool.
- ii. The Secretariat shall notify TAC and submit the draft recommendation to TAC to seek decision to publish methodology for stakeholder consultation.

Stakeholder consultation

- i. The Secretariat shall make the methodology draft publicly available on the GS website for 30 days of global stakeholder consultation after TAC approval and/or methodology working group recommendation.
- ii. The Secretariat will compile stakeholder comments and share them with the methodology developer, who will address relevant feedback and make necessary changes. All comments and responses will be published on the GS website.
- iii. The methodology working group will finalise their recommendation for the TAC, considering stakeholder feedback and any revisions made.
- iv. The Secretariat will then add the recommendation to the agenda of the next TAC meeting for a decision on whether to approve or reject the proposed methodology.

Consideration by TAC

- i. The TAC shall decide whether to approve or reject the methodology working group recommendation and provide guidance on the issues for review, if necessary.
- ii. If the TAC approves the proposed new methodology or methodological tool, the Secretariat shall record it in the meeting minutes.
- iii. The developer will be informed of the approval and the next steps, including final drafting, reformatting, and language checks, as well as any inputs that need to be submitted in writing.
- iv. The Secretariat will prepare the final draft and send it to the developer for final review and confirmation within five (5) working days.
- v. Once confirmed, the approved methodology will be published on the GS website within 30 days.

Other

- i. The Secretariat can propose an editorial revision to an approved methodology or methodological tool at any time. In these instances, a draft of the revised methodology or methodological tool will be submitted to the relevant methodology working group chair for review.
- ii. If the chair approves the draft, the Secretariat will publish the revised methodology on the GS website.

6.3.4 Applicable Fees for Methodology Development under Gold Standard

Exhibit 130: Applicable Fee for Methodology Development (new and revision).

Type	Fee	Terms
New methodology review ^{1,2}	USD30,000 – 40,000 depending on complexity	Per methodology, at the time of draft methodology submission
Methodology revisions	USD15,000 – 25,000 depending on complexity	Per methodology, at the time of draft methodology submission

¹The methodology developer is exempt from the certification fee (including preliminary review, design review and first performance review) for the first activity that applies the approved methodology.

²Universities and host countries may be offered a discounted review fee. Please contact the Secretariat for more information.

Source: [Gold Standard Fee Schedule, Version 3 – 5 December 2024](#)

Contact help@goldstandard.org for any enquiries.

Chapter 7

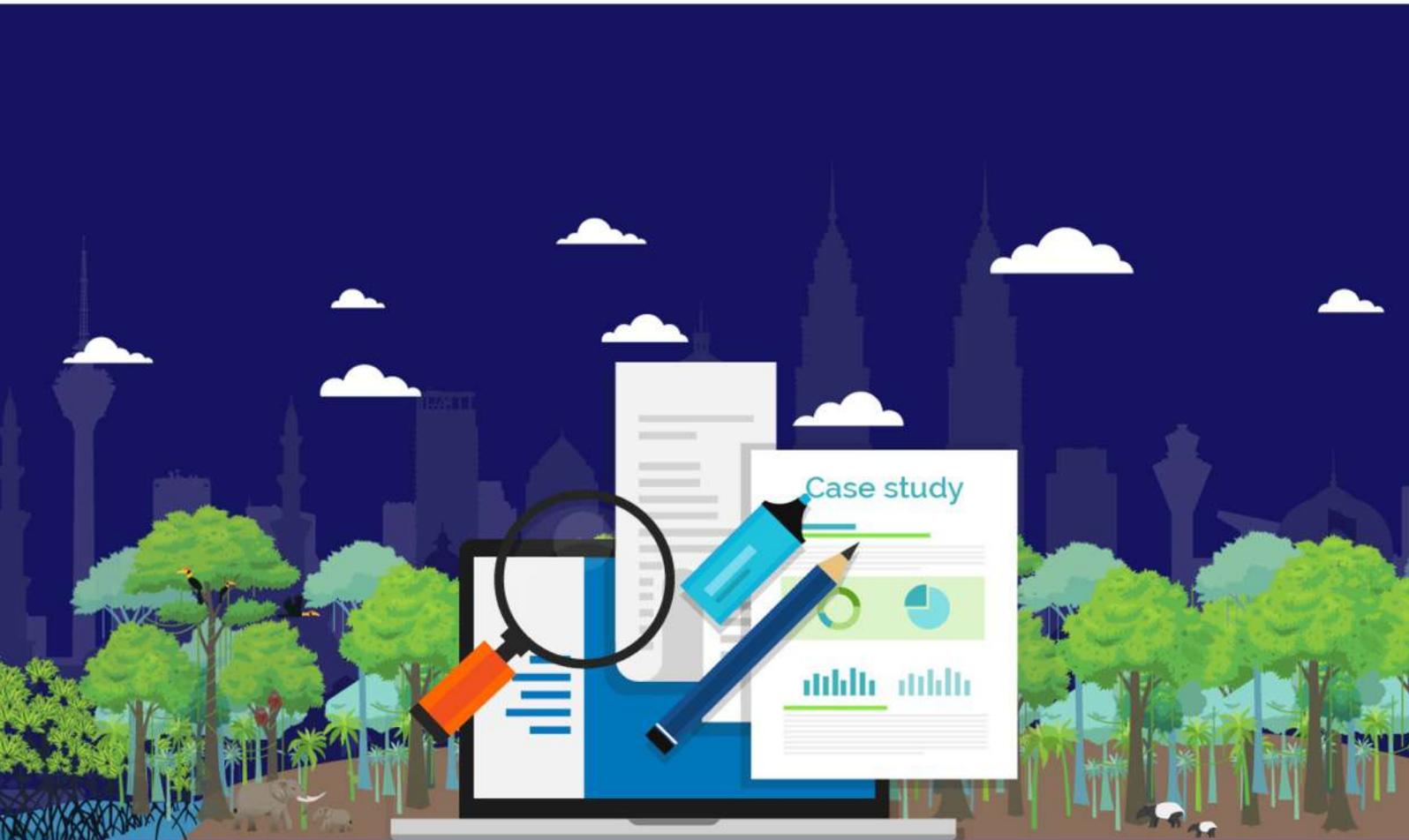
Case Studies in Malaysia

7.1 Chapter Summary

7.2 Introduction

7.3 Nature-Based Solutions Case Study

7.4 Technology-Based Solutions Case Studies



Chapter 7: Case Studies in Malaysia

7.1 Chapter Summary

A clear line of communication, especially during the registration, validation and verification processes, is crucial to ensure that there are no unnecessary delays throughout the project implementation. This applies to all parties, e.g. between the project owner and the government or local authorities, the project owner and the validation team, the carbon registry and the validation team, etc.

It is also important to have a competent and strong project team, e.g. a full site operating team dedicated to the carbon project is crucial to ensure all the necessary monitoring is done in accordance with the monitoring plan.

For any type of project, be it nature-based or technology-based, it is advisable to initially run a feasibility study to assess the potential for a project as this study will illustrate the potential for developing a successful and sustainable project. The feasibility study can be done with the help of capable consultants, especially those who are experienced in helping clients to implement carbon projects from pre-registration to successful issuances of carbon credits.

7.2 Introduction

Carbon credit project development is not new in Malaysia. During the CDM, implemented under the Kyoto Protocol, there were already many carbon projects developed. More recently, projects have been developed under voluntary carbon schemes such as the VCS and GS.

This section shares four (4) case studies of projects implemented in Malaysia.

7.3 Nature-Based Solutions Case Study

7.3.1 Kuamut Rainforest Conservation Project in Sabah, Malaysia

Exhibit 131: Kuamut Rainforest Conservation Project logo.



Photo credit: Permian Malaysia Sdn Bhd.

The Kuamut Rainforest Conservation Project was validated on 13 April 2023 and started credit issuance on 27 March 2024 under the VCS by Verra (see Exhibit 132).

Exhibit 132: Kuamut Rainforest Conservation Project in Sabah, Malaysia.

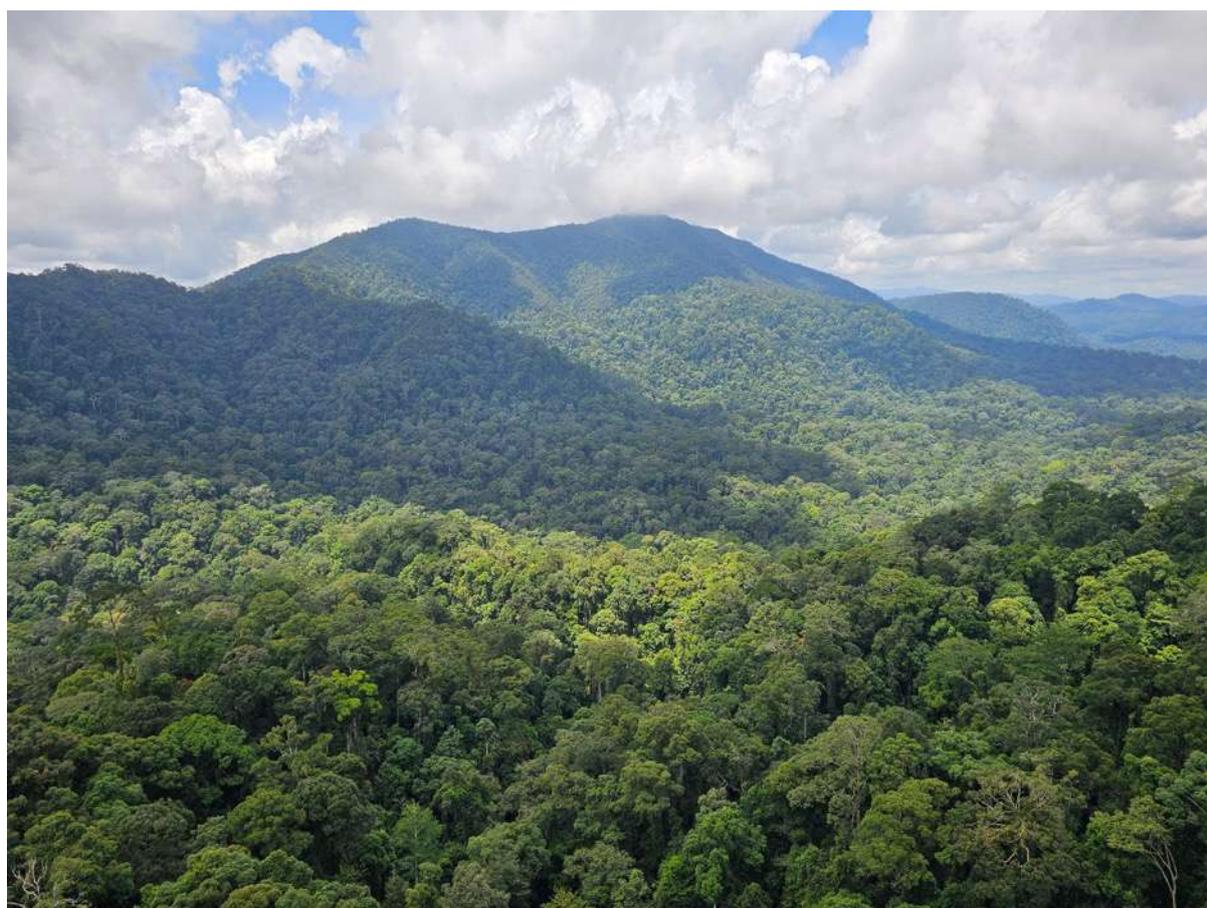


Photo credit: Permian Malaysia Sdn Bhd.

The basic details of the project are summarised below:

Verra Registration ID	2609
Location	Kuamut, Sabah
Proponent	Permian Malaysia Sdn Bhd
Estimated Annual Emission Reductions	543,049 tCO _{2eq} per year
VCS Project Type	14: Agriculture, Forestry and Other Land Use (AFOLU)
AFOLU Activity	Improved Forest Management (IFM)
VCS Methodology	VM0010 Methodology for Improved Forest Management: Conversion from Logged to Protected Forest – Version 1.3
Size of Project Area	83,381 hectares
Project Registration Date	13/04/2023
Project Issuance Start Date	27/03/2024
Crediting Period Term	11/12/2015 – 10/12/2045

Brief Project Description

The Kuamut Rainforest Conservation Project (see Exhibit 133) is a public-private partnership that is working to protect and restore 83,381 hectares of tropical rainforest in Tongod and Kinabatangan districts, Sabah.

Exhibit 133: Location map of the Kuamut Rainforest Conservation Project.

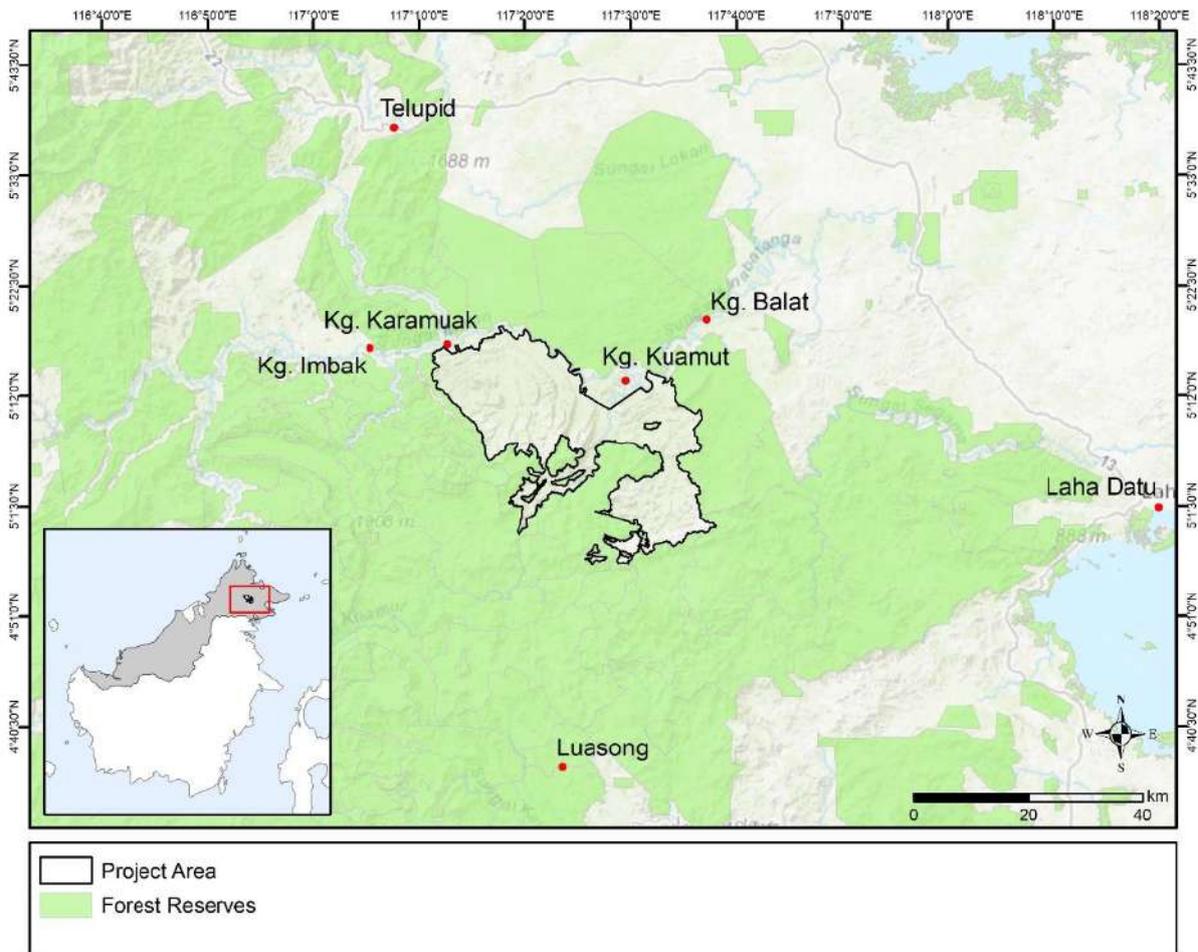


Photo credit: Permian Malaysia Sdn Bhd.

The project is a partnership between the Sabah Forestry Department, Yayasan Sabah, Rakyat Berjaya and tropical forest project developer, Permian Global. The project has operational support from the South-East Asia Rainforest Research Partnership (SEARRP) and the community-based organisation, PACOS Trust.²⁸

The project is assessed against the science-based and globally recognised Verra Verified Carbon Standard (VCS) and the Verra Climate, Community and Biodiversity (CCB) standard to both demonstrate the project's scientific rigour and to enable it to generate income from Verified Carbon Units (VCUs), or carbon credits.

²⁸ Partners of Community Organisations in Sabah.

The project has three (3) core objectives:

1. To protect and restore the carbon-rich forest to help mitigate the global climate crisis;
2. To improve the lives, well-being and sustainable economic opportunities of the communities living around the forest area; and
3. To increase the chances for tropical forest biodiversity to thrive.

The Kuamut Rainforest Conservation Project has been rated best in class, as one of the highest-rated improved forest management (IFM) projects in the world by the carbon rating agency BeZero Carbon and has achieved Gold Level for Climate status under the Climate, Community and Biodiversity (CCB) Standards. The Project has also been rated A by the rating agency Sylvera with 100% for carbon accounting and 4 out of 5 for both additionality and co-benefits.

For validation, the project has been assessed by independent project auditors against the standards. To produce VCUs, or carbon credits, the project will regularly undergo further independent auditing to demonstrate continued compliance with the standards and to measure progress against the project objectives.

All technical documents, including the regular project Monitoring Reports, are publicly available on the Verra Registry ([VCS Project Database](#)).

Climate

- Total emission reductions/removals are estimated at about 16.3 million tCO₂e – with an average of more than 500,000 tCO₂e per year over the life of the project;
- Certified in accordance with the VCS and has achieved “Gold Level for Climate” status under the Climate, Community and Biodiversity (CCB) Standards; and
- The project is categorised as an Avoided Planned Deforestation (APD) project. This is because the land was designated for commercial exploitation prior to the project’s inception. The land was reclassified as a Class I Protection Forest, contingent on climate finance, by an Act of Parliament.

As a less assumption-based approach, APD projects are one of the least contentious and should provide very accurate assessments of the emissions that are being avoided (see Exhibit 134).

Exhibit 134: APD project in Kuamut Rainforest Conservation Project.



Photo credit: Permian Malaysia Sdn Bhd.

Communities

Surrounding the project are two (2) community clusters, the Kuamut and the Karamuak, comprising of eight (8) villages with around 3,000 people. The support and participation of local communities are key to the success of the project. Local employment for conservation programmes and monitoring of progress will help ensure the long-term delivery of the project's impacts.

Community outreach and engagement must always follow the internationally recognized UN principles of Free, Prior and Informed Consent (FPIC). Consultations have informed the aspirations and needs of the communities, shaping the development programs. For example, one community aspiration was access to clean water. Through the project, a water gravity system has been installed, providing clean water to 72 households in Kuamut, 38 households in Tangkuyan, 1 church, 1 mosque, 5 teachers' houses, 2 rural health clinics, and 1 community hall.

Permian Global differs from its peers as it believes that engagement and development work with communities is important and therefore, communication had begun long in advance of any generation and sale of carbon credits. During the implementation of this project, Permian Global understands that a project can only be successful with the support of communities who have a clear understanding of the benefits of the project, i.e. they will be better off with the project than if the project does not go ahead (see Exhibits 135 and 136).

The process of consultation and engagement will continue throughout the lifetime of the project.

Exhibit 135: Village of Kuamut, Sabah.



Photo credit: Permian Malaysia Sdn Bhd.

Exhibit 136: Project team installing the water gravity system.



Photo credit: Permian Malaysia Sdn Bhd.

Biodiversity

Of the 82 mammal and 245 bird species recorded in the project area, 29 and 12, respectively, are considered as rare, threatened or endangered.

The area supports populations of elephants, *bantengs*, *orangutans* and endangered bird species including the Helmeted Hornbill, Bornean Peacock Pheasant and Storms Stork (see Exhibit 137). Much of the project's work will focus on the conservation of these important species.

Exhibit 137: Biodiversity conservation of rare, threatened or endangered mammals and birds in the Kuamut Project.



Photo credit: Permian Malaysia Sdn Bhd.

Biggest Challenges in the Project

- Lengthy delays leading to the registration of the project caused by the COVID-19 pandemic and the lengthy approval process of the authorities and Verra. The entire process took about eight (8) years.

Success Factor in Timely Project Implementation

- Clear line of communication – This is crucial to prevent unnecessary delays during project implementation, ensuring effective coordination between the project owner, government or local authorities, the validation team, and Verra.

Success Factor in Monitoring

Local engagement with stakeholders – Collaborating closely with local communities, authorities, and other stakeholders is essential to ensure the project design is environmentally sound and promotes an equitable benefit-sharing model.

Other Advice and Recommendations for Future Project Developers in Malaysia

Based on this experience, it is recommended that future developers consider the following:

- High-quality carbon credits represent real and additional GHG emission reductions or removals, which are quantified based on credible and conservative calculations of baselines, additionality, leakage and permanence. For a project where the land will be reclassified, e.g. for this project as Class I Protection Forest, it has to be ensured that this decision to reclassify the land is justifiable and will not impact the value of additionality and permanence in the future.
- Buyers typically expect high-quality credits to also represent activities beyond GHG emission reduction. A forest carbon project will often include well-designed, monitored and inclusive community development programmes as well as science-based biodiversity conservation activities. Projects are also encouraged to be verified against the CCB Standards administered by Verra, which ensures delivery of net positive benefits for climate change mitigation, the local communities and biodiversity, as CCB Standards confer carbon credits of higher quality, which in turn can fetch a better market value.
- It is advisable to initially run a feasibility study to assess the potential for a project. This will include, for example, an assessment of carbon stocks, legal rights of the area, commercial viability and level of threat of emissions, demographic profile, local and national government policy, etc. This study will illustrate the potential for developing a successful and sustainable project.

7.4 Technology-Based Solutions Case Studies

7.4.1 Case 1 - Landfill Gas Recovery and Utilisation at Bukit Tagar Sanitary Landfill, Hulu Selangor, in Malaysia

Exhibit 138: Bukit Tagar Sanitary Landfill, Hulu Selangor.



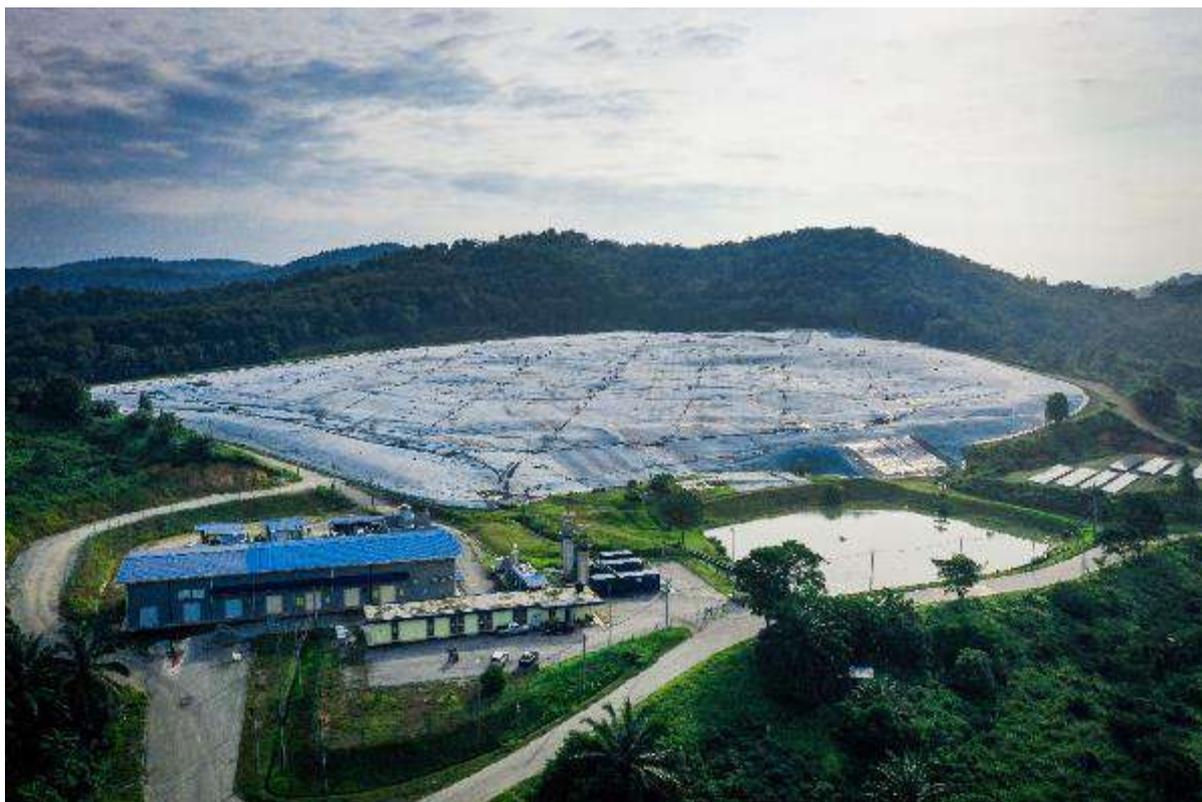


Photo credit: Berjaya EnviroParks Sdn Bhd.

This project is the largest landfill gas extraction and utilisation project in Malaysia (see Exhibit 138), and is registered under the CDM by the UNFCCC. This project alone has generated around three (3) million certified emission reduction units (CERs) to date and counting.

The basic details of the project are summarised below:

CDM Registration ID	2467
Location	Hulu Selangor, Selangor
Proponent	Berjaya EnviroParks Sdn Bhd
Estimated Annual Emission Reductions	283,788 tCO _{2eq} per year
CDM Project Type	13: Waste handling and disposal
CDM Methodology	ACM0001 Flaring or use of landfill gas – Version 18.0
Size of Project Area	700 acres with 1,000 hectares of buffer areas
Project Registration Date	28/08/2009 (1st CER issuance on 02/05/2011)
Crediting Period Term	Total crediting period of 21 years, renewable (7 years) 1st Crediting Period: 28/08/2009 – 27/08/2016 (Both dates inclusive) 2nd Crediting Period: 28/08/2016 – 27/08/2023 (Both dates inclusive)

Brief Project Description

The Bukit Tagar Sanitary Landfill occupies a 700-acre footprint and is surrounded by a buffer zone of 1,000 hectares of palm oil plantations. The landfill has been in operation since 1 April 2005 and the waste received is expected to increase yearly from 3,000 metric tonnes per day (tpd) up to 6,600 tpd over the 40-year designed lifespan. The landfill is receiving on average of 2,600 tons of municipal solid waste (MSW) per day from Kuala Lumpur City, Selayang District and Hulu Selangor District in the State of Selangor. The landfill site consists of multi-phases or landfill cells for MSW landfilling to cater for the continuous incoming waste received. Development of new phases or cells, up to 17 phases according to landfill design, will be necessary when the current cells have reached their designed capacity. All other phases will be developed when necessary.

Landfill gas consisting of mainly methane (CH₄) is generated due to the anaerobic degradation of solid waste at Bukit Tagar Sanitary Landfill. Previously, landfill gas was passively vented from the Bukit Tagar Sanitary Landfill to the atmosphere. There are no regulations or specific requirements by the Malaysian government requiring the collection, flaring and/or utilisation of landfill gas.

Recognising the potential of capturing and utilising landfill gas, Berjaya EnviroParks Sdn Bhd implemented this project that entails the collection and utilisation of landfill gas for power generation, as well as flaring of the excess gas (as opposed to direct emissions of landfill gas to the atmosphere). The renewable power generated from the landfill gas is sold to the grid, leading to further reduction of GHG emissions in the national energy mix. Up to year 2022, a total of 12 MW of renewable energy capacity has been installed at this site (see Exhibit 139).

Exhibit 139: Gas engines at the Bukit Tagar Sanitary Landfill.



Photo credit: Berjaya EnviroParks Sdn Bhd.

Biggest Challenges in the Project

- Long approval process of the CDM;
- Rigid requirements on design change and monitoring, limiting the flexibility of implementation.

- Leachate management in landfill cells – Proper design of leachate drainage piping is crucial to increase landfill gas extraction efficiency;
- Management of moisture in gas pipes – Excessive moisture needs to be separated;
- Selection and integration of various CDM technologies in line with CDM requirements – Including the SCADA system to integrate data management; and
- Development of infrastructure for grid-connection integration has been challenging due to limited power demand in the area.

Success Factors in Timely Project Implementation

- Setting up a proper project team and engaging a project management consultant to assist if required;
- Always planning ahead before implementation and conducting feasibility studies for expanding to new landfill cells and exploring options to integrate the piping and collection system;
- Good landfill management and practices to ensure effective gas production shall be a constant effort. These include testing out different gas piping designs and configurations, regularly checking and auditing the collection gas pressure and so on; and
- Selection of equipment and components for landfill gas extraction and power generation – Conducted thorough technical and financial comparison of the options and selecting service providers that have local presence and experience where possible.

Success Factors in Monitoring and Issuance of Credits

As of March 2023, approximately 2.97 million CERs (over 16 monitoring periods) have been generated and 247,353 MWh of power injected into the grid (see Exhibit 140).

Exhibit 140: Actual vs. estimated CER issuances for Bukit Tagar Project.

Crediting Period (2009 – 2021)	Actual CERs	Estimated CERs (PDD)	Difference in CERs	% Difference
Overall (1st & 2nd Crediting Periods)	2,971,917	3,125,144	(153,227)	-5%

The project has achieved tremendous success in the overall issuance of credits as compared to what was predicted in the Project Design Document (PDD), which was calculated ex ante before project implementation. The above figures compare the actual CERs achieved with the CERs estimated in the [PDD](#) and the difference overall is around 5%.

The success factors for the monitoring, verification and issuance are:

- Ensuring a strong site operating team is in place;
- Regular refresher training on monitoring requirements and conducting internal audits to identify issues of concern regularly (see Exhibit 141);
- Engagement of a competent consultant and experienced verifier is crucial; and
- Ensuring there is spare monitoring equipment, e.g. methane analysers, gas flowmeters, etc., to avoid any gaps in claims.

Exhibit 141: Site operating team (left) and internal auditees (right).



Photo credit: Eco-Ideal Consulting Sdn Bhd.

Other Advice and Recommendations for Future Project Developers in Malaysia

Based on the experience over the years, it is therefore recommended that future project developers consider the following:

- Conducting technical and financial feasibility studies prior to any significant investment;
- Engaging competent technical expertise if required, as landfill gas modelling is quite complex; and
- Starting with a pilot and improving the extraction over time through constant monitoring and review.

7.4.2 Case 2 - Sungei Kahang POME Biogas Recovery for Energy Project in Johor, Malaysia

This project is a large-scale palm oil mill effluent (POME) biogas project (see Exhibit 142) which was registered under the CDM and has successfully issued carbon credits in Malaysia.

Exhibit 142: POME Biogas Recovery for Energy Project in Sungei Kahang.



Photo credit: Eco-Ideal Consulting Sdn Bhd.

The basic details of the project are summarised below:

CDM Registration ID	3686
Location	Sungei Kahang, Johor
Proponent	Sungei Kahang Palm Oil Sdn Bhd
Estimated Annual Emission Reductions	56,000 tCO _{2eq} per year
CDM Project Type	13: Waste handling and disposal
CDM Methodology	ACM0014 Mitigation of greenhouse gas emissions from treatment of industrial wastewater – Version 03.0
Size of Project Area	About one hectare for the biogas plant area
Project Registration Date	08/10/2010 (1st CER issuance on 28/02/2013)
Crediting Period Term	Total crediting period of 21 years, renewable (7 years) 1st Crediting Period: 08/10/2010 – 07/10/2017 (Renewable – Expired)

Brief Project Description

The mill at Sungei Kahang Palm Oil Sdn Bhd processes fresh fruit bunches (FFB) of oil palm into crude palm oil (CPO) and palm kernel. In the processing of FFB, wastewater, also commonly known as palm oil mill effluent (POME), is generated. POME is well known as high-strength wastewater with very high organic and oil content (see Exhibit 143).

Exhibit 143: Baseline of project – Methane emissions from open lagoons treating POME.



Photo credit: Eco-Ideal Consulting Sdn Bhd.

The project aims to avoid direct emissions of CH₄ from the open anaerobic lagoons into the atmosphere by introducing four (4) units of enclosed anaerobic digester tanks to capture biogas consisting of CH₄. The biogas captured is utilised by directly feeding it into the existing biomass boilers through retrofitting the existing two (2) units of boilers. Initially, a total of three (3) units of biomass boilers were retrofitted, but only two (2) units were used in the project. Any excess biogas is destroyed via a high-temperature, enclosed flaring system. A biogas engine was installed at a later stage of the project to generate renewable electricity which will be injected into the grid.

As of March 2023, 133,958 CERs were issued from this project.

Biggest Challenges in the Project

- The process for design change and revision of the monitoring plan was tedious and time-consuming;
- High maintenance cost of monitoring equipment (see Exhibit 144);
- Corrosive nature of biogas due to high sulphur content;
- Consistency of biogas production due to seasonal cropping period and digestion process;
- Equipment damage due to lightning strike; and
- Lack of carbon credit demand for CDM projects, which resulted in low prices.

Exhibit 144: Monitoring audit (left) and monitoring equipment (right).



Photo credit: Eco-Ideal Consulting Sdn Bhd.

Success Factors in Monitoring and Issuance of Credits

As of March 2023, approximately 133,958 CERs have been generated and the project owner is currently undertaking verification for more CERs to be issued.

The project has so far performed reasonably well in the actual credits issued as compared to what was predicted in the PDD, which was calculated ex ante before project implementation. Exhibit 145 compares the actual CERs achieved with the CERs estimated in the PDD and the difference overall is only around 7%.

Exhibit 145: Comparison of actual vs. estimated CER issuances for Sungei Kahang Project.

Month	Actual CERs	Estimated CERs (PDD)	Difference of CERs	% Difference
1st MR (08/10/10 – 30/06/11)	41,260	49,412	(8,152)	-16%
2nd MR (01/07/11 – 31/12/12)	96,418	99,095	(2,677)	-3%
Total	137,678	148,507	(10,829)	-7%

No issuance of carbon credits has been made post-2012 due to the drop in carbon prices of credits from CDM projects.

The success factors for the monitoring, verification and issuance are:

- A full operations team dedicated to the carbon project is crucial to ensure all the necessary monitoring is done in accordance with the monitoring plan (see Exhibit 146);
- Technical assistance from and training by external consultants is important to the success of the monitoring, verification and issuance; and

- The upkeep of key monitoring equipment, such as the flow meters, methane analysers and COD analyser, is pertinent to maximise carbon credit generation.

Exhibit 146: Site operating team (left) and internal auditees (right).



Photo credit: Eco-Ideal Consulting Sdn Bhd.

Other Advice and Recommendations for Future Project Developers in Malaysia

Based on the experience over the years, it is therefore recommended that future project developers consider the following:

- Selecting a local biogas technology provider with experience and which can provide good after-sales service;
- Finding reliable carbon credit buyers who can provide necessary support to the project; and
- Appointing credible external consultants to provide technical support and conducting internal audits to pre-identify potential issues for monitoring and issuance.

7.4.3 Case 3 - Fuel-Switch Project Deriving Carbon Assets from the Use of Non-Edible Raw Agriculture-Derived Oil System (NERADO System) To Replace Heavy Fuel Oil for Aluminium Dross Recycling in Malaysia

This is a micro-scale fuel-switch project currently seeking registration with Gold Standard (GS) during the preparation of this Handbook. The project uses a Non-Edible Raw Agriculture-Derived Oil (NERADO) system to replace Heavy Fuel Oil (HFO) as the fuel source for generating heat energy in furnaces used in aluminium dross recycling operations in Malaysia.

The basic details of the project are summarised as below:

GS Registration ID	GS11356
Location	JTS Engineering Sdn Bhd, Lot 227 Jalan Tembaga 2, 81700 Pasir Gudang, Johor, Malaysia.
Proponent	Climate Resources Exchange International Pte Ltd
Estimated Annual Emission Reductions	1,692 tCO ₂ e
GS Project Type	1 & 9 Energy Distribution (Biomass, or Liquid Biofuel – Electricity)
GS Methodology	AMS.III.AS: Switch from fossil fuel to biomass in existing manufacturing facilities for non-energy applications, Version 02.0
Size of Project Area	Not Indicated
Project Registration Date	31/03/2024 (Date of Design Certification)
Crediting Period Term	Apr 01, 2022 — Mar 31, 2027 Total crediting period of 10 years, renewable (5 years) 1 st Crediting Period: 01/04/2022 – 31/03/2027 2 nd Crediting Period: 01/04/2027 – 31/03/2032

Brief Project Description

The Fuel-Switch Project Deriving Carbon Assets from The Use of Non-Edible Raw Agriculture-Derived Oil System (Nerado System) implemented by JTS Engineering Sdn Bhd (“JTS”), the leading pioneer in Aluminium Dross recycling in Malaysia and was the very first to obtain approval from the Malaysian Department of Environment for handling and recycling aluminium dross. Exhibit 147 provides an image of the JTS facility and additional information is available on the [JTS Holdings Group Website](#) and [JTS Resource And Scheduled Waste Management](#).

Exhibit 147: JTS facility.



Photo credit: JTS Engineering Sdn Bhd

The project activity aims to address one of the issues JTS was looking at being its furnace fuel, which uses Heavy Fuel Oil (HFO) in its baseline scenario, a fuel typically derived from residues of petroleum catalytic cracking. As HFO is both a high carbon intensive fuel source as well as not sustainable in the long run, seeing that it is derived from fossil fuels, JTS initiated a search for a more sustainable fuel that could produce the required amount of energy for the smelting process.

In the project activity, Non-Edible Raw Agriculture-Derived oils (NERADOs), which is commonly available in the local region and possesses a lower carbon potential, was selected as the alternative fuel source to be used during the aluminium smelting process. Through the switching from a high carbon intensive fuel source to a lower carbon intensive fuel source, emission reductions are able to be generated. As part of the fuel switch activity, a replacement of the fuel firing system in the existing plant was implemented to allow for the firing of the NERADOs fuel. The replaced fuel firing system would also have the capabilities of firing other kind of liquid fuels such as HFO and diesel fuel. Illustration of the aluminium smelting process at JTS is seen in exhibit 148.

Exhibit 148: JTS furnace.



Photo credit: JTS Engineering Sdn Bhd

The Fuel-Switch Project will significantly reduce GHG emissions by replacing fossil fuels with renewable fuels. This aligns with Malaysia's goal to enhance its green industry and renewable energy potential. The project will also contribute to environmental well-being by lowering emissions on both regional and global levels.

This project targets three (3) Sustainable Development Goals (SDG):

- SDG 8: Decent Work and Economic Growth
- SDG 11: Sustainable Cities and Communities
- SDG 13: Climate Action

The estimated impact of this project is shown in the following Exhibit 149:

Exhibit 149: Estimated project impact.

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
SDG 13: Climate Action (mandatory)	Emissions Reductions	1,692	VERs
The project uses renewable fuels in place of non-renewable fuels, thereby reducing emissions into the atmosphere resulting in lower emissions to the surrounding environment.			
SDG 11: Sustainable Cities and Communities	Decreased PPM	3.5	PPM
As renewable fuel is being used, this leads to a cleaner environment with less soot and smog, improving working conditions within the plant. The local environment for nearby residents will also be enhanced.			
SDG 8: Decent Work and Economic Growth	The number of males and females employed by the project.	Total: 32 Females: 8 Males: 24	Employees
<ul style="list-style-type: none"> Job Creation: The installation of new technologies will create employment opportunities and foster skill improvement. Foreign Investment: Sales of carbon credits will attract increased foreign direct investment. Industrial Growth: The project will stimulate industrial development and economic growth, benefiting local businesses such as suppliers, manufacturers, and contractors. 			

Source: [Key Project Information & Project Design Document \(PDD\); Publication Date 29.06.2023; Version v.1.5;](#)

Chapter 8

Relevant Government Incentives

8.1 Chapter Summary

8.2 Incentives for Carbon Credits

8.3 Incentives for Green Investment



Chapter 8: Relevant Government Incentives

8.1 Chapter Summary

There are two (2) types of government incentives available:

1. Incentives for Carbon Credits

Incentive	Organisation	Purpose
Further Tax Deduction for Carbon Projects (FTC)	Bursa Malaysia Malaysian Green Technology and Climate Change Corporation (MGTC)	To assure demand for Malaysian-generated carbon credits and to kick-start the VCM ecosystem in Malaysia. This will encourage project developers to invest in carbon projects that can be traded on the Bursa Carbon Exchange (BCX).

2. Incentives for Green Investments

Incentive	Organisation	Purpose
General Incentives		
Green Technology Tax Incentive	MGTC	To strengthen the development of green technology through green investment tax allowances (GITA) for the purchase of green technology asset or project and green income tax exemption (GITE) for green technology service providers.
Green Technology Financing Scheme 4.0 (GTFS 4.0)	MGTC	The scheme will focus towards providing financial support to companies including small medium companies (SME) undertaking green technology projects into various sectors.
Low Carbon Transition Facility (LCTF)	Bank Negara Malaysia (BNM)	To assist SMEs to adopt sustainable and low-carbon practices, including energy efficiency and renewable energy (RE) projects which will be able to generate carbon credits.
<i>Dana Program Pembangunan Teknologi Hijau dan Pemuliharaan Alam Sekitar</i>	Malaysia Forest Fund (MFF)	Tax deductions for cash contributions to the Forest Conservation Certificate (FCC) Programme . The FCC is implemented by the MFF.

Sector-specific Incentives		
Transport-related Incentives: i. Import duty, excise duty and sales tax exemption	Royal Malaysian Customs Department	To support the development and adoption of electric vehicles (EVs).
ii. Road tax exemption	Road Transport Department	
iii. Tax incentive for companies renting non-commercial EVs	Inland Revenue Board (IRB)	
iv. Tax incentive for manufacturers of EV charging equipment	Malaysian Investment Development Authority (MIDA)	
Carbon Capture and Storage (CCS) Incentives	Ministry of Finance (MOF)	To encourage companies to either undertake in-house CCS activities or provide CCS services.
Feed-in Tariff 2.0 (FIT 2.0)	Sustainable Energy Development Authority (SEDA)	To encourage RE producers to mitigate long-term risks and enable them to earn returns on investments to ensure sustainability.

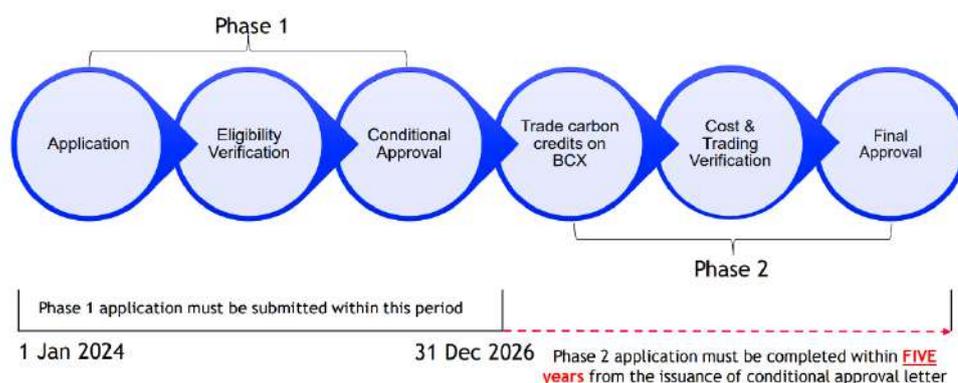
8.2 Incentives for Carbon Credits

8.2.1 Further Tax Deduction for Carbon Projects (FTC)

In Budget 2024, it was proposed that further tax deduction of up to RM300,000 be given to companies for costs incurred on the development and measurement, reporting and verification (MRV) related to the development of carbon projects. The further tax deduction is deductible from the carbon credits income traded on the BCX. This incentive is in line with the Government's aspiration to become a Net Zero nation as early as 2050 and to encourage more companies to participate in VCM.

The development of carbon projects must be registered with an international standard body recognised by BCX and expenditure on development of carbon projects must be verified by the MGTC. Exhibit 150 shows the overall process for the further tax deduction. Please refer to the full [guideline on the website](#).

Exhibit 150: Overview of the FTC Process



Source: BCX

8.3 Incentives for Green Investment

8.3.1 General Incentives

8.3.1.1 Green Technology Tax Incentive

Green technology tax incentives were first introduced by the Malaysian government in Budget 2014 to propel the growth of the nation's green economy, led by green technology.

The objectives of introducing the tax incentives are:

- i. To encourage investments in the green technology industry on a project basis, either for business purposes or own consumption, and the adoption of green technology by selected services/system providers;
- ii. To encourage companies to acquire/purchase assets that have been verified as green technology assets by the MGTC and these assets are listed under [MyHijau Directory](#); and
- iii. To widen the coverage of green services to include solar leasing activity.

There are two (2) types of tax incentives available, which are the **Green Investment Tax Allowance (GITA)** for the purchase of green technology equipment and assets, and the **Green Income Tax Exemption (GITE)** for green technology service providers. Each of these incentives has two (2) groups of eligible activities (see Exhibit 151).

Exhibit 151: Categories of incentives under the Green Technology Tax Incentive.

Incentive	Description
GITA Assets	Applicable to companies that acquire qualifying green technology assets listed under the MyHIJAU Directory for their own use/consumption.
GITA Project	Applicable to companies that undertake qualifying green technology projects for business or own consumption.
GITE Services	Applicable to qualifying green technology service provider companies that are listed under the MyHIJAU Directory .
GITE Leasing	Applicable to qualifying green technology service provider companies that are listed under the registered photovoltaic investor (RPVI) directory .

Source: [MGTC](#)

In Budget 2020, the Government had announced the extension of Investment Tax Allowance (ITA) for the purchase of green technology assets and Income Tax Exemption (ITE) on the use of green technology services until 31 December 2023. The ITE was also extended to companies undertaking solar leasing activities. In Budget 2024, the green technology tax incentives for GITA Project, GITA Asset and GITE Solar Leasing was reviewed and extended for a further three (3) years for applications received by MIDA or MGTC from 1 January 2024 to 31 December 2026.

The list of projects qualified for GITA includes projects that could be eligible for carbon credits. Examples of eligible projects are listed in Exhibit 152.

Exhibit 152: Examples of qualifying projects for GITA that could be eligible for carbon credits.

Sector/Area	Activities	Carbon Credit
Renewable energy ²⁹	Commercial and industrial business entities that undertake the generation of energy in the form of electricity, steam, heat and chilled water using renewable energy resources such as: <ul style="list-style-type: none"> • Biomass • Biogas • Mini Hydro • Geothermal • Solar power 	Avoidance
Energy efficiency	Companies investing in energy efficiency equipment or technologies and investing in energy-saving equipment.	Reduction

Source: [MGTC](#)

²⁹ Projects which have been approved with Feed-in Tariff (FiT) for solar by SEDA are not eligible for the GITA incentive.

8.3.1.2 Green Technology Financing Scheme (GTFS)

The Green Technology Financing Scheme (GTFS) is a special financing scheme introduced by the Malaysian government in 2010 to support the development of green technology (GT) in the country. The GTFS is now in its fourth iteration, known as [GTFS 4.0](#), which the government has reinstated with an allocation of RM1.0 billion for the period until 31 December 2025. The financing scheme will provide 60% to 80% government guarantee on the green component cost financed by Participating Financial Institutions (PFIs). Additionally, there will be a rebate of 1.5% per annum on the interest or profit rate.

The financing scheme comprises of five categories, including Producer, User, and Energy Services Company (ESCO), and introduces two new categories of Housing Developer and Low Carbon Mobility Infrastructure. The scheme also targets six key sectors which include Energy, Manufacturing, Building, Transportation, Waste and Water.

The details of the GTFS 4.0 are as follows:

Features	Producer of Green Technology	User of Green Technology	ESCOs	Housing Developer	Low Carbon Mobility Infrastructure
Purpose	To finance investments for the production of green products. **excluding large scale solar projects and rooftop solar photovoltaic (PV) system	To finance investments for the utilisation of green technology projects. **excluding projects under Net Energy Metering (NEM) Scheme and Self-Consumption (SELCO)	To finance investments or assets related to energy efficient projects and/or energy performance contracting	To finance the construction of green buildings, which focus on residential development, with the selling cost of maximum RM350,000	To finance EV Charge Point Operators
Financing Size	Maximum: RM100 million per group of companies	Maximum: RM50 million per group of companies	Maximum: RM25 million per group of companies	Maximum: RM100 million per group of companies	Maximum: RM50 million per group of companies
Financing Tenure	Up to 15 years	Up to 10 years	Up to 10 years	Up to 5 years	Up to 5 years
Eligibility	Legally registered Malaysian companies that have at least 60% Malaysian shareholding	Legally registered Malaysian companies that have at least 60% Malaysian shareholding	Legally registered Malaysian companies that have at least 60% Malaysian shareholding Registered with the Energy Commission as ESCO	Legally registered Malaysian companies that have at least 60% Malaysian shareholding	Legally registered Malaysian companies that have at least 60% Malaysian shareholding
Participating Financial Institutions (PFIs)	All Commercial Financial Institutions, Islamic Financial Institutions and Development Financial Institutions as per BNM				
Government Guarantee	Up to a maximum 60% for the green cost of the finance amount for energy, manufacturing, transport, buildings and water, while for the waste sector, up to a maximum of 80% for the green cost of the finance amount				
Government Incentives	i. Rebate of 1.5% per annum on interest/profit rate				
Period of Rebate	ii. Up to 7 years	iii. Up to 7 years	iv. Up to 7 years	v. Up to 5 years	vi. Up to 5 years

Interest/Profit Rate	Determined by Participating Financial Institutions (PFI's) for financing
Source of Fund	Participating Financial Institutions (PFI's)
Implementation Agencies	Ministry of Natural Resources and Environmental Sustainability (NRES)) and MGTC
Application Method	All applications must be submitted to MGTC for green project certification. The successful applicant then proceeds to forward application for financing to any Participating Financial Institutions (PFI's)
Application Date	The Scheme will be open until 31 December 2025 or until the allocation is fully utilised (whichever is earlier)

8.3.1.3 Low Carbon Transition Facility (LCTF)

The Low Carbon Transition Facility (LCTF) was established by [Bank Negara Malaysia \(BNM\)](#) to assist small and medium enterprises (SMEs) in adopting sustainable and low-carbon practices. Each SME is entitled to financing of up to RM10 million, with a maximum financing rate of 5.0% per annum for up to ten (10) years. Potential projects that are eligible for this fund include energy efficiency and renewable energy projects which will be able to generate carbon credits.

8.3.1.4 Dana Program Pembangunan Teknologi Hijau dan Pemuliharaan Alam Sekitar

Companies or individuals can apply for tax incentives under *Dana Program Pembangunan Teknologi Hijau dan Pemuliharaan Alam Sekitar*.³⁰ Under the said provision, companies and individuals that make contributions to forests through the FCC are eligible for tax deductions of up to 10% of the aggregate income, valid from 1 January 2023 to 31 December 2027, and are limited to a maximum cumulative amount of RM55 million in allowable tax deductions. Contributions in this context refer solely to cash contributions of RM1,000 and above and are subject to provisions stipulated in subsection 44(11C) of the Income Tax Act 1967.

8.3.2 Sector-specific Incentives

8.3.2.1 Transport-related Incentives

Incentives for the transport sector mostly revolve around EVs, where investments in EVs³¹ may generate avoidance carbon credits. The incentives currently available for EVs are as in Exhibit 153.

³⁰ Malaysia Forest Fund.

³¹ It is highly recommended that readers also refer to the [Methodology for EV Charging Systems](#) for project applicability and additionality conditions. The methodology is currently applicable globally and provides a positive list for determining additionality for regions with less than 5% market penetration of EV.

Exhibit 153: Incentives available for EVs in Malaysia.

Sector/Area	Activities
	<ol style="list-style-type: none"> 1. 100% exemption on import duty on components for local EV assembly; 2. 100% exemption on excise duty and sales tax for CKD EVs; valid till the end of 2025.
Road tax exemption	100% exemption from road tax – Applicable to batteries and fuel cells (Hydrogen) for EVs but not hybrid vehicles until end 2025
Tax incentive for companies renting non-commercial EVs	Companies that rent non-commercial EVs are given a tax deduction on the rental amount up to RM300,000, effective YA2027.
Tax incentive for manufacturers of EV charging equipment	<ol style="list-style-type: none"> 1. 100% income tax exemption on statutory income for up to ten (10) years for companies that make early investments from YA2023 to YA2032. If the investments are made by the company after YA2023, the company will be eligible to enjoy the incentive for the remaining period only; or 2. Five-year 100% Investment Tax Allowance set off against 100% of statutory business income for each YA.

Source: [MOF](#)

8.3.2.2 Carbon Capture and Storage (CCS) Incentives

As outlined in the [National Energy Policy 2022-2040](#), Malaysia must guarantee the realisation of the Low Carbon Nation goal by 2040. To accomplish this goal, the government has recognised an approach to limit CO₂ emissions through the utilisation of CCS technology. The oil and gas as well as power generation sectors in Malaysia are the leading industries that have the potential to utilise CCS technology, which consists of three (3) main activities:

- i. Carbon capture;
- ii. Transportation of captured CO₂; and
- iii. Underground or sea bed carbon storage.

Exhibit 154 displays the incentives that can be awarded to companies that either undertake in-house CCS activities or provide CCS services.

Exhibit 154: Incentives for CCS.

Category	Incentive
Companies undertaking in-house CCS activities	<ol style="list-style-type: none"> 1. Investment Tax Allowance (ITA) of 100% of qualifying capital expenditure for a period of ten (10) years. The allowance can be set off against up to 100% of business statutory income. 2. Full import duty and sales tax exemption on equipment used for CCS technology, commencing on 1 January 2023, until 31 December 2027. 3. Tax deduction for allowable pre-commencement expenses within five (5) years from the date of commencement of operations.
Companies undertaking CCS services	<ol style="list-style-type: none"> 1. ITA of 100% of qualifying capital expenditure for a period of ten (10) years. The allowance can be set off against up to 100% of statutory income. 2. Tax exemption of 70% on statutory income for a period of ten (10) years. 3. Full import duty and sales tax exemption on equipment used for CCS technology, starting 1 January 2023, until 31 December 2027.

Source: [MOF](#)

8.3.2.3 Feed-in Tariff 2.0 (FIT 2.0)

Malaysia has transitioned to a phase where RE is being utilised. The [Feed-in Tariff \(FiT\)](#) system has played a significant role in providing the impetus to the RE industry. FiT employs a two-pronged strategy of encouraging RE producers through incentives to mitigate long-term risks and enabling them to earn returns on investments to ensure sustainability. The FiT guarantees that Feed-in Approval Holders (FiAHs) have access to the national grid with a contractually fixed rate for the effective period.

FiT covers four types of RE sources, including biogas, biomass, small hydropower and solar PV. Those who have been approved as FiAHs are ensured of receiving payments for a set period from the RE Fund, which is 21 years for solar PV and small hydropower, and 16 years for biogas and biomass. Power utility companies are obligated to enter into a Renewable Energy Power Purchase Agreement (REPPA) with FiT-approved individuals or entities during the effective period.

SEDA recently introduced improvements to the existing FiT application process in October 2024 with the launch of [FIT 2.0](#), featuring a two-phase tariff system, with the first phase offering a fixed FiT rate for the first 10 years, and the second phase allowing eligible companies to bid within the tariff floor and ceiling rates set by SEDA for the remaining 11 years of the REPPA.

Chapter 9

Frequently Asked Questions (FAQs)

9.1 General

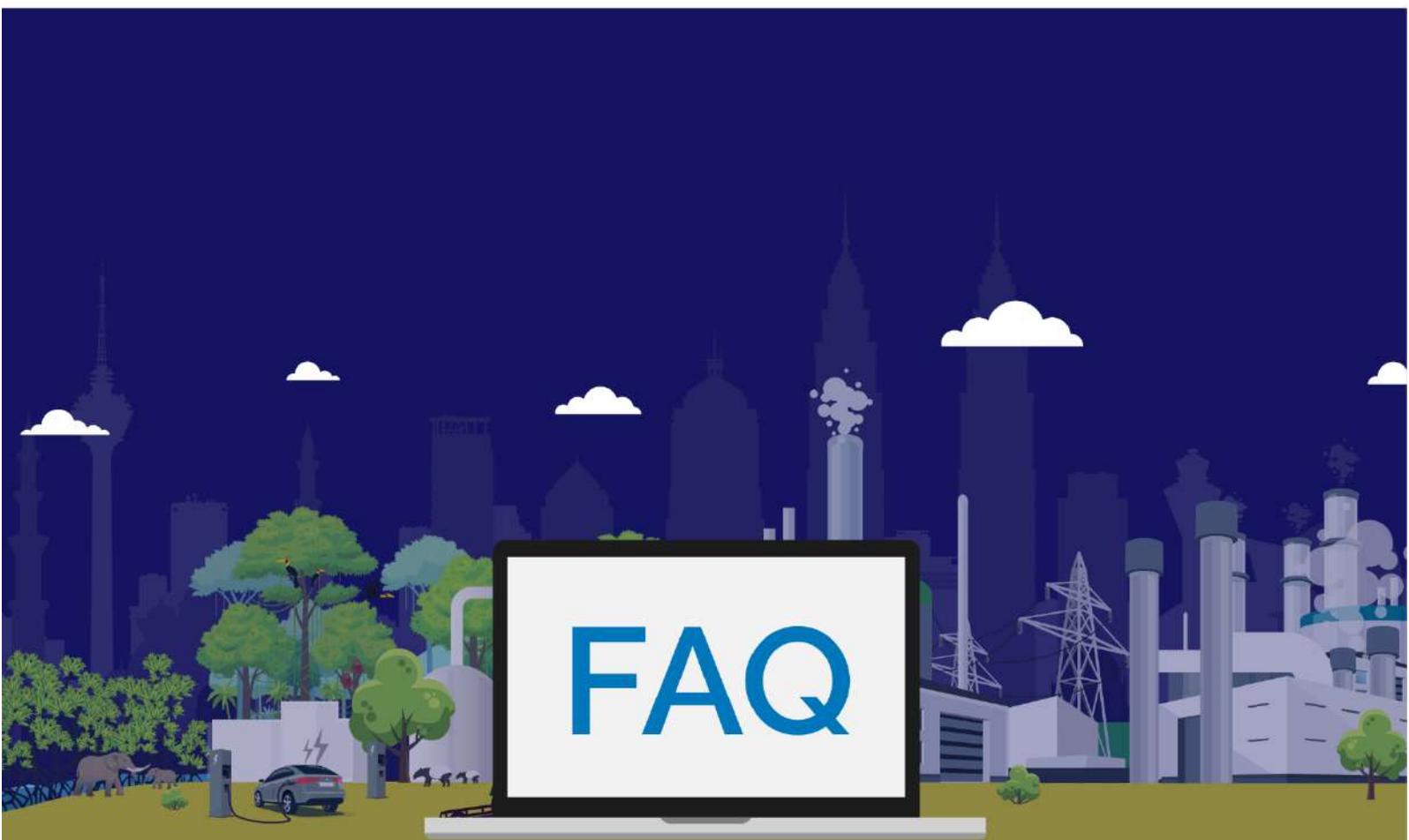
9.2 Carbon Credits

9.3 Crediting Period

9.4 Registration

9.5 Project-Specific

9.6 The VCM Directory



Chapter 9: Frequently Asked Questions (FAQs)

9.1 General

1. How can an organisation apply to register for a carbon project to enable carbon credits to be issued for transacting in a voluntary carbon market (VCM)?

Any project that involves the capturing or avoidance of GHGs, which can be nature- or technology-based, could potentially be registered to participate in any VCM.

Project owners, also known as project proponents, have the option of choosing which carbon standard and registry to use (e.g. Verra, Gold Standard, etc.). The choice of registries is open and based on the reputation, service or focus that is provided.

The common steps are the process and requirements that need to be fulfilled for project registration. Validation and verification by an independent external party is mandatory for all standards/registries.

Registration is only the first step of carbon credit issuance, as periodical monitoring reports, which summarise the emission reductions achieved throughout certain monitoring periods, have to be submitted and approved prior to carbon credit issuance and subsequent trading of carbon credits.

For more information, please refer to [Chapter 5](#) of this Handbook.

2. Is the VCM the same as carbon footprint?

No. The carbon footprint is a (calculated) direct and indirect measure of CO₂ emitted into the atmosphere by an entity/activity/organisation/individual/product, expressed in tonnes of carbon dioxide equivalent (tCO₂e).

The VCM, on the other hand, is a market for the trading of emission reductions, where the emission reductions are also expressed in tCO₂e.

Organisations with environmental/sustainability targets can purchase credits or voluntarily offset their carbon footprint, fulfil their organisations' voluntary environmental/sustainability commitment or create carbon-neutral products for their customers. This is usually mainly motivated by demands from their key stakeholders, e.g. financial institutions, customers, etc.

3. What is the difference between 'carbon credit' and 'carbon offset'?

The terms 'carbon credit' and 'carbon offset' are often used interchangeably. In essence, they refer to the same "item" or "product" with the same unit of measurement, i.e. tonnes of carbon emissions (tCO₂e), but each term can be used for different purposes.

In general, a carbon credit is a verified amount of carbon emission reductions or carbon removals that can be used as a carbon offset, i.e. when it comes to achieving the carbon neutrality or net zero carbon goals of an organisation.

9.2 Carbon Credits

1. Can carbon credits be issued based on the carbon footprint or GHG inventory reported by a company?

Any emission reduction, avoidance or removal achieved by a company and reported in the company's GHG inventory cannot be automatically converted into carbon credits. The decarbonisation activity must be conducted in accordance with an approved methodology and validated and registered under a GHG-crediting programme. The emission reduction, avoidance or removal must also be verified by an independent body before carbon credits can be issued.

For more information, please refer to [Chapter 5](#) of this Handbook.

2. There is a growing demand for carbon removal credits. Are removal credits of higher quality than avoidance carbon credits?

The carbon removal analogy is similar to capturing carbon and "locking" it up to prevent its release into the atmosphere. Examples of such actions include planting trees, carbon capture and storage, carbon farming, etc.

Carbon avoidance is a different concept where the carbon is prevented from being emitted into the atmosphere by measures such as fuel switching, using renewable energy, etc.

Lately, the credits from carbon removal projects have been given more preference to carbon reduction as they are interpreted as having higher quality. This is likely due to the notion that carbon removal is essential to reducing the amount of carbon already trapped in the earth's atmosphere. This perception is misleading, as at the rate the world is going, capturing carbon in the atmosphere will not be able to catch up with the rate of the release of carbon into the atmosphere. We are now in a situation where both reducing our emissions and capturing greenhouse gases must work in tandem. Therefore, carbon credits from both removal and avoidance projects are of equal importance. [To use a metaphor: When the bathtub is overflowing, mopping the floor isn't enough. We need to turn off the taps.](#)

3. Does authorisation of carbon credits (under Article 6 of the Paris Agreement) imply that these carbon credits are of higher quality?

No. The act of authorisation does not depict quality. Authorisation is only an accounting adjustment needed for the host's and recipient country's national GHG inventory to accurately report their NDC achievements.

9.3 Crediting Period

1. What is the crediting period for carbon credits?

The crediting period is the period in which a crediting project can be issued carbon credits for the emissions it avoids or the removals it causes. Crediting period selection depends on the type of project and the standards which it is registered under.

For more information, please refer to [Chapter 5](#) of this Handbook.

9.4 Registration

1. How long will it take for a carbon project to be successfully registered?

Depending on the standard it is registered under, the complexity of the project, site preparation, documentation and participation of all parties involved in project conceptualisation, the process could take anywhere from a few months to more than (1) year for the completion of the registration process, i.e. from opening an account to the successful registration of a project.

Note that the process of registration might involve multiple rounds of clarification of issues and back-and-forth responses required from different parties until all non-conformances/clarifications are fully resolved. Successful generation of carbon credits, however, can only be achieved upon the implementation of projects and proven emission reductions.

For more information, please refer to [Chapter 5](#) of this Handbook.

2. Is there any expiration on carbon credits?

Most carbon registries do not have any expiration date for carbon credits issued. Once the carbon credits are used (i.e. retired), for example, to offset a carbon footprint, they can no longer be traded or dealt with.

3. If a carbon project is implemented under the GTFS (Green Technology Financing Scheme)³² or has a Feed-in Tariff³³ for grid interconnection, will it still qualify for carbon credits?

The project may still qualify provided that it is able to demonstrate GHG emission reductions, meeting the requirements specified in an approved methodology (for example, pertaining to principles of additionality, permanence, etc.). A project owner is allowed to use any means of funding to finance a project subject to the requirements of the methodology.

4. Can a project in Malaysia that is registered with Verra's Verified Carbon Standard (VCS) or Gold Standard for the Global Goals (GS4GG, referred to as GS from here forth) be traded on the BCX?

Yes. Currently, only Verified Carbon Units (VCU) under the VCS and Verified Emission Reductions (VER) Units under the GS can be traded on the BCX under a standardised contract that meets BCX's contract specifications.

For more information, please refer to [BCX Contract Specifications](#).

5. What is the difference between the Clean Development Mechanism (CDM), the VCS and the GS?

The CDM is one (1) of the mechanisms of emission reduction under the United Nations Framework Convention on Climate Change (UNFCCC). CDM emission reduction was mandatory as it was ratified by developing and developed countries. The CDM came to an end on 31 December 2020, which marked the end of the 3rd Crediting Period under the Kyoto Protocol. A new carbon trading mechanism under

³² Malaysian Green Technology and Climate Change Corporation.

³³ Sustainable Energy Development Authority (SEDA).

Article 6.4 of the Paris Agreement³⁴ is currently being developed but not in operation yet. Currently, carbon credits from the CDM will only qualify for trading on the BCX if they are converted to VCS or GS carbon credits.

The VCS and GS on the other hand, are both voluntary and has no legally binding targets set by countries. Instead, organisations that are committed to reducing emissions due to individual interests or sustainability efforts can choose to offset their emissions using VCS carbon credits.

For more information, refer to [Chapter 4](#) of this Handbook.

- 6. Can a CDM project be transferred/ transitioned to the Verra Registry or the GS Registry without undergoing the registration process all over again?** It is possible to convert a CDM project to a VCS or GS project. It is a slightly different process from registering a project from scratch.

Project proponents with projects registered under the CDM can potentially be suppliers of standardised carbon contracts for trading on BCX, provided that they are able to convert their issued Certified Emission Reductions (CERs) to Verified Carbon Units (VCUs) in the VCS registry, or Verified Emission Reductions (VER) Units under the GS registry and the credits' vintage is from 2016 onwards.

For more information, refer to [Chapter 4](#) of this Handbook.

- 7. Is there a possibility of a successfully registered carbon projects and not claiming any carbon credits?**

Yes. There are many contributing factors to this, in addition to market dynamics. Many owners are of the opinion that once the project is running, the total estimated carbon reductions in the initial registration stage can be claimed. However, the main issues overlooked by project developers are the importance of monitoring where proper equipment maintenance and calibration are needed to ensure data accuracy.

Besides that, emission reduction claims need to be verified by a third party. During this run-through, the absence of calibration records and monitoring data will give rise to data uncertainty. Therefore, in many cases, monitoring data collected needs to be statistically re-calculated for a more conservative reading, which usually results in lower emission reduction claims.

In addition to the issues highlighted above, the commercial viability depends on the cost of verification and the proceeds from the sales of carbon credits.

For more information, refer to [Chapter 7](#) of this Handbook.

³⁴ The Paris Agreement is the new climate treaty ratified by international communities to address climate change under the United Nations Framework Convention for Climate Change (UNFCCC).

9.5 Project-Specific

1. What are the common projects in Malaysia that may qualify for carbon credits?

For more information on types of eligible projects under the VCS and GS, refer to [Chapter 4](#) of this Handbook.

2. What should one do if unsure of whether a potential carbon project is feasible?

A key step before any carbon project development is to assess the eligibility and feasibility of the project. The eligibility (refer to [Chapter 4](#) of this Handbook for information on examples of eligible projects) requires an assessment of additionality, applicable approved methodologies and so on. The feasibility study will typically include a financial analysis of the project, including assessing the estimated project capital and operating cost, as compared to revenue estimation.

If such an assessment cannot be performed within an internal capacity, one may consider engaging a carbon consultant with relevant experience to assist in the assessment.

For more information, refer to next section (Section 9.6).

9.6 The VCM Directory

The Voluntary Carbon Market Directory (VCM Directory) aims to connect users with a wide range of service providers who specialise in various aspects of the VCM. The creation of a directory of carbon industry service providers serves as a valuable resource for individuals and organisations in the VCM industry by listing Consultants, Validation/ Verification Bodies (VVBs), Project Developers and Financial Institutions (FIs), making it easier for interested parties to connect and collaborate. Its goal is to empower users to make informed decisions, promote collaboration and drive positive environmental impact.

Listing in the VCM Directory is **open to local companies** that are registered with the Companies Commission of Malaysia under the Companies Act 2016 [Act 777] which have a registered address and business address in Malaysia, **as well as foreign companies** that are legally registered and have obtained a licence to operate in their respective countries, subject to the prevailing laws and regulations of the Government of Malaysia.

VCM Directory Categories

Here, four (4) categories in the VCM Directory listing are focused on, which are:

Categories	Details
Consultants	<p>1. Carbon Project Consultant A Malaysian- or foreign-registered company that makes a formal application for VCM Directory listing based on providing consultancy services in Carbon Project Development according to selected carbon standards requirements and assisting the project owner in the registration and issuance of carbon credits.</p> <p>2. Measurement, Reporting and Verification (MRV) An expert Malaysian- or foreign-registered company that makes a formal application for VCM Directory listing based on providing MRV services in Carbon Project Development. The services include scientific research, IoT and technology expertise.</p>
Validation/Verification Bodies (VVBs)	A Malaysian- or foreign-registered company that makes a formal application for VCM Directory listing based on providing independent third-party services on validation and verification in Carbon Project Development.
VCM Project Developers	A Malaysian- or foreign-registered company that undertakes the development and implementation of projects in the VCM.
Financial Institutions (FIs)	A Malaysian licensed institution under Malaysian laws and regulations that makes a formal application for VCM Directory listing based on providing financing services for Carbon Project Development.

The VCM Directory can be assessed [here](#).

Appendices

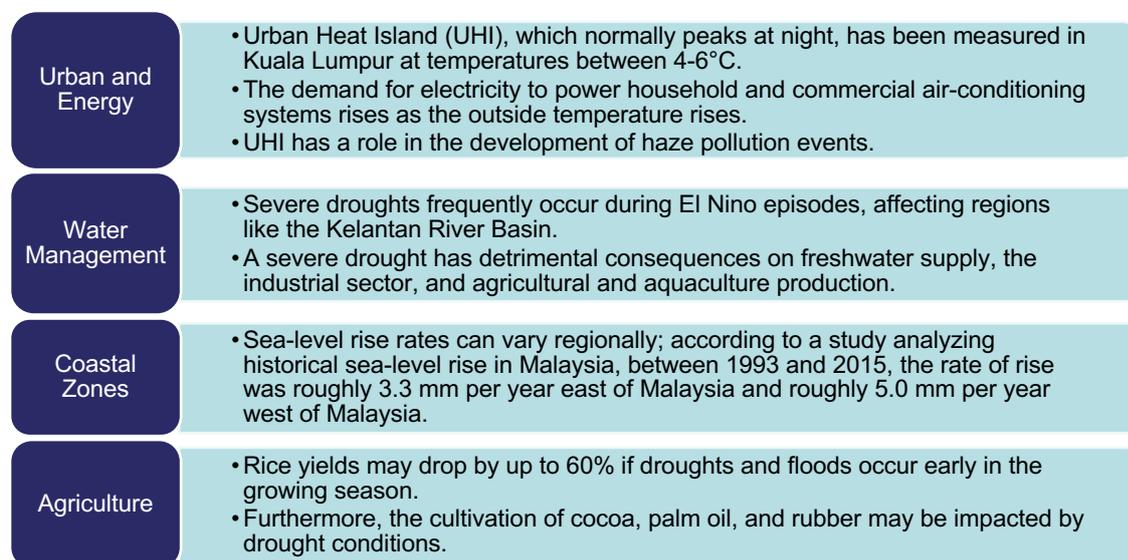
Appendix 1

1. Impacts of Climate Change by Sector

1.1. Environmental Impacts

Climate change can cause irreversible damage to ecosystems, including loss of biodiversity, deforestation, desertification and water scarcity. These impacts can have devastating consequences for human health and well-being. Between 1970 and 2013, Peninsular Malaysia, Sabah and Sarawak experienced surface mean temperature increases of 0.14°C - 0.25°C per decade. The summary of climate impacts for the main economic sectors in Malaysia can be seen in Diagram 1.

Diagram 1: Climate change impacts by economic sectors in Malaysia.

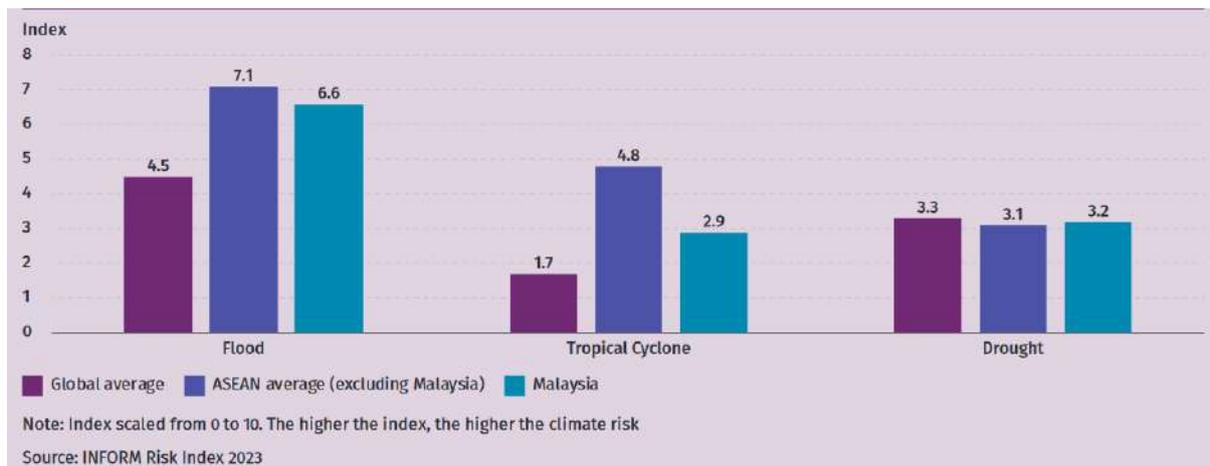


Source: Climate Risk Country Profile – Malaysia and the UN's 2021 publication, Disaster Risk Reduction in Malaysia: 2020 Status Report, World Bank Group and Asian Development Bank

1.2. Economic Impacts

Infrastructure damage decreased agricultural production and elevated healthcare expenditures as a result of air pollution and other environmental variables are a few of the substantial economic effects that climate change may have. Diagram 2 shows the physical risks of natural disasters in Malaysia and the impacts on monetary value.

Diagram 2: Physical risks of natural disasters.

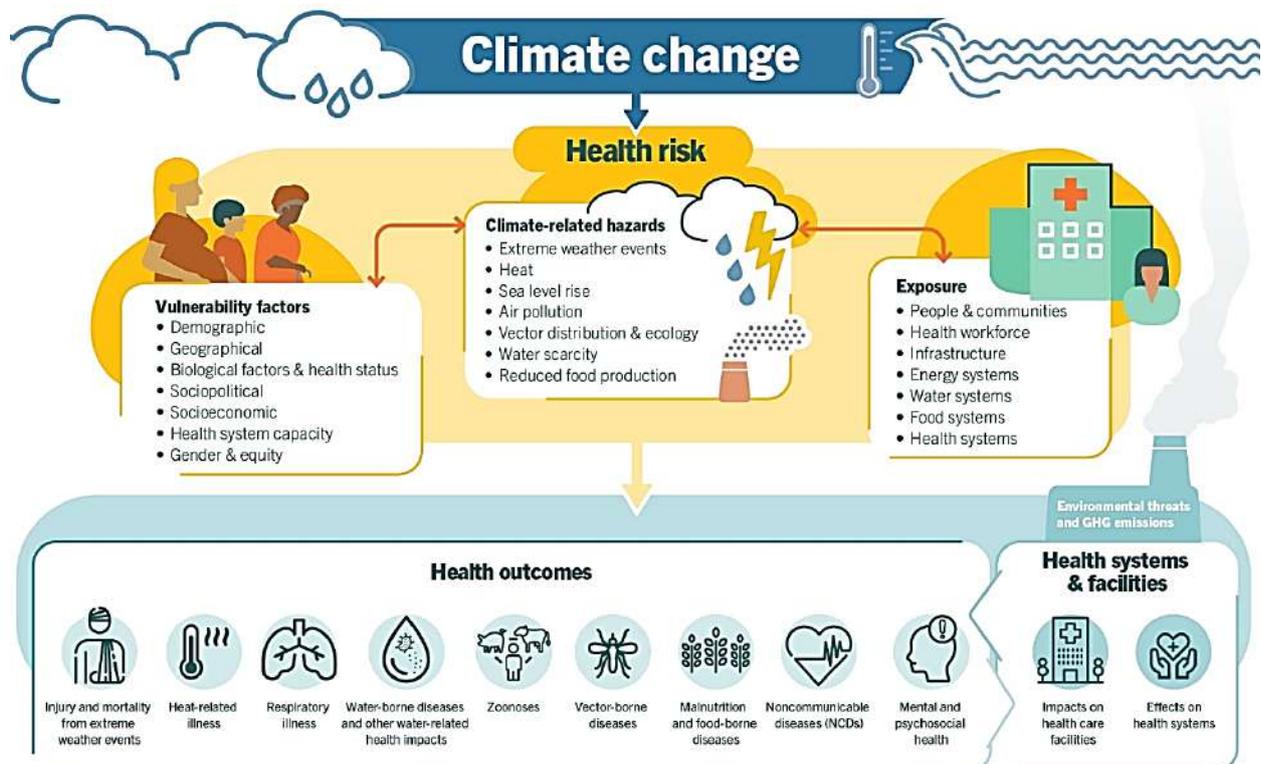


Source: Economic and Monetary Review 2022, Bank Negara Malaysia

1.3. Human Health Impacts

Climate change leads to heat waves, droughts and other extreme weather events, which can cause illness, injury and death. It can also exacerbate air pollution and the spread of infectious diseases. Diagram 3 explains the facts on the health impacts due to extreme temperature changes.

Diagram 3: Impacts of climate change on human health.



Source: Climate Change Factsheet, World Health Organization (2023).

1.4. Social Impacts

Climate change can exacerbate social inequalities, such as access to resources and opportunities, which can lead to conflict and displacement. The social dimensions of climate change are summarised in Diagram 4.

Diagram 4: Social dimensions of climate change.

“Climate change is deeply intertwined with global patterns of inequality. The poorest and most vulnerable people bear the brunt of climate change impacts yet contribute the least to the crisis. As the impacts of climate change mount, millions of vulnerable people face disproportionate challenges in terms of extreme events, health effects, food, water, and livelihood security, migration and forced displacement, loss of cultural identity, and other related risks.”

Source: [World Bank](#), (n.d.)

1.5. Impacts on Global Stability

Climate change is a global issue that affects all nations and regions, and its impacts can have geopolitical implications. It can lead to increased competition for resources and exacerbate existing conflicts. Diagram 5 summarises the impacts of climate change on global stability.

Diagram 5: Impacts of climate change on global stability.



Source: [World Bank Group \(2023\)](#)

Appendix 2

Global Responses and National Commitments

2.1 Global Commitment to Climate Change

To address climate change, several global agreements and initiatives have been formulated or established, as shown in Diagram 6.

Diagram 6: Global agreements and initiatives to address climate change.

Global Agreements or Initiatives	Description
UNFCCC	<ul style="list-style-type: none"> o In 1992, the UNFCCC, which is a framework for international cooperation to combat climate change by limiting average global temperature increases and the resulting climate change, and to cope with impacts that were by then inevitable, was created. o The UNFCCC came into effect on 21 March 1994. o The 198 countries that have ratified the Convention are called Parties to the Convention. o By 1995, countries launched negotiations to strengthen the global response to climate change.
Kyoto Protocol	<ul style="list-style-type: none"> o The Kyoto Protocol was adopted on 11 December 1997 and entered into force on 16 February 2005. 192 countries joined the Parties to the Kyoto Protocol. o The Kyoto Protocol operationalised the UNFCCC by committing industrialised countries and economies in transition to limit and reduce GHG emissions in accordance with agreed individual targets. o It only bound developed countries under the principle of "common but differentiated responsibilities and respective capabilities" (CBDR-RC) because it was recognised that developed countries are largely responsible for the high levels of GHG in the atmosphere. o In its Annex B, the Kyoto Protocol set binding emission reduction targets for 37 industrialised countries and economies in transition and the European Union. o Overall, these targets added up to an average 5% emission reduction compared to 1990 levels over the five-year period from 2008 to 2012 under the first commitment period. o One important element of the Kyoto Protocol was the establishment of flexible market mechanisms, which are based on the trade of emissions permits. Under the Protocol, countries

	<p>must meet their targets primarily through national measures. However, the Protocol also offers additional means for countries to meet their targets by way of market-based mechanisms:</p> <ul style="list-style-type: none"> i. International Emissions Trading; ii. The Clean Development Mechanism (CDM); and iii. Joint Implementation (JI).
<p>Doha Amendment (under the Kyoto Protocol)</p>	<ul style="list-style-type: none"> o On 8 December 2012, the Doha Amendment to the Kyoto Protocol was adopted for a second commitment period, starting in 2013, until 2020. o As of 28 October 2020, 147 Parties had deposited their instrument of acceptance; therefore, the threshold of 144 instruments of acceptance for entry into force of the Doha Amendment was achieved. The amendment entered into force on 31 December 2020. o The amendment included: <ul style="list-style-type: none"> i. New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments during the second commitment period from 1 January 2013 to 31 December 2020; ii. A revised list of GHG to be reported by Parties during the second commitment period; and iii. Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.
<p>The Paris Agreement</p>	<ul style="list-style-type: none"> o The Paris Agreement is a legally binding international treaty on climate change. o It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France on 12 December 2015. o It entered into force on 4 November 2016. The overarching goal is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels”. o Implementation of the Paris Agreement requires economic and social transformation, based on the best available science. o The Paris Agreement works on a five (5)-year cycle of increasingly ambitious climate action – or ratcheting up – carried out by countries. o Since 2020, countries have been submitting their national climate action plans, known as Nationally Determined Contributions (NDCs). o Each successive NDC is meant to reflect an increasingly higher degree of ambition compared to the previous version.

	<ul style="list-style-type: none"> o An important element of the Paris Agreement is Article 6, which aims to establish an international compliance market where a host country can sell Internationally Transferred Mitigation Outcomes (ITMOs) to other countries, and this would be counted towards the purchasing countries' NDC targets.
<p>United Nations Sustainable Development Goals (SDGs)</p>	<ul style="list-style-type: none"> o The SDGs establish a framework for nations to structure their efforts to achieve sustainable development, with an emphasis on eradicating poverty, preserving the environment and fostering prosperity for all by 2030. Also known as Global Goals, the 17 SDGs were adopted by the United Nations in 2015. <p>Goal 13: Climate Action, which urges urgent action to be taken to combat climate change and its impacts.</p>

2.2 The Malaysian Government's Climate Change Commitment

The Malaysian government has made several commitments in response to the global challenge of climate change. This section provides an overview of the commitments made by the Malaysian government.

1.2.1 Nationally Determined Contribution (NDC) to the UNFCCC

Malaysia is one of the countries that have submitted their [NDCs](#) to the UNFCCC as part of the commitment to the Paris Agreement. An NDC outlines a nation's climate change mitigation and adaptation efforts and its intended contributions towards achieving the goals of the Paris Agreement.

In July 2021, Malaysia submitted an updated NDC that intends to reduce its economy-wide carbon intensity (against its gross domestic product) by 45% in 2030, compared to the 2005 level. The updated NDC includes the following increased climate ambitions:

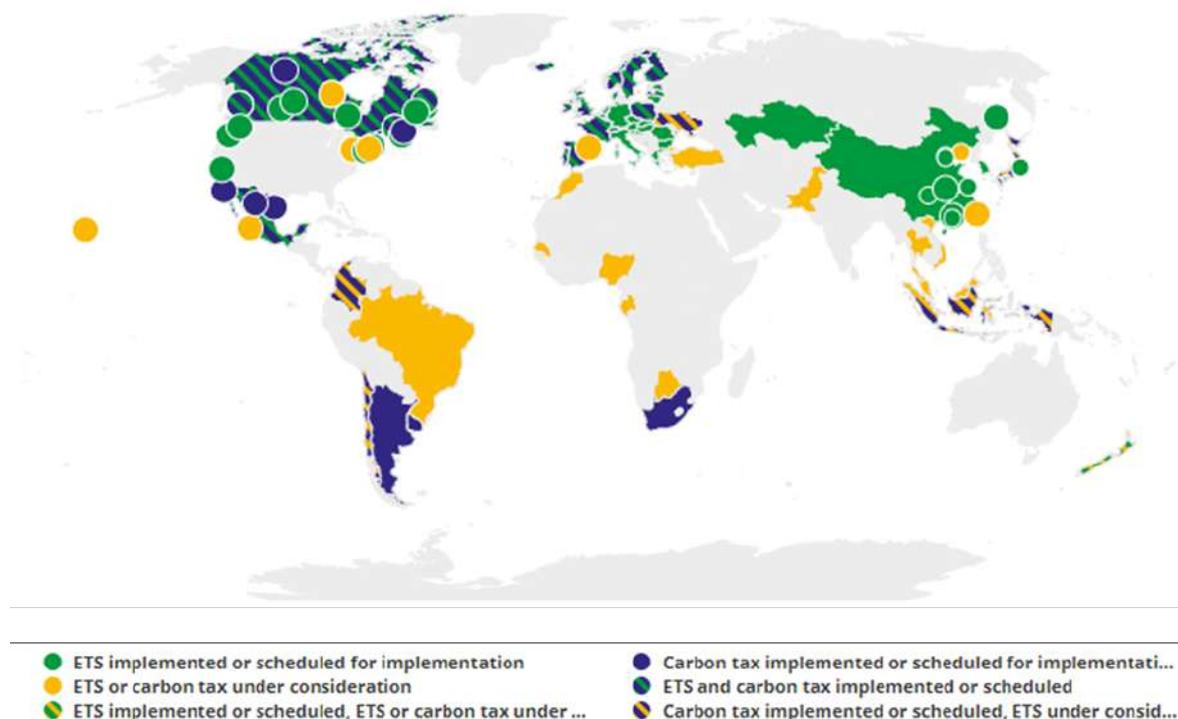
- o 45% of the carbon intensity reduction is unconditional;
- o The new target is an increase of 10% from the earlier submission;
- o GHG coverage is expanded from three (3) to seven (7) gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃);
- o The adaptation component was expanded, with a particular focus on protecting biodiversity;
- o Climate resilience was mainstreamed into urban planning; and
- o A National Adaptation Plan and NDC Roadmap will be developed to help achieve Malaysia's NDC targets.

1.2.2 Compliance Carbon Market

Compliance carbon markets are created because of national, regional and/or international policies or due to regulatory requirements that compel countries to limit or reduce their GHG emissions. Compliance carbon markets can operate at international or domestic levels that function under government-mandated programmes or regulatory frameworks governed by international treaties or agreements such as the Kyoto Protocol and the Paris Agreement.

The Emission Trading Scheme (ETS) has become a crucial marketplace for the trading of carbon allowances that have been incorporated as part of the design of cap-and-trade systems in industrialised countries as a tool to promote accountability. Participation in the carbon markets became mandatory in these jurisdictions. The implementation of the ETS, including cap-and-trade programmes and carbon taxes, is shown in Diagram 7.

Diagram 7: Summary map of ETS and carbon tax implemented and/or scheduled for implementation.



Source: https://carbonpricingdashboard.worldbank.org/map_data

Examples of compliance carbon markets include the European Union Emission Trading System (EU ETS), the Western Climate Initiative (WCI) and the Regional Greenhouse Gas Initiative (RGGI).

Carbon tax, on the other hand, is a tool for policymaking that entails charging a fee for either the carbon content of fossil fuels or GHG emissions. This tax serves as a financial deterrent to entities emitting GHG and promotes the adoption of cleaner and more sustainable alternatives. The Federal Government announced during Budget 2025 its plans to implement a carbon tax on the iron, steel and energy industry by 2026. However, it remains undecided whether an ETS will be implemented. The decision to implement either an ETS or a carbon tax hinges on a variety of factors, including policy objectives,

political considerations and the unique circumstances of the jurisdiction implementing the measure.

The effectiveness of the Kyoto Protocol (an international agreement under the UNFCCC such as the CDM) has been limited due to several factors. The developed countries are legally bound by emission reduction targets. However, some major emitters have never ratified the agreement and several others have withdrawn or did not commit to further emission reduction commitments after the first commitment period. The Kyoto Protocol also did not include major emerging economies which have become significant contributors to global emissions in recent years. The Kyoto Protocol required strong enforcement mechanisms, making it challenging to ensure compliance with emission reduction targets. This weakened its effectiveness in driving substantial global emission reductions.

The NDCs are at the heart of the Paris Agreement and the achievement of its long-term goals. The Paris Agreement requires all Parties to put forward their best efforts through NDCs and to strengthen these efforts in the years ahead. NDCs outline the specific actions, targets and policies that countries will undertake to contribute to the global goal of reducing GHG emissions and adapting to climate change impacts. Parties shall pursue domestic mitigation measures to achieve the objectives of such contributions. NDCs are submitted every five years to the UNFCCC secretariat. To enhance the Parties' ambition over time, the Paris Agreement provides that successive NDCs will represent a progression compared to the previous NDC and reflect their highest possible ambition.

1.2.3 Sustainable Development Goals (SDGs)

Malaysia has been actively involved in efforts to address these Goals and has undertaken various initiatives to mitigate climate change and promote sustainable practices. In 2010, Malaysia created the New Economic Model (NEM) to further solidify its commitment to pursuing sustainable development. The NEM is based on three (3) pillars: high income, inclusivity and sustainability, which correspond to the three SDG components of economics, social impact and environmental sustainability.

Malaysia has also committed to achieving the United Nations SDGs, including SDG 13 which focuses on climate action, as shown in Diagram 8.

Diagram 8: SDG Goal 13 targets.

“Goal 13 Targets:

Major Targets

13.1. Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

13.2. Integrate climate change measures into national policies, strategies, and planning.

13.3. Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

Additional Targets

13.a. Implement the commitment undertaken by developed-country parties to the UNFCCC) to a goal of mobilising jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalisation as soon as possible.

13.b. Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalised communities.”

Source: Goal 13: Climate action. *The Global Goals*. (2023, April 18)

The SDGs are now incorporated into our national goals, through the Shared Prosperity Vision 2030 (SPV 2030) and the 12th Malaysia Plan 2021-2025 (12th MP), as shown in Diagram 9.

Diagram 9: National goals towards sustainability and climate action.



Source: Google search

Malaysia's commitment to reducing GHG emissions intensity by 45% in 2030, relative to its GDP, as outlined in the NDC under the Paris Agreement, aligns with its efforts towards achieving SDG Goal 13. By working towards this target, Malaysia is actively addressing climate change and its impacts.

The implementation of the SDG Goals in Malaysia will follow a systematic phased approach. The government's concerted efforts are meticulously delineated in the SDG Roadmap document. To effectively realise the SDG Goals, the Malaysian government has adopted a three (3)-phase strategy as illustrated in Diagram 10. This strategy reflects a resolute commitment to transform Malaysia into a nation characterised by sustainable growth and the just and impartial distribution of resources and opportunities across all segments of society.

Diagram 10: Timeline set for SDG 13.

Target	Phase 1 (2016-2020)	Phase 2 (2021-2025)	Phase 3 (2026-2030)
13.1	→	→	→
13.2	→	→	→
13.3	→	→	→
13.a	Not Relevant		
13.b			→

Source: SDG Roadmap for Malaysia developed by Economic Planning Unit, Prime Minister's Department

The endeavours towards sustainability and climate action have been seamlessly integrated into the 12th MP as a strategic framework and action plan, facilitated by the Ministry of Economics (formerly known as the Economic Planning Unit). This inclusion demonstrates a concerted effort to incorporate sustainability principles and climate-focused initiatives into the national development agenda. The strategy and priority areas on sustainability in national development, as well as the targets, are explained in Diagram 11.

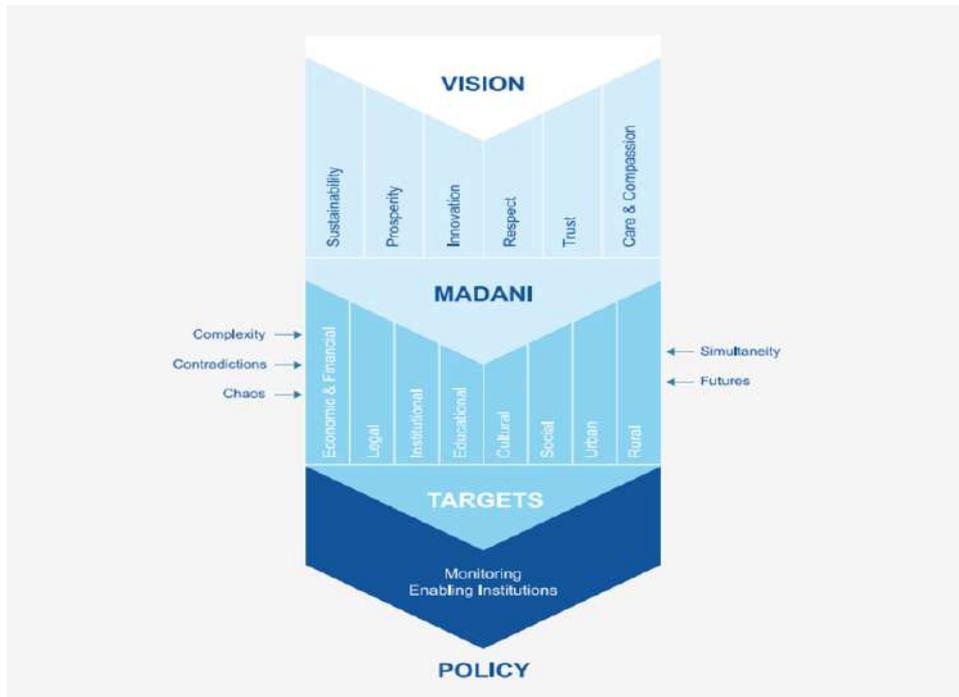
Diagram 11: 12th Malaysia Plan priority areas and strategies.



Source: [12th Malaysia Plan](#)

The 10th Prime Minister of Malaysia introduced [Malaysia MADANI](#), which includes sustainability as one of the six (6) policy pillars to drive national development, as shown in Diagram 12. The Madani framework in Malaysia encompasses initiatives aligned with UN SDG 13 on climate action. The country faces rising concerns about food security caused by supply chain disruptions, extreme weather events, energy costs and limited access to imported food supplies. The National Food Security Policy (2021-2025) guides efforts to ensure sufficient food resources for every citizen by increasing domestic production, adopting technology and reducing dependency on imports. The government aims to modernise the agriculture sector, provide subsidies and incentives and support MSME agropreneurs to enhance crop production and food processing.

Diagram 12: The six (6) policy pillars of Malaysia Madani.



Source: [Budget 2023](#)

To achieve net zero GHG emissions by 2050 and become a high-income nation, Malaysia will focus on enhancing natural carbon absorption, promoting renewable energy adoption and improving energy efficiency across sectors. The government encourages the carbon accounting ecosystem and identify suitable carbon pricing mechanisms. Additionally, efforts to preserve healthy forests, soil and mangroves will help reduce the impacts of natural disasters and contribute to food security. Conserving marine ecosystems, including mangroves and coral reefs, will increase fish and seafood stock while reducing risks to food security. Increasing tree cover and preserving natural forests will strengthen carbon absorption capabilities and support the net zero emissions goal. [The Budget 2025](#), with a clear focus on renewable energy, climate mitigation, EV development, and biodiversity preservation, demonstrates that Malaysia is not only addressing immediate environmental concerns but also laying the groundwork for long-term economic resilience and green leadership.

Appendix 3

3. National Policy, Action Plans and Financing Support

3.1. The National Climate Change Policy (NCCP 2.0)

The National Policy on Climate Change (NPCC) was first introduced in Malaysia in 2009 as a response to the growing concerns about the impacts of climate change on the country's economy, society and environment. It outlined Malaysia's overall strategy for addressing climate change and provided a framework for coordinated action across all sectors of the economy. The NPCC was guided by the principle of sustainable development and sought to balance the needs of economic growth, social development and environmental protection. The policy has effectively guided the country and established the initial framework for the nation's climate objectives, serving as a fundamental document for addressing climate change.

In 2024, the NPCC was updated to the National Climate Change Policy 2.0 (NCCP 2.0) to align with Malaysia's latest targets and international commitments made over the last 15 years. Building upon the previous policy, the NCCP 2.0 is pivotal in steering Malaysia's climate action against the backdrop of evolving global and domestic landscapes. It sets out a direction and framework for Malaysia to transition to a low-carbon economy and enhance climate resilience.

Key objectives of NCCP 2.0:

1. **Meet Climate Targets:** Achieve net-zero GHG emissions by 2050 and meet current and future updated Nationally Determined Contributions (NDCs), as well as recent developments and other international obligations.
2. **Mainstream Climate Action:** Integrate climate action into decision-making processes to improve socio-economic well-being and strengthen the accountability of all stakeholders.
3. **Catalyse Climate Action Implementation:** Facilitate the implementation of climate action by integrating responses into national policies, plans, and programs.
4. **Undertake Risk-Based Planning:** Undertake risk-based planning to build climate resilience, harness opportunities, and reduce the negative impacts of climate change.

The NCCP 2.0 integrates the Paris Agreement requirements and addresses new developments like just transition and carbon trading. It aligns with sectoral policies such as the National Energy Transition Roadmap and the Water Sector Transformation Plan 2040. It serves as the authoritative source for the government to develop relevant regulatory instruments, including the National Climate Change Act and economic instruments such as carbon pricing and markets. Additionally, it forms the basis for coordinating and implementing climate-related policies and strategies in an integrated manner, including the NDC Action Plan and Roadmap, Long-Term Low Emissions Development Strategies and the National Adaptation Plan.

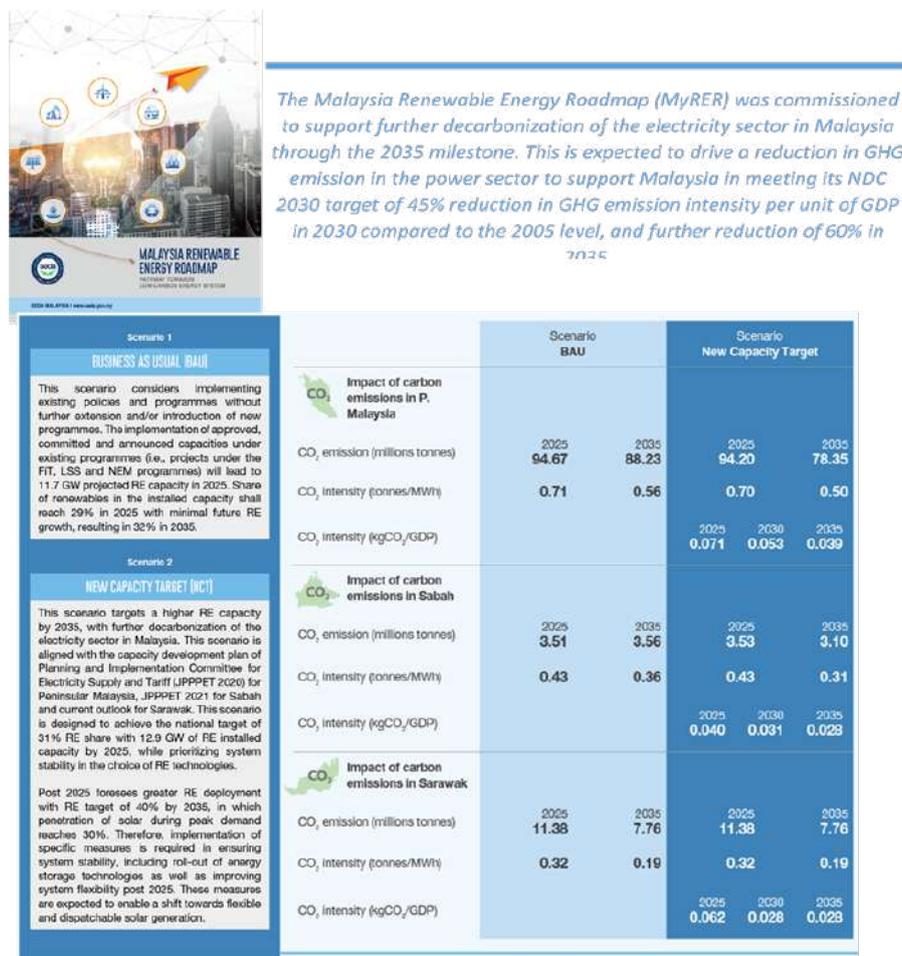
Through its five strategic thrusts, supported by 15 strategies, and 92 key actions, the NCCP 2.0 sets a clear direction for Malaysia to transition to a low-carbon economy and enhance climate resilience development.

3.2. Malaysia Renewable Energy Roadmap (MyRER)

In 2021, the government set a target to reach 31% renewable energy (RE) share in the national installed capacity mix by 2025. This target supports Malaysia's global climate commitment, and the realisation of the government's vision is crucial in supporting the nation in achieving the NDC targets. The scenarios and impacts are summarised in Diagram 13.

"The Malaysia Renewable Energy Roadmap (MyRER) was commissioned to support further decarbonisation of the electricity sector in Malaysia through the 2035 milestone. This is expected to drive a reduction in GHG emission in the power sector to support Malaysia in meeting its NDC 2030 target of 45% reduction in GHG emission intensity per unit of GDP in 2030 compared to the 2005 level, and further reduction of 60% in 2035."

Diagram 13: Summary of impacts on carbon emissions based on business-as-usual and new capacity target scenarios.



Source: MyRER 2020

Financial assistance has also been used to promote RE in addition to the aforementioned strategies. Since solar PV and wind energy technology costs have fallen significantly in recent years, financing support has shifted away from grants and tax breaks and towards

expanding access to credit and the capital market, such as through Green Bonds programmes.

3.3. National Low Carbon Cities Masterplan (NLCCM)

The NLCCM was developed to guide state governments and local authorities in Malaysia in implementing low-carbon development and initiatives. Under this Masterplan, a total of 33 cities have been selected as target cities and been divided into three (3) Groups. Group 1 cities are expected to achieve a 33% reduction in absolute GHG emissions by 2030 and be carbon neutral by 2050 and Group 2 cities are expected to achieve a 33% reduction in absolute GHG emissions by 2035 and be carbon neutral by 2055, while Group 3 cities are expected to achieve a 33% reduction in absolute GHG emissions by 2040 and be carbon neutral by 2060. Diagram 14 shows the selected target cities.

Diagram 14: 33 selected target cities under the NLCCM.

Group 1	Group 2	Group 3
1. Hang Tuah Jaya Municipal Council	1. Alor Setar City Council	1. Kota Bharu Municipal Council
2. Iskandar Malaysia	2. Ampang Jaya Municipal Council	2. Kota Kinabalu City Hall
3. Iskandar Puteri City Council	3. Ipoh City Council	3. Kuala Terengganu City Council
4. Johor Bahru City Council	4. Kajang Municipal Council	4. Kuantan City Council
5. Kuala Lumpur City Hall	5. Klang Municipal Council	5. Sandakan Municipal Council
6. Kulai Municipal Council	6. Kuching North City Hall	6. Sungai Petani Municipal Council
7. Melaka Historic City Council	7. Kuching South City Council	7. Tawau Municipal Council
8. Pasir Gudang City Council	8. Miri City Council	
9. Penang Island City Council	9. Selayang Municipal Council	
10. Petaling Jaya City Council	10. Seremban City Council	
11. Pontian District Council	11. Subang Jaya City Council	
12. Putrajaya Corporation		
13. Seberang Perai City Council		
14. Sepang Municipal Council		
15. Shah Alam City Council		

Source: National Low Carbon Cities Masterplan

3.4. Low Carbon Mobility Blueprint (LCMB) 2021-2030

The vision of the LCMB 2021-2030 is to drive emission reductions in the transportation sector, which currently ranks as the second-largest CO₂ emitter in the nation after the energy sector, contributing 25% to 30% of the nation's GHG emissions with predominantly internal combustion engines (ICE) vehicles on the road. The blueprint deploys a policy framework to mainstream the shift towards electrification in the transportation industry as a key strategy to diminish our emissions and contribute towards the achievement of Malaysia's NDC target.

There are four (4) main focus areas and ten (10) strategies in the LCMB, as shown in Diagram 15.

Diagram 15: Focus areas and strategies under the LCMB.



Source: Low Carbon Mobility Blueprint

3.5. Green Technology Financing Scheme 4.0 (GTFS)

The government introduced the GTFS in 2010 to promote green investments by providing easier access to financing and at a lower financing cost. Currently in its fourth cycle, this scheme has contributed to a total of RM7.76 billion in green investment and 4.99 MtCO₂eq of emission reductions in Malaysia. Details are covered in **Chapter 8**.

3.6. Green Tax Incentives

In tandem with the Malaysian government's agenda to drive the growth of Malaysia's green economy, the Green Technology Tax Incentive was introduced in 2014. The incentives aim to strengthen the development of green technology by providing investment tax allowances for the purchase of green technology equipment and income tax exemptions on the use of green technology services. Details are covered in **Chapter 8**.

3.7. Further Tax Deduction for Carbon Projects (FTC)

In Budget 2024, it was proposed that further tax deduction of up to RM300,000 be given to companies for costs incurred on the development and measurement, reporting and verification (MRV) related to the development of carbon projects. The applies to income from carbon credits traded on the BCX.

Details are covered in **Chapter 8**.

Appendix 4

The details of project types and examples of those registered under the CDM in Malaysia are illustrated in Diagram 16. Refer to [CDM: Project Activities \(unfccc.int\)](http://unfccc.int) for the list of registered projects under CDM.

Diagram 16: Type of applicable CDM projects and examples of projects in Malaysia.

Sectoral Scope	Types of Applicable Projects	Examples of CDM projects
Nature-Based		
Agriculture, Forestry and Other Land Use (AFOLU)	<ul style="list-style-type: none"> Covers GHG emissions and GHG emission reductions and/or carbon dioxide removals from projects or programme activities in the agriculture, forestry and other land use/land use change sectors 	No registered CDM projects as of the time of preparing this VCM Handbook
Livestock and Manure Management	<ul style="list-style-type: none"> Inhibition of methanogenesis through the introduction of a feed ingredient into ruminants' diets 	
Technology-Based		
Energy (Renewable/Non-renewable)	<p>Renewable/Non-renewable</p> <ul style="list-style-type: none"> Biomass power generation – on-grid and off-grid Biogas power generation from POME, animal waste, etc. Solar: Solar water heating, solar photovoltaic systems Hydro: Mini-hydro power New gas-fired co-generation plant that provides electricity to the grid and generates steam/hot water Displacement of electricity supplying the grid which would have been produced from more carbon-intensive sources <p>Energy Efficiency</p> <ul style="list-style-type: none"> Improving efficiency in electricity production Improving combined heat and electricity production Improved boilers, more efficient process heat and steam systems Fuel switching Energy efficiency through demand-side management 	<ul style="list-style-type: none"> 4999: Ranhill Powertron II 190 MW Gas-Fired CCPP Project 0385: Kina Biopower 11.5 MW EFB Power Plant 0386: Seguntor Bioenergy 11.5 MW EFB Power Plant 1783: Methane Capture from POME for Electricity Generation in Batu Pahat 2594: Bintulu Combined-Cycle Project STG Unit No.9, Tanjung Kidurong, Bintulu, Sarawak
Energy Distribution	<ul style="list-style-type: none"> Installation of energy-efficient transformers in a power distribution grid Installation of high voltage direct current power transmission line Introduction of low-resistance power transmission line 	No registered CDM projects as of the time of preparing this VCM Handbook

Energy Demand	<ul style="list-style-type: none"> Implementing energy efficiency measures that reduce the energy consumption of buildings Replacement of mobile homes Implementing individual energy efficiency measures in existing buildings Utilising on-wing jet engine washing as a means to improve jet engine propulsive efficiency Replacement of baseline water flow devices (e.g. showerheads, faucets) with low-flow hot water savings devices 	<ul style="list-style-type: none"> 1372: Factory Energy Efficiency Improvement in Compressed Air Demand and Supply in Malaysia (<i>yet to have credits issuance</i>)
Manufacturing Industries	<ul style="list-style-type: none"> Using waste CO₂ as a feedstock in the production of concrete 	<ul style="list-style-type: none"> 0247: Replacement of Fossil Fuel by Palm Kernel Shell Biomass in the Production of Portland Cement 1186: Biomass Thermal Energy Plant – Hartalega Sdn Bhd, Malaysia 4516: MNI Renewable Energy Plant
Chemical Industry	<ul style="list-style-type: none"> Use of Hydrogen Peroxide-based Propylene Oxide (HPPO) Technology 	No registered CDM projects as of the time of preparing this VCM Handbook
Construction	<ul style="list-style-type: none"> Substitution of a sulphur product for a proportion of Portland cement when producing precast concrete and other concrete-based products such as precast pipes, paving stones, slabs and tanks 	No registered CDM projects as of the time of preparing this VCM Handbook
Transport	<ul style="list-style-type: none"> Efficiency improvements for vehicles Switching to fuel systems with lower emissions Electric vehicle charging stations, including their associated infrastructure Use of pallets – the flat, portable structures that support goods during freight transport – lighter in weight than conventional alternatives Substitution of a sulphur product for a proportion of the bitumen binder used in conventional hot asphalt paving 	<ul style="list-style-type: none"> 7455: Nittsu Fuel Efficiency Improvement with Digital Tachograph Systems on Road Freight Transportation CDM Project in Malaysia
Mining/ Mineral Production	<ul style="list-style-type: none"> Pre-draining methane from an active open-cast mining operation Capturing and destroying methane from abandoned/decommissioned coal mines 	No registered CDM projects as of the time of preparing this VCM Handbook
Metal Production	<ul style="list-style-type: none"> Improving electrical energy efficiency of an existing submerged electric arc 	No registered CDM projects as of the time of

	<p>furnace used for the production of silicon and ferroalloys</p> <ul style="list-style-type: none"> • Upgrading the smelting technology, which results in the reduction of perfluorocarbon (PFC) emissions • Improving the electrical energy use efficiency in primary aluminium smelters • Replacement of sulphur hexafluoride (SF₆) with alternate cover gas in the magnesium industry • Waste heat utilisation for pre-heating of raw materials in sponge iron manufacturing process • Improving energy efficiency by modifying ferroalloy production facility • Use of charcoal from planted renewable biomass in a new iron ore reduction system • Introduction of hot supply of Direct Reduced Iron in Electric Arc Furnaces • Installation of an abatement system in existing semiconductor manufacturing facilities 	preparing this VCM Handbook
Fugitive Emissions – from fuels (solid, oil and gas)	<ul style="list-style-type: none"> • Capturing, using and destroying methane emitted from coal bed seeps 	No registered CDM projects as of the time of preparing this VCM Handbook
Fugitive Emissions – from industrial gases (halocarbons and sulphur hexafluoride)	<ul style="list-style-type: none"> • Recovering and destroying Ozone-Depleting Substances (ODS) from products where a partial or total atmospheric release of ODS occurs 	No registered CDM projects as of the time of preparing this VCM Handbook
Solvents Use		No registered CDM projects as of the time of preparing this VCM Handbook
Waste Handling and Disposal	<p>Waste Management</p> <ul style="list-style-type: none"> • Power and heat production from waste (waste-to-energy, WtE), biomass burning • Gas recovery from landfills • Anaerobic wastewater treatment • Conversion of waste biomass into biochar • Agrobiomass residue to power / biofuel • Methane avoidance 	<ul style="list-style-type: none"> • 0503: Johor Bundled Biomass Steam Plant in Malaysia • 0501: Bentong Biomass Energy Plant in Malaysia • 0867: Kim Loong Methane Recovery for Onsite Utilisation Project at Kota Tinggi, Johor, Malaysia • 0927: Landfill Gas Utilisation at Seelong Sanitary Landfill, Malaysia

		<ul style="list-style-type: none"> • 1108: Golden Hope Composting Project – Merotai • 0916: Methane Recovery and Utilisation Project at TSH Kunak Oil Palm Mill • 3686: Sungei Kahang POME Biogas Recovery for Energy Project in Johor, Malaysia • 4907: Abedon Enviro Bio-Waste Composting Project, Malaysia • 6673: Jeram Landfill Gas Recovery Project
Carbon Capture and Storage (CCS)		There is no sectoral scope for CCS.

Source: [Illustration based on CDM](#)

List of Acronyms

12 th MP	12 th Malaysia Plan
ACCF	ASEAN Common Carbon Framework
ACoGS	Avoided Conversion of Grasslands and Shrublands
AF	Assessment Framework
AFOLU	Agriculture, Forestry and Other Land Use
ALM	Agriculture Land Management
AMS	Approved Methodology for Small-scale CDM project activities
APD	Avoided Planned Deforestation
APWD	Avoided Planned Wetland Degradation
ARM	
ARR	Afforestation, Reforestation and Revegetation
ART TREES	Architecture for REDD+ Transactions, the REDD+ Environmental Excellency Standard
ASEAN	The Association of Southeast Asian Nations
AUDD	Avoiding Unplanned Deforestation and/or Degradation
AUWD	Avoiding Unplanned Wetland Degradation
AWMS	Animal Waste Management System
BAU	Business As Usual
BCR	BeZero Carbon Ratings
BCX	Bursa Carbon Exchange
BNM	Bank Negara Malaysia
BTR	Biennial Transparency Report
BUR	Biennial Update Report
BUR4	Fourth Biennial Update Report
CA	Corresponding Adjustment
CBDR-RC	Common but Differentiated Responsibilities and Respective Capabilities
CBM	Coal Bed Methane
CBU EV	Completely Built-Up Electric Vehicle
CCBS	Climate, Community & Biodiversity Standards
CCPs	Core Carbon Principles
CCQI	Carbon Credit Quality Initiatives
CCS	Carbon Capture and Storage
CDM	Clean Development Mechanism
CER	Cost-Effectiveness Ratio
CERs	Certified Emission Reductions
CFL	Compact Fluorescent Lamp
CH ₄	Methane
CHP	Combined Heat and Power
CKD EV	Completely Knocked Down Electric Vehicle
CLs	Clarification Requests
CO ₂	Carbon dioxide
CO _{2eq}	Carbon dioxide equivalent
COD	Chemical Oxygen Demand
COP21	2015 United Nations Climate Change Conference
COP26	2021 United Nations Climate Change Conference
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CPO	Crude Palm Oil
CSI	Centralised Sustainability Intelligence
CSP	Carbon Study Permit
CTC	Certified True Copy
CVD	Chemical Vapour Deposition

DETS	Domestic Emissions Trading Scheme
EFBs	Empty Fruit Bunches
EPU	Economic Planning Unit
ESCO	Energy Services Company
ESG	Environmental, Social and Governance
ETS	Emission Trading Systems
EU ETS	European Union Emission Trading System
EVs	Electric vehicles
FCC	Forest Conservation Certificate
FCL	Carbon Licence
FCO	Forest Carbon Offset
FFB	Fresh Fruit Bunches
FiAHs	Feed-in Approval Holders
FiT	Fit-in Tariff
FPIC	Free, Prior and Informed Consent
FRIM	Forest Research Institute Malaysia
FRL	Forest Reference Level
FTC	Further Tax Deduction for Carbon Projects
GCC	Global Carbon Council
GCS	Geologic Carbon Storage
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GITA	Green Investment Tax Allowance
GITE	Green Income Tax Exemption
GS/ GS4GG	Global Standard for the Global Goals
GTFS	Green Technology Financing Scheme
GWP	Global Warming Potential
HFC-23	Hydrofluorocarbon-23
HFO	Heavy Fuel Oil
HPPO	Hydrogen Peroxide-based Propylene Oxide
ICAO	International Civil Aviation Organization
ICE	Internal Combustion Engines
ICVCM	Integrity Council for the Voluntary Carbon Market
IFM	Improved Forest Management
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Processes and Product Use
ISCC	Integrated Solar Combined Cycle
ITA	Investment Tax Allowance
ITMOs	Internationally Transferred Mitigation Outcomes
JI	Joint Implementation
KML	Keyhole Markup Language
KYC	Know-Your-Customer
LCMB	Low Carbon Mobility Blueprint
LCTF	Low Carbon Transition Facility
LDC	Least Developed Countries
LED	Light-Emitting diode
LFG	Landfill Gas
LNG	Liquefied Natural Gas
LSS	Large-Scale Solar
LT-LEDS	Long Term Low Emission Development Strategy
LtHP	Low-Productive Forest to High-Productive Forest
LtPF	Logged to Protected Forest
LULUCF	Land Use, Land-Use Change and Forestry

MCMA	Malaysia Carbon Market Association
MFF	Malaysia Forest Fund
MGTC	Malaysian Green Technology and Climate Change Corporation
MITI	Ministry of Investment, Trade and Industry
MOL	Methane Oxidation Layer
MPOB	Malaysian Palm Oil Board
MRTS	Mass Rapid Transit System
MRV	Monitoring, Reporting and Verification
MSME	Micro, Small & Medium Enterprises
MSW	Municipal Solid Waste
MTPIN	National Climate Change Action Council
MW	Megawatt
MyEPI	Malaysia Environmental Performance Index
MyRER	Malaysia Renewable Energy Roadmap
N ₂ O	Nitrous Oxide
NbS	Nature-based Solutions
NCCP 2.0	National Climate Change Policy 2.0
NCS	Nature Climate Solutions
NCS REDD Plus	National Steering Committee on REDD Plus
NDC	Nationally Determined Contribution
NEM	New Economic Model
NERADO	Non-Edible Raw Agriculture-Derived Oils
NETR	National Energy Transition Roadmap
NF ₃	Nitrogen Trifluoride
NGOs	Non-Governmental Organisations
NLCCM	National Low Carbon Cities Masterplan
NIMP 2030	New Industrial Master Plan 2030
NPCC	National Policy on Climate Change
NRS	National REDD Plus Strategy
NRECC	Ministry of Natural Resources, Environment and Climate Change
NRES	Ministry of Natural Resources and Environmental Sustainability
NSCCC	National Steering Committee on Climate Change
NSC REDD Plus	National Steering Committee on REDD Plus
NTC REDD Plus	National Technical Committee on REDD Plus
ODS	Ozone-Depleting Substances
OIMPs	Other International Mitigation Purposes
OTC	Over-the-Counter
OMT	Off-Market Transaction
PACOS	Partners of Community Organisations in Sabah
PAI	Project Activity Instance
PD	Project Description
PDD	Project Design Document
PES	Planned Energy Scenario
PFCs	Perfluorocarbons
PoAs	Programmes of Activities
POME	Palm Oil Mill Effluent
PRF	Permanent Reserve Forest
PUF	Polyurethane Foam
PV	Solar Photovoltaic
PVC	Plan Vivo Certificates
RE	Renewable Energy
REC	Renewable Energy Certificate
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+/Plus	Reducing Emissions from Deforestation and Forest Degradation - Plus

REDD+MF	REDD+ Methodology Framework
REPPA	Renewable Energy Power Purchase Agreement
RFF	REDD Plus Finance Framework
RGGI	Regional Greenhouse Gas Initiative
RIL	Reduced Impact Logging
RPVI	Registered Photovoltaic Investor
RWE	Restoring Wetland Ecosystems
SCAC	Sabah Climate Change Action Council
SCADA	Supervisory Control and Data Acquisition
SD VSta	Sustainable Development Verified Impact Standard
SDG	United Nations Sustainable Development Goals
SEARRP	South-East Asia Rainforest Research Partnership
SEDA	Sustainable Energy Development Authority
Selco	Self-Consumption
SF ₆	Sulphur Hexafluoride
SGM	Sustainable Grassland Management
SMEs	Small and Medium Enterprises
SPDD	Sarawak Project Design Document
SPV 2030	Shared Prosperity Vision 2030
SUZ	Special Underdeveloped Zone
SWDS	Solid Waste Disposal Site
TAC	Technical Advisory Committee
TbS	Technology-based Solutions
tCO _{2e} ,tCO _{2eq}	Metric Tonnes of Carbon Dioxide Equivalent
TPD	Tonnes Per Day
TWGs	Technical Working Groups
UHI	Urban Heat Island
UMT	Universiti Malaysia Terengganu
UNFCCC	United Nations Framework Convention on Climate Change
UniSZA	Universiti Sultan Zainal Abidin
UPEN	The State Economic Planning Unit
VCM	Voluntary Carbon Market
VCMi	Voluntary Carbon Markets Integrity Initiative
VCS	Verified Carbon Standard
VCU	Voluntary Carbon Unit
VER	Verified Emission Reduction
VVB	Validation/Verification Body
WCI	Western Climate Initiative
WRC	Wetland Restoration and Conservation
WtE	Waste-to-Energy
WWF	World Wildlife Fund
WWTS	Wastewater Treatment System