Sector Classification Methodology
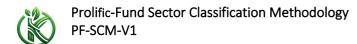
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1. Outline of the Prolific-Fund Sector Classification Methodology Book

This methodology book provides guidelines as to how Prolific-Fund Carbon assigns Sector Classification to projects issuing credits in the Voluntary Carbon Market (VCM).

Section 2 provides an introduction to the Prolific-Fund Sector Classification, including the classification structure.

Section 3 details the criteria for a carbon project to be eligible for a Prolific-Fund Sector Classification.

Section 4 lays out the data and underlying sources used in the Prolific-Fund Sector Classification.

Section 5 introduces the Sector Classification Committee, the internal body overseeing Prolific-Fund Sector Classification.

Section 6 provides guidelines that Prolific-Fund Carbon uses to classify eligible carbon projects.

Appendix A includes the detailed definitions underlying each of the Prolific-Fund Classifications. **Appendix B** lists the previous updates and reviews of the Sector Classification Structure.

Appendix C provides a non-exhaustive list of Standard Bodies and the corresponding registries, which serve as a key data source.

2. Introduction

The Voluntary Carbon Market (VCM) is attempting to scale but lacks the critical information infrastructure to allow capital to circulate freely. Sector classification is an essential element of financial markets and a critical tool in understanding, analysing and trading in this market.

Sector classifications in the VCM are inconsistent and confusing - there are over 90 defined sectors across the five major Standards Bodies. Inconsistencies across global Standards Bodies include the number and names of sectors covered, the downstream labelling of projects, sub-sectors, and the identification of removal or avoidance credits.

It is therefore difficult to compare projects on a like-for-like basis to ascertain what drives the project's primary avoidance or removal activity, to create accurate sectoral analysis, and to perform portfolio analysis.

The market needs a simplified sector syntax analogous to traditional financial markets, such as

MSCI's Global Industry Classification Standard.

Prolific-Fund Carbon has developed the Prolific-Fund Sector Classification System to provide the VCM with a standardised, global, accurate and reliable tool to use while participating in this market.

Overview of Prolific-Fund Sector Classification

The Prolific-Fund Carbon Sector Classification system is a hierarchical sector classification system for the VCM. It comprises three tiers: Sector Group, Sector and Sub-Sector.

The Prolific-Fund Sector Classification comprises 6 sector groups, 18 sectors and 47 sub-sectors. This is presented in the following table and detailed definitions are available in Appendix A. A list of the updates and reviews can be found in Appendix B.

Prolific-Fund Sector Classifications are available in descriptive and numeric form. The full numeric form comprises a 6-digit code.

VCM projects are classified based on a quantitative and qualitative assessment. Each project is assigned a single classification at the sub-sector level based on the primary activity undertaken by the project.

Sector Group Code	Sector Group	Sector Code	Sector	Sub-Sector Code	Sub-Sector
10	Energy	1010	Energy Efficiency	101010	*Energy Saving Measures*
				101020	*Fuel Switch*
		1020	Renewable Energy	102010	*Solar*
				102020	*Wind*
				102030	*Hydro*
				102040	*Geothermal*
				102050	*Biomass (Heat & Electricity)*
				102060	*Sustainable Fuels*
		1030	Non-Renewable Energy	103010	*Non-Renewable Energy*
		1040	Energy Infrastructure	104010	*Energy Infrastructure*

20	Household Devices	2010	Energy Efficient Devices	201010	Cookstoves
				201020	Domestic Biodigesters
				201030	Domestic Lighting
				201040	Residential Heating & Cooling
		2020	Water	202010	Water
30	Industrial Processes	3010	Industrial Emissions	301010	Carbon Capture & Storage
				301020	Carbon Capture & Utilization
				301030	Industrial Methane Emissions
				301040	Nitrous Oxide (N_2O)
				301050	Ozone-Depleting Substances & Other Refrigerants
				301060	Sulphur Emissions
		3020	Manufacturing Industries	302010	Industrial Process Efficiency
				302020	Alternative Materials
		3030	Transport	303010	Transport Fuel & Efficiency
				303020	Transport Infrastructure & Management
40	Nature-Based Solutions	4010	Blue Carbon	401010	Mangroves
				401020	Seagrass & Seaweeds
				401030	Other Wetlands
		4020	Forestry	402010	Afforestation, Reforestation, & Restoration
				402020	Avoided Deforestation
				402030	Improved Forest Management
		4030	Soil Carbon & Agriculture	403010	Grasslands
				403020	Peatlands
				403030	Soil-Related Agricultural Practices
				403040	Other Agricultural Practices

50	Engineered Carbon Removals	5010	Biomass-Based Carbon Removals	501010	Biochar
				501020	Bioenergy With Carbon Capture & Storage
				501030	Other Biomass-Based Carbon Removals
		5020	Enhanced Weathering	502010	Enhanced Weathering
		5030	Direct Air Capture	503010	Direct Air Capture With Carbon Storage
				503020	Direct Air Capture With Carbon Utilization
		5040	Ocean-Based Carbon Removals	504010	Ocean-Based Carbon Removals
60	Waste	6010	Waste Treatments	601010	Agricultural & Organic Waste
				601020	Landfill
				601030	Wastewater
		6020	Waste Reduction & Recycling	602010	Recycling
				602020	Other Waste Management

3. Project Eligibility

Prolific-Fund Sector Classification is assigned to projects and credit issuances. Projects must fulfil the following criteria to be eligible for a Prolific-Fund Sector Classification:

a. The project must be a carbon credit project that participates or intends to participate in a carbon market such as the VCM or a compliance market.

b. The project must publicly disclose sufficient information relating to the project's activities, including information on the methodology used to calculate greenhouse gas (GHG) savings and the issuance of carbon credits.

c. All information provided must come from a credible source and be validated and/or in final form, ensuring that it is reliable over the long term (e.g. the project could be audited by a recognised third-party auditor, the methodology used in the issuance of carbon credits could be developed or approved by a Standard Body listed in Appendix C, sufficient information on the design of the project must be available in the public domain)

4. Data & Data Sources

The following information is required for assigning a sector classification:

— Project Name and Project ID

— Project Description

— Methodology used for the emission reduction or removal calculations (and ex-post and ex-ante credit issuance volumes if available)

In the event that the aforementioned data is inconclusive to assign a sector classification, additional project documentation including but not limited to Project Design Documentation (PDD), Greenhouse Gas Plans, Project Validation Report, and Monitoring Reports is required.

This data is typically collected from carbon offset Standards Bodies, as listed in Appendix C, but can originate from other sources as well.

5. Prolific-Fund Sector Classification Committee

Prolific-Fund Sector Classification is overseen by a specialist committee constituted for this purpose. The committee is composed of Prolific-Fund's Senior Data Manager and Data Analysts.

The committee is responsible for assignments and changes to all sector classifications, including those which involve qualitative inputs. The committee is the final decision-making body.

The Sector Classification Committee also reviews the Prolific-Fund classification structure and may recommend changes in sector group, sector, and/or sub-sector to best reflect ongoing developments within the VCM.

6. Guidelines for Prolific-Fund Sector Classification

Prolific-Fund implements a three-step process in order to classify projects and monitor the classification:

1. Project Data Collection

2. Sector Classification by Primary Project Activity

3. Continuous Review

1. Project Data Collection

The process begins with a team of data analysts collecting publicly-available information about a project, as listed in the "Data & Data Sources" section to determine if a project meets the requirements listed in the "Project Eligibility" section.

2. Sector Classification by Primary Project Activity

For eligible projects, the Prolific-Fund Sector Classification uses a project's activities, or the way(s) in which a project removes or avoids GHG emissions, as the main factor in the classification within a Prolific-Fund

sub-sector, with the Sector Classification Committee making determinations in the case of any ambiguity. A project may have one or multiple project activities, leading to one of three outcomes:

2.1 One project activity maps to one Prolific-Fund sub-sector

For projects with only a single activity, the said activity maps directly to a singular Prolific-Fund sub-sector. This is then verified by a review of the project's credit issuances.

For example, a hypothetical project, Example Project A, involves developing and operating a hydropower plant that will deliver electricity to the China Southern Power Grid (CSPG). The credits for this project are issued because this renewable energy source displaces electricity delivered to the grid from fossil

fuel-fired power plants, leading to an avoidance of GHG emissions. As such, the project activity only maps to one Prolific-Fund sub-sector, 102030 Hydro, as shown in Table 1 below.

Level	Code	Name
Sector Group	10	Energy
Sector	1020	Renewable Energy
Sub-sector	102030	Hydro

Table 1. Prolific-Fund Sector Classification for Example Project A

2.2. Project is applicable to multiple Prolific-Fund sub-sectors and provides quantitative data on credit issuance

If a project has multiple activities, then, the primary project activity, defined as the one accounting for the largest volume of credit issuance during the project lifetime, determines its sector classification.

For example, a sample peatland restoration and conservation project, Example Project B, issues credits for three stated project activities: 1- Wetland Rewetting & Conservation, 2- Reduced Emissions from Deforestation and Forest Degradation, and 3- Afforestation, Reforestation, and Revegetation. However, the project's design document shows that the majority of the issued credits originate from the first project activity, Wetland Rewetting & Conservation. As such, Wetland Rewetting & Conservation is determined to be the primary project activity for the Prolific-Fund Sector Classification.

Project Activity	Percentage (%)
Sector Group	86.7%
Sector	13%
Sub-sector	0.3%
Total	100%

Table 2. *Estimated Lifetime Credit Issuance for Example Project B*

A review of project documentation shows that Example Project B focuses specifically on the "rewetting of drained peatland", which implies that the primary activity is "Peatlands." Therefore Example Project B is assigned 403020 Peatlands, as shown in the table below.

Level	Code	Name
Sector Group	40	Nature-Based Solutions
Sector	4030	Soil Carbon and Agriculture
Sub-sector	403020	Peatlands

Table 3. *Prolific-Fund Sector Classification for Example Project B*

2.3 Project activity matches with multiple Prolific-Fund sub-sectors and does not provide quantitative data on credit issuance

In the case that a project does not provide quantitative information regarding different project activities, the sector classification is assigned based on a combination of quantitative and qualitative analysis using all available information.

For example, Example Project C involves constructing gas extraction wells at a landfill site to collect methane. This captured methane is then used to generate electricity to be sold to the grid.

The publicly-available project documentation provides limited information about credit issuances. After a qualitative analysis of the available documentation, Prolific-Fund determined that the treatment of methane emissions from the landfill site rather than the generation of renewable energy was considered to be a better representation of the overall project. Subsequently, 'treatment of landfill natural gas' was determined to be the primary project activity for the Prolific-Fund Sector Classification, leading to the classification as "601020 Landfill" as shown in Table 4.

Level	Code	Name
Sector Group	60	Waste
Sector	6010	Waste Treatments
Sub-sector	601020	Landfill

Table 4. *Prolific-Fund Sector Classification for Example Project C*

7. Review Process

The Prolific-Fund Sector Classification undergoes continuous review. On the occasional instance that new information comes to light that may potentially require a change in the sector classification, the classification is reassessed. Such information could include:

— Newly published information about a project

— Updates in the Prolific-Fund sector classification structure

— Stakeholder feedback, either internal or external

Appendix A: Sector Classification Definitions

10 Energy

Projects that achieve emission reductions by increasing the carbon efficiency of energy systems

	Sector Definition		Sub-Sector Definition
1010 Energy Efficiency	Projects that increase the energy and/or carbon efficiency of energy systems by reducing energy demand from commercial and industrial end-users,	**101010 Energy Saving Measures**	Projects that increase the efficiency of energy systems, by reducing energy demand from commercial and industrial end-users or improving generation output

		101020 Fuel Switch	Projects that introduce less carbon-intensive, drop-in fuels into a pre-existing generator to output energy at a lower emission intensity
	improving generation output, or switching to a less emission-intensive fuel		
1020 Renewable Energy	Projects that generate energy from renewable energy sources, displacing the use of fossil fuels	102010 Solar	Projects that generate heat and/or electricity from solar energy
		102020 Wind	Projects that generate electricity or mechanical power from wind
		102030 Hydro	Projects that generate electricity or mechanical energy from moving water
		102040 Geothermal	Projects that generate heat and/or electricity from heat within the earth
		102050 Biomass (Heat & Electricity)	Projects that generate heat and/or electricity by the combustion of biomass in stationary applications
		102060 Sustainable Fuels	Projects that generate and/or use fuel created via sustainable methods and feedstocks including but not limited to biofuels and green hydrogen
1030 Non-Renewable Energy	Projects that generate heat and/or electricity from non-renewable energy sources such as natural gas and other fossil fuels	103010 Non-Renewable Energy	Projects that generate heat and/or electricity from non-renewable energy sources such as natural gas and other fossil fuels
1040 Energy Infrastructure	Projects that support the development and/or maintenance of energy	104010 Energy	Projects that support the development and/or maintenance of energy

		Infrastructure	related infrastructure, including but not limited to expansion of the power grid, energy storage, and district heating systems
	related infrastructure, including but not limited to expansion of the power grid, energy storage, and district heating systems		

20 Household Devices

Projects that develop and distribute efficient technologies which serve to lower the emissions associated with household equipment and activities

	Sector Definition		Sub-Sector Definition
2010 Energy Efficient Devices	Projects that develop and distribute energy-efficient technologies which serve to lower the emissions associated with household equipment	201010 Cookstoves	Projects that disseminate energy-efficient cookstoves at the household level
		201020 Domestic Biodigesters	Projects that develop biogas plants at the household level in order to transform waste into renewable biogas
		201030 Domestic Lighting	Projects that distribute energy-efficient lighting at the household level
		201040 Residential Heating & Cooling	Projects that promote energy-efficient heating and cooling at the household level
2020 Water	Projects that improve water access, efficient water usage, and/or sanitation	202010 Water	Projects that improve water access, efficient water usage, and/or sanitation

30 Industrial Processes

Projects that lower the emissions associated with large-scale industry

	Sector Definition		Sub-Sector Definition
3010 Industrial Emissions	Projects that reduce or capture the greenhouse gas emissions resulting from	301010 Carbon Capture &	Projects that capture carbon dioxide (CO_2) from a point emission source (e.g. fossil fuel energy production) and

		Storage	store it geologically
		301020 Carbon Capture & Utilisation	Projects that capture carbon dioxide (CO_2) from a point emission source (e.g. fossil fuel energy production) and use the CO_2 in the production of products (e.g. fuels, chemicals, concrete)
	industrial processes	301030 Industrial Methane Emissions	Projects that reduce emissions of methane (CH_4) from industrial processes
		301040 Nitrous Oxide (N_2O)	Projects that reduce emissions of nitrous oxide (N_2O) from industrial processes
		301050 Ozone-Depleting Substances & Other Refrigerants	Projects that reduce the emissions of ozone-depleting substances and other refrigerants including hydrofluorocarbons (HFC), chlorofluorocarbons (CFC), and perfluorocarbons (PFC)
		301060 Sulphur Emissions	Projects that reduce sulfur-containing emissions, primarily sulfur hexafluoride (SF_6)
3020 Manufacturing Industries	Projects that improve the efficiency of industrial processes or involve the use of more sustainable alternative materials	302010 Industrial Process Efficiency	Projects that improve the efficiency of an industrial process
		302020 Alternative Materials	Projects that involve the use of an alternative material either in the case of a feedstock or of a product

| 3030 Transport | Projects that reduce the emissions associated with transportation | 303010 Transport Fuel & Efficiency | Projects that reduce emissions from transportation either through the use of a less emission-intensive fuel or through promoting increased efficiency in the transportation system |
| | | 303020 Transport Infrastructure & Management | Projects that support the development and/or operation of transport-related infrastructure and networks |

40 Nature-Based Solutions

Projects that protect, restore and manage affected ecosystems

	Sector Definition		Sub-Sector Definition
4010 Blue Carbon	Projects that restore, improve, or maintain the resilience of marine and coastal ecosystems	401010 Mangroves	Projects that expand, restore, and maintain the resilience of mangroves ecosystems
		401020 Seagrass & Seaweeds	Projects that conserve and develop seagrass and seaweed habitats
		401030 Other Wetlands	Projects that expand, restore, or maintain the resilience of wetland ecosystems other than mangroves and peatlands
4020 Forestry	Projects that improve the efficiency of industrial processes or involve the use of more sustainable alternative materials	402010 Afforestation, Reforestation, & Restoration	Projects that involve planting trees or assisting natural ecosystem regeneration, thereby increasing carbon stocks in the project area
		402020 Avoided	Projects that preserve and maintain natural forests that

	Sector Definition		Sub-Sector Definition
		Deforestation	would otherwise be cleared or converted, thereby conserving carbon stocks
		402030 Improved Forest Management	Projects that implement more sustainable forestry practices in order to reduce emissions and increase forest carbon stocks
4030 Soil Carbon & Agriculture	Projects that improve soil quality in order to increase carbon sequestration and storage or projects that promote other forms of sustainable agricultural practices	403010 Grasslands	Projects that restore or conserve grassland ecosystems to increase and/or protect carbon stocks
		403020 Peatlands	Projects that involve peatland restoration and conservation in order to maintain and/or restore their role as an effective carbon sink
		403030 Soil-Related Agricultural Practices	Projects that promote sustainable agricultural practices related to soil carbon, including land management
		403040 Other Agricultural Practices	Projects that promote sustainable agricultural practices not related to soil carbon

50 Engineered Carbon Removals

Engineered technical solutions that enhance or facilitate the removal of greenhouse gases from the atmosphere

	Sector Definition		Sub-Sector Definition
5010 Biomass-based Carbon Removals	Projects that enhance or facilitate the removal of greenhouse gases from the atmosphere via the	501010 Biochar	Projects that produce biochar via pyrolysis, the partial combustion of sustainable biomass, with

	treatment of sustainable biomass		carbon dioxide (CO_2) subsequently stored in soil or non-soil applications
		501020 Bioenergy With Carbon Capture & Storage	Projects that produce bioenergy from combustion of sustainable biomass and geologically store the emitted carbon dioxide (CO_2)
		501030 Other Biomass-based Carbon Removals	Projects that remove biomass-based carbon dioxide (CO_2) by means aside from Biochar or Bioenergy with Carbon Capture and Storage, such as bio-oil and biomass burial
5020 Enhanced Weathering	Projects that accelerate the natural process of rock weathering, which stores atmospheric carbon dioxide (CO_2) in carbonate minerals	502010 Enhanced Weathering	Projects that accelerate the natural process of rock weathering, which stores atmospheric carbon dioxide (CO_2) in carbonate minerals
5030 Direct Air Capture	Projects that use specialized technology to remove carbon dioxide (CO_2) from the atmosphere and either geologically store it or use it as a feedstock	503010 Direct Air Capture With Carbon Storage	Projects that use technology to remove carbon dioxide (CO_2) from the atmosphere and store it geologically
		503020 Direct Air Capture With Carbon Utilization	Projects that use technology to remove carbon dioxide (CO_2) from the atmosphere and use it to create products containing carbon (e.g. fuels, chemicals, concrete)
5040 Ocean-Based Carbon Removals	Projects that use technological intervention to remove carbon dioxide (CO_2) from the oceans	504010 Ocean-Based Carbon Removals	Projects that use technological intervention to remove carbon dioxide (CO_2) from the oceans

60 Waste

Projects that reduce emissions associated with the waste sector

	Sector Definition		Sub-Sector Definition
6010 Waste Treatments	Projects that prevent and/or treat emissions from organic waste, landfills, and wastwater	601010 Agricultural & Organic Waste	Projects that prevent and/or treat emissions from agricultural and other organic waste
		601020 Landfill	Projects that prevent and/or treat emissions originating from landfills
		601030 Wastewater	Projects that prevent and/or treat emissions originating from wastewater treatment facilities or processes
6020 Waste Reduction & Recycling	Projects that reduce waste through reduction, recycling, and other forms of waste management	602010 Recycling	Projects that recycle oil or non-oil materials
		602010 Other Waste Management	Projects that reduce waste emissions by means aside from recycling and organic waste, landfill, and wastewater treatments

Appendix B: Updates and Reviews

Version	Date	Description
1.0	November 2022	Initial version adopted.
Decision Class: Sector Classification Document Type: Methodology Business Function: Analysis		