

Sector Classification Methodology



BeZero

Contents

Outline of the BeZero Sector Classification	3
Methodology book	3
1. Introduction	4
Overview of BeZero Sector Classification	4
BeZero Classification Structure	5
2. Project eligibility	7
3. Data and data sources	7
4. BeZero Sector Classification Committee	7
5. Guidelines for BeZero Sector Classification	8
Project data collection	9
Sector classification by primary project activity	9
One project activity maps to one BeZero sub-sector	9
Project is applicable to multiple BeZero sub-sectors and provides quantitative data on credit issuance	9
Project activity matches with multiple BeZero sub-sectors and does not provide quantitative data on credit issuance	10
Review process	11
Appendix A: Sector Classification Definitions (Version 2.1)	12
10 Energy	12
20 Household Devices	13
30 Industrial Processes	14
40 Nature-Based Solutions	15
50 Engineered Carbon Removals	16
60 Waste	17
Appendix B: updates and review	18
Appendix C: list of standards bodies and relevant registries (non-exhaustive)	19

Outline of the BeZero Sector Classification Methodology book

This methodology book provides guidelines as to how BeZero Carbon assigns Sector Classifications to projects issuing credits in the voluntary carbon market (VCM).

Section 1 provides an introduction to the BeZero Sector Classification, including the classification structure.

Section 2 details the criteria for a carbon project to be eligible for a BeZero Sector Classification.

Section 3 lays out the data and underlying sources used in the BeZero Sector Classification.

Section 4 introduces the Sector Classification Committee, the internal body overseeing BeZero Sector Classifications.

Section 5 provides guidelines that BeZero Carbon uses to classify eligible carbon projects.

Appendix A includes the detailed definitions underlying each of the BeZero Classifications.

Appendix B lists the previous updates and reviews of the Sector Classification Structure.

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

1. 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.

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

Overview of BeZero Sector Classification

The BeZero Carbon Sector Classification system is a hierarchical sector classification system for the VCM. It comprises three tiers: sector group, sector, and sub-sector.

The BeZero Sector Classification comprises six sector groups, 18 sectors, and 47 sub-sectors. These are 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.

BeZero 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.

BeZero Classification Structure

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
				102070	Other Sources of Renewable Energy
		1030	Non-Renewable Energy	103010	Non-Renewable Energy Generation
				103020	Non-Renewable Energy Decommissioning
				103030	Non-Renewable Energy Avoided Extraction
		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 & Utilisation
				301030	Industrial Methane Emissions
				301040	Nitrous Oxide (N ₂ O)
				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	Biogenic Carbon Capture and Storage
				501030	Other Biomass-Based Carbon Removals
		5020	Geochemical Carbon Removal	502010	Enhanced Rock Weathering
				502020	Ocean Alkalinity Enhancement
		5030	Direct Air Capture	503010	Direct Air Capture With Carbon Storage
				503020	Direct Air Capture With Carbon Utilisation
		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

2. Project eligibility

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

- 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.
- 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.
- 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 standards body listed in Appendix C, sufficient information on the design of the project must be available in the public domain).

3. Data and 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, 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.

4. BeZero Sector Classification Committee

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

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

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

5. Guidelines for BeZero Sector Classification

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

- Project data collection
- Sector classification by primary project activity
- Continuous review

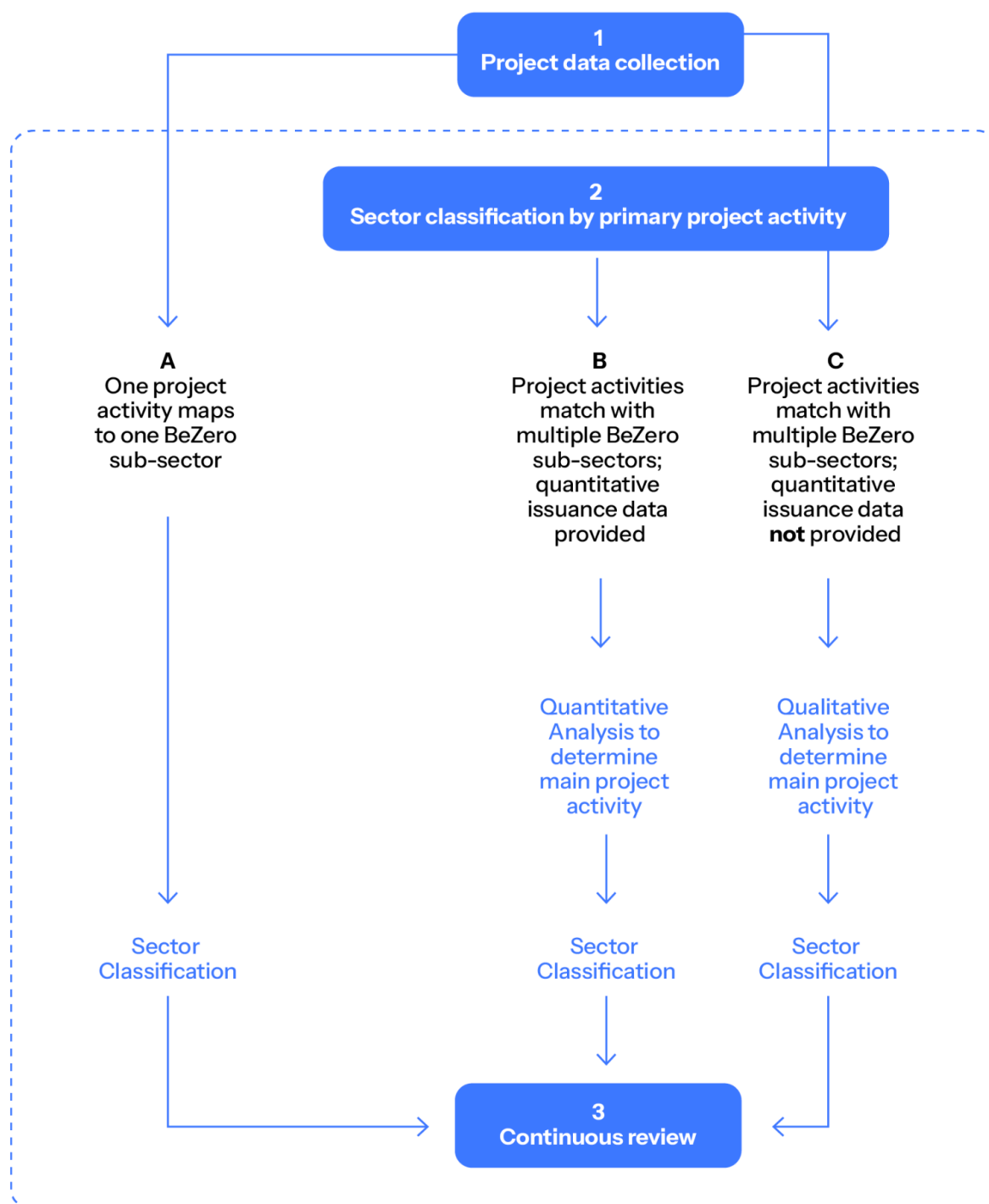


Figure 1. BeZero’s three-step classification process

Project data collection

The process begins with a team of data analysts collecting publicly available information about a project, as listed in the ‘data and data sources’ section, to determine if a project meets the requirements listed in the ‘project eligibility’ section.

Sector classification by primary project activity

For eligible projects, the BeZero 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 BeZero 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:

One project activity maps to one BeZero sub-sector

For projects with a single activity, said activity maps directly to a single BeZero 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. 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 BeZero sub-sector, 102030 Hydro, as shown in Table 1 below.

Table 1. BeZero Sector Classification for Example Project A

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

Project is applicable to multiple BeZero sub-sectors and provides quantitative data on credit issuance

If a project has multiple activities, the primary project activity, defined as the one accounting for the largest volume of credit issuance during the project’s 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
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 BeZero Sector Classification.

Table 2. Estimated lifetime credit issuance for Example Project B

Project activity	Percentage (%)
Wetland Rewetting & Conservation	86.7%
Reduced Emissions from Deforestation and Forest Degradation	13.0%
Afforestation, Reforestation, and Revegetation	0.3%
Total	100%

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

Table 3. BeZero Sector Classification for Example Project B

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

Project activity matches with multiple BeZero 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 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, BeZero determined that the treatment of methane emissions from the landfill site rather than the generation of renewable energy was a better representation of the overall project. Subsequently, ‘treatment of landfill natural gas’ was determined to be the primary project activity for the BeZero Sector Classification, leading to the classification as ‘601020 Landfill’ as shown in Table 4.

Table 4. BeZero Sector Classification for Example Project C

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

Review process

The BeZero 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 BeZero sector classification structure
- Stakeholder feedback, either internal or external

Appendix A: Sector Classification Definitions (Version 2.1)

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, improving generation output, or switching to a less emission-intensive fuel	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
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, not including ocean-based systems
		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 reduce greenhouse gas emissions either through the use or avoided use of non-renewable energy	102070 Other Sources of Renewable Energy	Projects that generate electricity or mechanical energy from renewable sources other than solar, wind, hydro, geothermal, biomass, or sustainable fuels
		103010 Non-Renewable Energy Generation	Projects that generate heat and/or electricity from non-renewable energy sources such as natural gas and other fossil fuels
		103020 Non-Renewable Energy Decommissioning	Projects that avoid emissions by decommissioning fossil fuel infrastructure, such as power stations, fossil fuel wells, or fossil fuel mines, before the end of their useful lives

		103030 Non-Renewable Energy Avoided Extraction	Projects that avoid the emissions that would have arisen from the planned extraction of new fossil fuel reserves
1040 Energy Infrastructure	Projects that support the development and/or maintenance of energy related infrastructure, including but not limited to expansion of the power grid, energy storage, and district heating systems	104010 Energy Infrastructure	Projects that support the development and/or maintenance of energy 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 industrial processes	301010 Carbon Capture & Storage	Projects that capture carbon dioxide (CO ₂) from a point emission source (e.g. fossil fuel energy production) and 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), and projects that capture CO ₂ directly from the atmosphere and store it short-lived products (e.g. fuel, food & drink)
		301030 Industrial Methane Emissions	Projects that reduce emissions of methane (CH ₄) from industrial processes
		301040 Nitrous Oxide (N ₂ O)	Projects that reduce emissions of nitrous oxide (N ₂ O) 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 involve forest conservation or expansion, increasing sequestration potential and associated carbon stocks	402010 Afforestation, Reforestation & Restoration	Projects that involve planting trees or assisting natural ecosystem regeneration, thereby increasing carbon stocks in the project area
		402020 Avoided Deforestation	Projects that preserve and maintain natural forests that 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, agricultural waste, or domestic biodigesters

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 treatment of sustainable biomass	501010 Biochar	Projects that produce biochar via pyrolysis, the partial combustion of sustainable biomass, with carbon dioxide (CO ₂) subsequently stored in soil or non-soil applications
		501020 Biogenic Carbon Capture and Storage	Projects that capture and store carbon dioxide (CO ₂) of biogenic origin. Possible storage includes mineralisation and geologic injection.
		501030 Other Biomass-Based Carbon Removals	Projects that remove carbon derived from or in the form of biomass by means aside from Biochar or Biogenic Carbon Capture and storage.
5020 Geochemical Carbon Removal	Projects that use geochemical processes in an open system typically using alkaline substances. Typically bicarbonate and carbonate ions are the final storage of CO ₂ .	502010 Enhanced Rock Weathering	Projects that accelerate the natural process of rock weathering, which stores atmospheric carbon dioxide (CO ₂) in carbonate minerals
		502020 Ocean Alkalinity Enhancement	Projects that accelerate the natural uptake of atmospheric carbon dioxide (CO ₂) in the ocean by adding alkaline substances or increasing alkalinity through electrochemical processes. CO ₂ is stored in the form of bicarbonate and carbonate.
5030 Direct Air Capture	Projects that use specialised 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 Utilisation	Projects that use technology to remove carbon dioxide (CO ₂) from the atmosphere and use it to create long lived products containing carbon (e.g. 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 wastewater	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
		602020 Other Waste Management	Projects that reduce waste emissions by means aside from recycling and organic waste, landfill, and wastewater treatments

Appendix B: updates and review

Version number	Date	Description
1.0	04/04/22 to 16/07/23	Initial Release and minor edits
2.0	17/07/23	2nd Release
2.1	05/03/25	3rd Release The addition of two new sub-sectors to the Non-Renewable Energy sector; addition of one new sub-sector to the Renewable Energy sector; the inclusion of Direct Air Capture With Carbon Utilisation in short-lived products within 301020 Carbon Capture & Utilisation; the renaming and redefinition of Geochemical Carbon Removal; the addition of a new sub-sector to the Geochemical Carbon Removal sector; along with minor edits.

Appendix C: list of standards bodies and relevant registries (non-exhaustive)

Standards body	Registry
Verra	VCS
Gold Standard	Impact Registry
Plan Vivo	Markit
Woodland Carbon Code	Markit
Climate Action Reserve	APX
American Carbon Registry	APX
Clean Development Mechanism (CDM)	UN-FCCC
Carbon Engineering	Carbon Engineering
City Forest Credits	City Forest Credits
CSA	CSA Group Registries
BC Emissions Offset Regulation	BC Carbon Registry
Puro.Earth	Puro Registry
Cercarbono	EcoRegistry
OxCarbon Principles	Markit
Global Carbon Council	Global Carbon Council
UK Peatland code	Markit
Social Carbon	Markit
COLCX	COLCX
Isometric	Isometric Registry
Riverse	Riverse
Natural Forest Standard	NFS Registry
TREES	ART

Standards bodies are organisations that certify and issue carbon credits as well as facilitate their trading. By determining the rules and requirements to be followed by all of the climate projects reported on their platforms, standards bodies ensure the comparability of verified emissions reductions across the carbon market.

The credits from certified projects are made available on the marketplace and are monitored by the corresponding registries, playing a key role in the traceability of credit transactions.

Disclaimer

The BeZero Carbon Rating of voluntary carbon credits represents BeZero Carbon's current opinion on the likelihood that carbon credits issued by a project achieve a tonne of CO₂ e avoided or removed. The BeZero Carbon Rating and other information made publicly available or available through the BeZero Carbon Markets platform ("Content") is made available for information purposes only. The Content and in particular the BeZero Carbon Rating sets out BeZero Carbon's opinion on a particular carbon credit or project based on publicly available information as at the date expressed and BeZero Carbon shall have no liability to anyone in respect of the Content, opinion and BeZero Carbon Rating. The Content is made available for information purposes only and you should not construe such Content as legal, tax, financial or investment advice. The Content is a statement of opinion as at the date expressed and does not constitute a solicitation, recommendation or endorsement by BeZero Carbon or any third party to invest, buy, hold or sell a carbon credit. The Content is not a statement of fact and should not be relied upon in isolation. The Content is one of many inputs used by stakeholders to understand the overall quality of any given carbon credit. BeZero Carbon shall have no liability to you for any decisions you make in respect of the Content. If you have any questions about BeZero Carbon, the BeZero Carbon Rating, the BeZero Carbon Rating methodology, qualifying criteria, rating process, any element of Content, the BeZero Carbon Markets platform or otherwise please contact us at: commercial@bezerocarbon.com.