



# **BeZero Carbon Ratings**

## Sector classification system

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#### What is it?

The BeZero Carbon Sector Classification system is a hierarchical sector classification system for the Voluntary Carbon Market (VCM) comprising three tiers: **sector group, sector and sub-sector**.

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. Credit issuance is the primary factor in assessing a project's major activity. Thematic consistency and market perceptions are also considered for classification purposes.

#### Background

Across the major global registries issuing carbon credits, there are inconsistencies in the labelling of sectors (also sometimes known as scopes) that projects lie in. These inconsistencies range from the number and names of sectors covered to downstream labelling of projects to their sub-sectors or identification as whether they are removal or reduction credits.

These meta-data labels play a key role in market analytics. BeZero has developed a three tier view to consolidate the makeup of the current market. Our data driven approach appropriately labels projects according to what a majority of their issuance activities contribute to.

In certain instances, various project activities have been condensed to single sub-sectors. For example, the sub-sector 'Other Transport' includes projects related to a range of activities including electric vehicles, fleet efficiency, and mass transit. Such examples occur when activity types contribute to a small fraction of the VCM's overall issuance.

#### The BeZero Carbon VCM Sector Classification System

This section contains the three tiers of our classification system.

Sector Group	Sector	Sub-Sector
1. Energy	1.1 Energy	1.1.1 Lighting 1.1.2 Renewables
2. Household Devices	2.1 Household Devices	2.1.1. Cookstoves 2.1.2 Domestic Fuel Efficiency - Biodigesters 2.1.3 Domestic Fuel Efficiency - Lighting 2.1.4 Water
3. Industrial Processes	3.1 Chemical Industries	3.1.1 Fugitive Emissions 3.1.2 N <sub>2</sub> O from adipic acid 3.1.3 N <sub>2</sub> O from nitric acid 3.1.4 Ozone depleting substances 3.1.5 Sulphur Emissions
	3.2 Manufacturing Industries	3.2.1 Cement & Concrete 3.2.2 Fuel Switch 3.2.3 Industrial Energy Efficiency 3.2.4 Metal production 3.2.5 Methane Capture 3.2.6 Waste Heat Recovery
	3.3 Transport	3.3.1 Other transport 3.3.2 Synthetic Fuels

4. Nature Based Solutions	4.1 Agriculture	4.1.1 Feed Additives 4.1.2 Irrigation
	4.2 Blue Carbon	4.2.1 Mangroves 4.2.2 Seagrass & Seaweeds 4.2.3 Wetland Restoration
	4.3 Forestry	4.3.1 Afforestation, Reforestation & Restoration 4.3.2 Avoided deforestation 4.3.3 Improved Forest Management 4.3.4 REDD+ (JNR)
	4.4 Soil Carbon	4.4.1 Grasslands 4.4.2 Peatlands 4.4.3 Regenerative Agriculture
5. Tech Solutions	5.1 Biochar	5.1.1 Biochar
	5.2 Building Materials	5.2.1 Brick Manufacturing 5.2.2 Wooden Building Materials
	5.3 Carbon Capture and Storage	5.3.1 Bioenergy Carbon Capture & Storage 5.3.2 Direct Air Capture 5.3.3 Enhanced Oil Recovery
	5.4 Enhanced Weathering	5.4.1 Enhanced Weathering
6. Waste	6.1 Waste Handling & Disposal	6.1.1 Agricultural Methane Recovery 6.1.2 Landfill Gas 6.1.3 Non-Oil Recycling 6.1.4 Oil Recycling

The BeZero sector hierarchy includes a number of distinct groupings not found in other market classification systems to reflect projects with distinctive features such as common ecosystems or technologies. Some notable examples include the following:

- **Peatlands** is a stand-alone subsector within Soil Carbon and Nature Based Solutions. Typically, many of the large peatlands projects follow REDD+ methodologies and are classified as such by many organisations. However, we believe that the unique ecological characteristics of peatlands - notably large below ground carbon pools - warrant a separate classification.
- The **Grasslands** sub-sector includes project activities leading to increased carbon stocks in grasslands including both wild and in farmed landscapes. Rotational grazing and other regenerative livestock farming practices are common features particularly for the latter.
- **Regenerative Agriculture** therefore tends to include arable farming related activities aimed at soil organic carbon (SOC) sequestration. These include reductions in tillage and fertiliser application among other potential activities.
- **Blue Carbon** is a separate sector reflecting the growing interest in blue carbon as a Nature Based Solution and the emerging pipeline of VCM projects. We have 3 sub-sectors within Blue Carbon, one each for Mangroves, Seagrass & Seaweeds, and Wetland Restoration. Note that **Mangroves** projects could involve either REDD+ or ARR activities, or both.
- The **Tech Solutions** sector group is geared to the emerging carbon removal sector linked to new and innovative technologies. These include technologies used purely for carbon removals such as **Direct Air Capture**, in the **Building Materials** sector, or downstream in agriculture such as **Biochar**.

## BeZero Sector Classification Definitions

This section contains definitions for each sector group, sector and sub-sector, broken down by sector group.

### 1. Energy

Projects that generate emission reductions by increasing the efficiency of energy generation systems.

Sector	Definition	Sub-Sector	Definition
1.1 Energy	Projects that generate emission reductions by increasing the efficiency of energy generation systems.	1.1.1 Lighting	Projects that decrease energy consumption and associated emissions by improving the energy efficiency of lighting equipment.
		1.1.2 Renewables	Projects that generate electricity from renewable energy sources, such as wind, solar and hydropower.

### 2. Household Devices

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

Sector	Definition	Sub-Sector	Definition
2.1 Household Devices	Projects that develop and distribute energy efficient technologies which serve to lower the emissions associated with household equipment.	2.1.1 Cookstoves	Projects that disseminate energy efficient cookstoves.
		2.1.2 Domestic Fuel Efficiency - Biodigesters	Projects that develop biogas plants in order to transform waste into renewable biogas.

### 3. Industrial Processes

Processes that lower the emissions associated with large-scale industry.

Sector	Definition	Sub-Sector	Definition
3.1 Chemical Industries	Projects that reduce emissions in industries related to the formation and processing of chemicals.	3.1.1 Cookstoves	Projects that install equipment or processes to prevent gas leakages.
		3.1.2 N <sub>2</sub> O from adipic acid	Projects that install equipment or processes to reduce N <sub>2</sub> O emissions associated with adipic acid production.
		3.1.3 N <sub>2</sub> O from nitric acid	Projects that install equipment or processes to reduce N <sub>2</sub> O emissions associated with nitric acid production.
3.2 Manufacturing Industries	Processes that lower the emissions associated with large-scale manufacturing.	3.1.4 Ozone depleting substances	Projects that provide methods for quantifying and reporting on emissions reductions associated with the destruction of ozone-depleting substances.
		3.1.5 Sulphur Emission	Projects that involve capturing and preventing the release of sulphur emissions.
		3.2.1 Cement & Concrete	Projects that create and use low-carbon cement.
		3.2.2 Fuel Switch	Projects that use alternative fuels for energy generation in industrial settings.
		3.2.3 Industrial Energy Efficiency	Projects that install equipment or processes which optimise energy use in manufacturing.
		3.2.4 Metal production	Projects that use sustainable methods to produce metals.
3.3 Transport	Projects that reduce the emissions associated with transportation.	3.2.5 Methane Capture	Projects that prevent the release of methane.
		3.2.6 Waste Heat Recovery	Projects that capture and use heat energy.
		3.3.1 Other Transport	Projects that reduce transportation emissions by means aside from employing synthetic fuels.
		3.3.2 Synthetic Fuels	Projects that develop carbon-neutral fuels from captured carbon dioxide.

#### 4. Nature Based Solutions

Projects that protect, restore and manage affected ecosystems.

Sector	Definition	Sub-Sector	Definition
4.1 Agriculture	Projects that implement sustainable agricultural practices.	4.1.1 Feed Additives	Projects that reduce enteric emissions by creating animal feed or supplements.
		4.1.2 Irrigation	Projects that engineer structures which collect and deliver water to disturbed soils.
4.2 Blue Carbon	Projects that restore or conserve marine and coastal ecosystems.	4.2.1 Mangroves	Projects that regenerate and improve the resilience of mangrove ecosystems.
		4.2.2 Seagrass & Seaweeds	Projects that conserve and develop seagrass and seaweed habitats.
		4.2.3 Wetland Restoration	Projects that restore degraded wetlands.
4.3 Forestry	Projects that involve forest conservation or expansion, increasing sequestration potential and associated carbon stocks.	4.3.1 Afforestation, Reforestation & Restoration	Projects that involve planting trees or rejuvenating forests ecosystems to increase the sequestration of greenhouse gases.
		4.3.2 Avoided deforestation	Projects that preserve and maintain natural forests that would otherwise be cleared or converted, thereby conserving carbon stocks.
		4.3.3 Improved Forest Management	Projects that implement more sustainable forestry practices in order to reduce emissions and increase forest carbon stocks.
		4.3.4 REDD+ (JNR)	Projects that implement jurisdictional and/or nested approaches to avoid deforestation.
4.4 Soil Carbon	Projects that improve soil quality in order to increase carbon sequestration and storage.	4.4.1 Grasslands	Projects that restore and rejuvenate grassland ecosystems to increase the sequestration of greenhouse gases.
		4.4.2 Peatlands	Projects that involve peatland restoration and conservation in order to maintain their role as an effective carbon sink.
		4.4.3 Regenerative Agriculture	Projects that implement more sustainable agricultural practices in order to reduce emissions and increase carbon stocks.

## 5. Tech Solutions

Projects that involve implementing processes and technologies to improve carbon capacity and generate environmental benefits.

Sector	Definition	Sub-Sector	Definition
5.1 Biochar	Projects that produce biochar - a product of biomass combustion that can act as a substitute fertiliser and increase soil carbon capacity.	5.1.1 Biochar	Projects that produce biochar - a product of biomass combustion that can act as a substitute fertiliser and increase soil carbon capacity.
5.2 Building Materials	Projects focused on innovative building materials that may act as a carbon store or have lower associated emissions than their alternatives.	5.2.1 Brick Manufacturing	Projects that improve brick manufacturing by reducing associated emissions and energy requirements.
		5.2.2 Wooden Building Materials	Projects using wood as a primary building material, as it is a natural carbon store and reduces demand for energy and carbon-intensive materials like steel and concrete.
5.3 Carbon Capture & Storage	Projects that capture and remove carbon dioxide to be securely stored or used in downstream applications.	5.3.1 Bioenergy Carbon Capture & Storage	Projects that extract and utilise bioenergy from biomass by capturing carbon dioxide and converting it into useful energy.
		5.3.2 Direct Air Capture	Projects that install technology to capture carbon dioxide directly from the air for sequestration or downstream utilisation.
		5.3.4 Enhanced Oil Recovery	Projects that inject and store carbon underground in order to extract remaining oil from previously tapped wells.
5.4 Enhanced Weathering	Projects designed to accelerate the natural process of rock weathering to increase ocean carbon stocks. This involves grinding rocks down and distributing them across the oceans or land.	5.4.1 Enhanced Weathering	Projects designed to accelerate the natural process of rock weathering to increase ocean carbon stocks. This involves grinding rocks down and distributing them across the oceans or land.

## 6. Waste

Projects that reduce emissions associated with the waste sector.

Sector	Definition	Sub-Sector	Definition
6.1 Waste handling and disposal	Projects that may reduce, capture or utilise greenhouse gas emissions from the waste sector.	6.1.1 Agricultural Methane Recovery	Projects that capture and utilise methane emissions associated with agriculture.
		6.1.2 Landfill Gas	Projects that capture the greenhouse gases created as byproducts of organic matter decomposition.
		6.1.3 Non-Oil Recycling	Projects that recycle non-oil materials.
		6.1.4 Oil Recycling	Projects that clean and reprocess oil.

## Disclaimer

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