

### **Definition of “emissions avoidance”, “emissions reduction”, and “emissions removal”**

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*This advice is provided in response to Q09-23*

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#### **Query:**

*What do the terms “emissions avoidance”, “emissions reduction”, and “emissions removal” mean in the context of the UNFCCC and Paris Agreement?*

#### **Executive Summary:**

These terms are not uniformly defined in the UNFCCC or the Paris Agreement, and there is no single source of truth as to their meaning in the context of these instruments. This is partly because the terms reflect the evolution of the measures to achieve the goals of the UNFCCC and the Paris Agreement such that the distinction between them has become more important over time; and partly due to the nature of the negotiations to agree such instruments. The terms are all also used more generically in reports issued by the IPCC and better defined in certain technical documents issued in the context of the UNFCCC and Paris Agreement, which also contributes to certain inconsistencies.

The term “emissions reduction” tends to be used in the context of the UNFCCC and Paris Agreement as an umbrella term which encompasses both “emission removals” and “emission avoidance” (each then separately defined for the purpose of categorising mitigation activities under more technical documents). “Emission removal” is generally used in the context of the UNFCCC and Paris Agreement to refer to the physical removal of emissions from the atmosphere and can include such removal by way of nature-based projects, or by technological means. “Emission

avoidance” tends to refer to the prevention of GHG emissions which would otherwise be generated by GHG emitting activities.

We also recognise the growing trend of differentiating these terms, especially between the definitions of “emission reduction” and “emission removal”, particularly under the Paris Agreement.

Based on the materials reviewed and noting the associated limitations set out below, we consider that, on balance, these are distinct terms, although not uniformly defined, and distinguishable across texts in a manner that should be regarded as intentional.

**Advice:**

**1 Scope of research**

In the course of preparing this advice, we have reviewed the United Nations Framework Convention on Climate Change (“UNFCCC”), the Paris Agreement, relevant decisions of the Conference of Parties serving as the meeting of the Parties to the Paris Agreement from COP26/CMA3 and COP27/CMA4, the Intergovernmental Panel on Climate Change (“IPCC”) website (and latest reports), and the GHG Protocol website.<sup>1</sup> In the time available we have not completed a comprehensive review of the technical documents published by the UNFCCC and the IPCC including in respect of calculation methodologies and metrics, which may refer to the relevant terms.

**2 Assumptions**

We have assumed that the query is limited to the use of and definition of the relevant terms within the context of the UNFCCC and the Paris Agreement, particularly Article 6. We’ve referred to the use of the terms within the Kyoto Protocol as a reference point but have not looked at the use of the terms within the voluntary carbon market more generally.

**3 Background**

**3.1** The terms “emission reduction”, “emission removal” and “emission avoidance” are not uniformly defined in the UNFCCC or the Paris Agreement. It is worth noting that, due to the passage of time and advancement of scientific studies as well as political consensus, the use and interpretation of these terms varies between decisions and documents under the UNFCCC, including the Kyoto Protocol (also within the UNFCCC framework). Additionally, the use of these terms also differs depending on the type of document, i.e., used more generically in policy documents and more specifically in technical documents within the UNFCCC framework.

**3.2** Under the Paris Agreement, these terms are mainly used with reference to Article 6. Article 6 provides for, amongst other things, international co-operation in relation to greenhouse gas emissions trading in the context of assisting nations with the implementation of their nationally determined contributions (“NDCs”)

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<sup>1</sup> UNFCCC; Paris Agreement; COP26; COP27; IPCC; GHG Protocol

and sets out rules relating to the transfer of greenhouse gas emissions reductions between countries through the use of international carbon markets, allowing for such reductions to be counted towards NDCs.

## 4 Emission Reduction

4.1 The term “emission reduction” is not formally defined in the UNFCCC or the Paris Agreement. Unsurprisingly, this term is widely used in various documents and decisions as a generic reference to all types of GHG reduction, including removal and avoidance activities.

4.2 It should also be noted that the term “emissions reductions” is used in two separate mechanisms within the UNFCCC:

4.2.1 under the Kyoto Protocol’s Clean Development Mechanism, a “certified emission reduction” is equivalent to “*one tonne of carbon dioxide avoided or removed from the atmosphere*”<sup>2</sup>. In this context, the term clearly encompasses both “emission removals” and “emissions avoidance”; and

4.2.2 under Article 6 of the Paris Agreement, GHG emission reductions would constitute “mitigation outcomes”. Article 6.4 states that activities shall be designed to “*achieve mitigation of GHG emissions that is additional, including reducing emissions, [and] increasing removals*”<sup>3</sup> to be able to be registered thereunder. This decision therefore alludes to a distinction between “emissions reduction” and “emissions removal” (further elaborated in paragraph 5 below), but without defining either. Nonetheless, we note that the two terms “emission removals” and “emission reductions” are used interchangeably in several sections within the CMA3 and CMA4 decisions. The Paris Agreement thus diverges from the approach taken under the CDM with respect to (no) reference to ‘avoided’ emissions.

## 5 Emission Removal

5.1 The term “emission removals” is not formally defined in the UNFCCC or the Paris Agreement. However, our view is that the use of the term can be understood to be referring to the physical removal of emissions from the atmosphere and can include such removal by way of nature-based projects, or by technological means.

5.2 Emission removal under the Kyoto Protocol’s Clean Development Mechanism, also known as “GHG removal by sinks”, specifically refers to the removal of GHG from the atmosphere (via photosynthesis of plants) and subsequent storage in form of biomass. It is worth noting that the limitation of emission removal to nature-based projects under the Kyoto Protocol is reflective of the time period in which it was agreed, as the removal of emissions through technological means (e.g., carbon capture and underground storage) was still in its infancy and not yet viable. The concept of removal by sinks is also used in the Paris Agreement,

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<sup>2</sup> UN Carbon offset platform

<sup>3</sup> COP 26; Decision 3/CMA.3 ; Paragraph 31

where it reiterates the necessity for countries to “achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases”<sup>4</sup>.

**5.3** In contrast to the Kyoto Protocol, the concept of “removals” is broader in the Paris Agreement, which expressly incorporates both nature-based and technological removals. The Supervisory Body of the Article 6.4 Mechanism has agreed on certain recommendations on activities involving removals under the mechanism. “Removals” shall be defined as “processes or outcome of processes to remove greenhouse gases from the atmosphere through anthropogenic activities and durably store in geological, terrestrial, or ocean reservoirs, or in products”<sup>5</sup>. The recommendations of the Supervisory Body do additionally indicate that Article 6.4 distinguishes between “emission removals” and “emission reductions” in the way outlined above<sup>6</sup>.

## **6 Emission Avoidance**

**6.1** Under the UNFCCC, the term and concept of “emission avoidance” is used in the Kyoto Protocol and the REDD+ Framework. However, it is not formally defined – or used - within the context of the Paris Agreement.

**6.2** Under the Kyoto Protocol’s Clean Development Mechanism, “GHG emission avoidance” includes activities “where the release of GHG emissions to the atmosphere is reduced or avoided”<sup>7</sup>, e.g., reduction of fertilizer use or avoidance of anaerobic decay of biomass.

**6.3** REDD+ is a global framework created by the UNFCCC to guide activities in the forest sector which reduces emissions from deforestation and forest degradation, as well as the sustainable management of forests and the conservation and enhancement of forest carbon stocks in developing countries. The framework provides comprehensive methodological and financing guidance for the implementation of REDD+ activities, which can include emission avoidance projects.

**6.4** The lack of a formal definition of the term under the Paris Agreement can be attributed to the fact that the Article 6 carbon credit trading mechanism only applies to credits issued in respect of emissions “reductions and removals”. While there was a push at both COP26<sup>8</sup> and COP27<sup>9</sup> for negotiators to consider whether “emission avoidance” activities could be included under Article 6, further deliberation is still expected ahead of COP28.

**6.5** However, in relation to Articles 6.2 and 6.4 of the Paris Agreement, reference can be made to a proposed definition of “emissions avoidance” that was put forward by the Philippines during the COP26 negotiations. The proposed definition defines “emissions avoidance” as the full displacement or prevention of GHG emissions expected to be generated by planned GHG emitting actions in energy, transport, manufacturing,

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<sup>4</sup> Paris Agreement; Article 4.1, Article 13.7

<sup>5</sup> A6.4-SB003-A03; Paragraph 4

<sup>6</sup> Ibid; Paragraph 17.

<sup>7</sup> Clean Development Mechanism Methodology Booklet

<sup>8</sup> COP 26; Decision 3/CMA.3 ; Paragraph 7(h)

<sup>9</sup> COP 27; Decision 7/CMA.4; Paragraph 9(a)

agriculture, human induced deforestation, and other GHG emitting development activities.<sup>10</sup> The intentions behind this proposed definition are to (1) recognise that prevention should be the main option rather than mere emissions reduction; and (2) incorporate emissions avoidance as an element of the risk management framework for crisis management.

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<sup>10</sup> A.6.4 and A.6.2 Issues on Emissions Avoidance (unfccc.int)