

AN UPDATE ON THE EU CARBON REMOVAL CERTIFICATION REGIME AND ON VOLUNTARY CARBON MARKETS

The removal of carbon (also referred to as CDR) from the atmosphere has gained prominence as it becomes increasingly clear that the world is unlikely to meet the 2.0°C/1.5°C Paris Agreement goals.¹ I address below various recent developments related to carbon removal, namely:

- the publication on November 30 by the European Commission of a draft Regulation to establish a voluntary framework for the certification of high-quality carbon removal;
- the publication, yesterday, by the Integrity Council for the Voluntary Carbon Market of the results of its public consultation on its draft Core Carbon Principles (“CCPs”), Assessment Framework (“AF”) and Assessment Procedures (“APs”); and
- the announcement during COP27 by Special Presidential Envoy John Kerry, the Bezos Earth Fund and The Rockefeller Foundation of an Energy Transition Accelerator.

The Proposed EU Framework

At the end of November, in furtherance of the [European Green Deal](#), the European Commission proposed the first EU-wide voluntary framework to reliably certify high-quality carbon removals (the “Framework”). The [proposal](#) for a Regulation “establishing a European framework for carbon removal certification” is designed to improve the European Union’s ability to quantify, monitor and certify carbon removal, which among other things, will reduce greenwashing. The proposed Regulation would set out quality criteria for carbon removal in the European Union, rules for independent, third-party verification and certification of carbon removal, and rules to recognize certification regimes to demonstrate compliance with the EU Framework.

QU.A.L.I.TY Criteria

To ensure the quality and comparability of carbon removals, the proposed Regulation establishes four so-called QU.A.L.I.TY criteria:

- **Quantification:** Carbon removal activities need to be measured accurately and deliver unambiguous benefits for the climate. The additional carbon removals generated by an activity (in comparison to a baseline) should outweigh any GHG emissions that were produced as a consequence of the implementation of the activity over its whole lifecycle. The “net carbon removal benefit” should be quantified in a robust and accurate way.
- **Additionality:** Carbon removal activities need to go beyond existing practices and what is required by law – in other words, how much additional benefit is achieved relative to what would have occurred otherwise. The preferred way to prove additionality is to set a “standardised” baseline that accurately reflects the standard

¹ See, e.g., [Mind the Gap: How Carbon Dioxide Removals Must Complement Deep Decarbonisation to Keep 1.5°C Alive](#), in which the Energy Transitions Commission posits that switching to renewables alone will be insufficient to meet the Paris Agreement goals.

practices and the regulatory and market conditions in which the activity takes place. A standardized baseline facilitates a cost-effective and objective demonstration of additionality, and also has the advantage of recognising the early efforts of land managers and industries that already engaged in carbon removal activities in the past. In order to ensure ambition over time, the standardised baseline should be periodically updated.

- **Long-term storage:** Certificates are linked to the duration of carbon storage so as to ensure permanent storage. The certificates will clearly account for the duration of carbon storage, and distinguish permanent storage from temporary storage.
- **Sustainability:** Carbon removal activities must preserve or contribute to sustainability objectives such as climate change adaptation, circular economy, water and marine resources, and biodiversity. For example, industrial solutions such as BECCS (Bio-Energy with Carbon Capture and Storage) must not lead to unsustainable demand of biomass. The Commission will prioritise the development of tailored certification methodologies on carbon farming activities that provide significant co-benefits for biodiversity. At the same time, practices, such as forest monocultures, that produce harmful effects for biodiversity should not be eligible for certification.

How Carbon is Removed and Stored

The European Union recognizes that to reach net-zero by 2050, as a matter of urgency, GHG emissions must be reduced and, for residual emissions that cannot be eliminated, CO₂ needs to be removed from the atmosphere (namely scaling up carbon removals).

There are various ways to remove and store carbon,² all to be certified under the proposed Framework:

- **Permanent storage:** industrial technologies such as BECCS or DACCS (Direct Air Capture with Capture and Storage), capture carbon from the air either indirectly (through the processing of biomass, in the case of BECCS) or directly (in the case of DACCS) and store it in a stable form;
- **Carbon farming:**³ carbon can be naturally stored on land through activities that enhance carbon capture in soils and forests (*e.g.*, agroforestry, forest restoration, better soil management), and/or reduce the release of carbon from soils to the atmosphere (*e.g.*, restoration of peatland). Carbon farming activities contribute to achieving the EU's ambitious target of 310 Mt of CO₂ net removals in the Land Use,

² The proposed Regulation defines “carbon removal” as either the storage of atmospheric or biogenic carbon within geological carbon pools, biogenic carbon pools, long-lasting products and materials, and the marine environment, or the reduction of carbon release from a biogenic carbon pool to the atmosphere. A “carbon removal activity” means one or more practices or processes carried out by an operator resulting in permanent carbon storage, enhancing carbon capture in a biogenic carbon pool, reducing the release of carbon from a biogenic carbon pool into the atmosphere, or storing atmospheric or biogenic carbon in long-lasting products or materials.

³ The proposed Regulation defines “carbon farming” as a carbon removal activity related to land management that results in the increase of carbon storage in living biomass, dead organic matter and soils by enhancing carbon capture and/or reducing the release of carbon to the atmosphere.

Land Use Change and Forestry (LULUCF) sector, set out in proposed amendments to the Regulation on Land Use, Land Use Change, and Forestry⁴; and

- **Carbon storage in products:**⁵ atmospheric carbon captured by trees or industrial technologies can also be used and stored in long-lasting products and materials, such as wood-based or carbonate-bonded construction materials.

According to the Commission [Q&A](#), capture of fossil carbon for Storage (CCS) or Utilisation (CCU) is not covered. These technologies help to recycle or store new fossil CO₂ emissions, reducing the likelihood that they add to CO₂ already in the atmosphere, but do not remove carbon from the atmosphere.

Examples of Uses of Carbon Removal Certificates

The carbon removal certificates can be used for result-based rewards by private or public sources. The Commission Q&A lists, for example:

- Food companies can reward farmers for higher carbon removals that result from more carbon storage in soils or other climate-friendly practices, such as agroforestry. While farmers will benefit from additional income, food companies can credibly document their carbon footprint. It will be easier for consumers and investors to compare the food companies' climate claims based on the harmonised certification rules.
- Public authorities or private investors that want to finance innovative carbon removal projects or procure carbon removals (*e.g.*, through reverse public auctions or advance market commitments) can use the certification rules to better compare the offers and reward the projects based on the amount of the certified removals.
- Regional authorities can finance the establishment or enlargement of nature parks through the sale of carbon removal certificates, monetising both the climate and biodiversity benefits.
- Construction companies or property owners investing in long-term use of more sustainable building materials, which remove and store carbon - such as wood-based ones - can earn additional income through the sale of carbon removal credits. Labelling programs for sustainable construction materials could equally benefit from harmonised certification rules.
- The carbon removal certificates can be used for result-based financing under EU programs, such as the Common Agricultural Policy or the Innovation Fund, or State aid schemes by Member States.

⁴ In November, the European Commission reached agreement on the LULUCF Regulation with the European Parliament and Council to increase the EU target for carbon removal by natural sinks to 310 Mt of CO₂ net removals by 2030. (*See [Press Release](#).*) The new target would be set forth in a [Regulation](#) to amend [Regulation 2018/841](#) setting out targets in the LULUCF sector and Regulation 2018/1999 on monitoring progress. Essentially these regulations require Member States to ensure that accounted GHG emissions from LULUCF are balanced by at least an equivalent accounted removal of CO₂ from the atmosphere between 2021-2030 through action in the sector (known as the “no debit” rule).

⁵ The proposed Regulation defines “carbon storage in products” as a carbon removal activity that stores atmospheric and biogenic carbon in long-lasting products or materials.

- The carbon removal certificates can also increase transparency in private markets, such as in the context of the CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) mechanism for the offsetting of international aviation emissions.
- The carbon removal certificates can also help public and private organisations back-up credible carbon removal claims and meet stakeholder expectations that carbon removals should not be used for greenwashing, in line with the Corporate Social Responsibility Directive and the related European Sustainability Reporting Standards. (See my previous briefing note, available [here](#).)

Removal versus Offset

Offsetting occurs when a business compensates for its GHG emissions by purchasing carbon credits to finance emission reductions or carbon removals elsewhere. Carbon credits traded today generally come from GHG emission reductions and not from carbon removals. Carbon removal certificates are a recognition that an activity is providing high-quality carbon removals in accordance with the quality criteria and the certification process. Offsets, therefore, are one of the possible uses of carbon removal certificates.

Responses

In early November, a group of climate NGOs, in [letter](#) to the Commission set out various concerns regarding the proposed Framework. Among them:

- Carbon removals should be supplementary to emissions reductions. Offsetting continued emissions with carbon removals should be explicitly ruled out by the Framework, even within agricultural value chains.
- The Framework should focus on actual carbon removals and exclude emission reductions or avoidance. Real removals take GHGs from the atmosphere and should have the ability to store them for (at the very least) centuries. The Commission should clearly define and operationalise permanence of storage to avoid confusion later in the process, and explicitly relate minimal monitoring periods and liabilities to permanence of storage. Differentiation between permanent and short-term storage is critical, and short or medium-term “stores” of carbon (such as bio-based building materials, plastics or textiles, typically only usable for up to a few decades at most) should not be equated with permanent storage in any way. Different durations of likely storage should lead to a risk-based approach to reversals, including how their climate results can be used and accounted for. Products that are not designed to last for long periods of time should never count towards removal targets.
- The Commission should clarify the issue of liability if or when removals are reversed, and the stored carbon enters the atmosphere again. As noted above, nature-based removals (such as those envisaged through carbon farming) are at an especially high risk of reversals. Therefore, the Framework should be limited to those carbon removal approaches that have lower reversal risks (rewetted peatlands, ecological forestry and geological storage), and not those with higher reversals risks such as soil carbon sequestration.
- The Framework should set the bar for understanding and addressing social and environmental impacts through robust safeguards.

Following the publication of the draft Regulation, Carbon Market Watch, among others, [took issue](#) with the absence of details on certain critical issues such a permanence of storage (citing the grouping of the three types of carbon removal activities together, which in their view overlooks the different durations, the differences in monitoring and different risks of reversal) and liability for reversals.

Next Steps

The Regulation will need to be adopted by the European Parliament and the Council. Separately, the Commission will establish an Expert Group to advise on the preparation of certification methodologies. Once the Regulation is adopted, the Commission will adopt Delegated Acts to establish the certification methodologies and Implementing Acts setting out rules on certification modalities/procedures and recognition of certification regimes.

Carbon Trading Update

Voluntary carbon markets (outside governmental requirements) allow emitters of carbon to offset the emissions they are unable to avoid (for example, in the making of cement) by purchasing carbon credits issued by projects that remove or reduce GHG from the atmosphere.⁶ In short, a company or individual can purchase a carbon credit (corresponding to one metric ton of GHG emissions reduced, avoided or removed) to compensate for one ton of GHGs emitted. As more participants set their own net-zero targets, the downstream market is expected to grow. The upstream end is comprised of developers of projects that issue carbon credits based on the removal or management of GHGs from the atmosphere arising from industrial processes, for example, through soil sequestration, afforestation or avoided deforestation.

Integrity Council

In 2021, Mark Carney, the UN Special Envoy for Climate Action and Finance, set up the [Integrity Council for the Voluntary Carbon Market](#), as a successor to the Taskforce on Scaling Voluntary Carbon Markets, a private sector-led initiative to scale an effective and efficient voluntary market for the trading of carbon credits. The Integrity Council seeks to create a voluntary carbon market (“VCM”), as a means of controlling GHG emissions, for the trading of high-quality carbon credits by setting and enforcing global threshold standards. The effort ultimately is aimed at improving quality, that is, moving away from low-credit credits that feed greenwashing and avoiding a race to the bottom.

The effort has three pillars:

- the supply side (are credits doing what they purport to do – driving the need for the global threshold standard for high quality carbon credits);
- the VCM (is there confidence in contracts and prices – driving the need for standards and infrastructure to underpin the market); and

⁶ Mandatory carbon markets are regulated through formal carbon reduction schemes, such as the EU Emissions Trading Scheme (EU-ETS) and the Clean Development Mechanism under the Kyoto Accords.

- the buy side (how are credits used – driving the need for accepted standards for using credits as part of a credible path to net-zero).

The key elements of the effort are the proposed [Core Carbon Principles, Assessment Framework and Assessment Procedures](#). Yesterday, the Integrity Council published the [results](#) of its public consultation on these documents. As noted in the consultation response from [Gold Standard](#), the effectiveness of the VCM depends on quality and integrity, hence the need for accepted standards and a benchmark.

The CCPs are:

Quality Principles at Carbon-Credit Level:

- ***Additionality*** – GHG emission reductions or removals from the mitigation activity must be additional, namely, they would not have occurred in the absence of the incentive created by carbon credit revenues.
- ***Permanence*** – GHG emission reductions or removals from any mitigation activity must be permanent, or if they have a risk of reversal, any reversals must be fully compensated.
- ***Robust quantification of emissions reductions and removals*** - the GHG emission reductions or removals from a mitigation activity must be robustly quantified, based on conservative approaches, completeness and sound scientific methods.
- ***No double counting*** - namely a claimant must use the benefit associated with a credit against one target/claim only, rather than allowing the same benefit to be used by two or more claimants – this being the third of the three risks, the other two being double issuances (when two or more carbon credits are issued for the same reduction or removal) and double uses (when two or more claimants count the same carbon credit to reach mitigation targets).
- ***Transition towards net-zero emissions*** - the mitigation activity must avoid locking in levels of emissions, technologies or carbon-intensive practices that are incompatible with achieving net-zero emissions by mid-century.

Integrity Principles at Carbon-Crediting Program Level

- ***Program governance*** - the carbon-crediting program must have effective program governance to ensure transparency, accountability and the overall quality of carbon credits.
- ***Robust independent third-party validation and verification*** - the carbon-crediting program must have program-level requirements for robust independent third-party validation and verification of mitigation activities.
- ***Registry*** - the carbon-crediting program must operate or make use of a registry to uniquely identify, record and track mitigation activities and carbon credits issued to ensure credits can be identified securely and unambiguously.
- ***Mitigation activity information*** - the carbon-crediting program must provide comprehensive and transparent information on all credited mitigation activities. The information must be publicly available in electronic format, and scrutiny of mitigation activities must be accessible to non-specialised audiences.
- ***Sustainable development impacts and safeguards*** - the carbon-crediting program must have clear guidance, tools and compliance procedures to ensure mitigation activities conform with or go beyond widely established best industry best practices on social and environmental safeguards while delivering on net positive sustainable development impacts.

As the Carbon Market Watch [noted](#), the Integrity Council effort underscores the difficulty of establishing standards that truly limit the issuance of credits for projects that can generate credits good enough to be used as offsets. The challenge is that credits that purportedly represent a full ton of carbon in a system based on ton-for-ton compensation may not guarantee that level of impact given the absence of precision in measuring impact.

Energy Transition Accelerator

At Sharm El-Sheikh, Special Presidential Envoy John Kerry announced a partnership among the State Department, the Bezos Earth Fund and The Rockefeller Foundation called the Energy Transition Accelerator. The idea is to leverage the voluntary carbon market to funnel capital from the private sector to the Global South to speed the transition to renewable energy. US businesses can buy credits in respect of their GHG emissions with the proceeds being invested in renewable energy projects.

The ETA effort (according to a [press release](#) issued by The Rockefeller Foundation) will require:

- A methodology with rigorous protocols for crediting and for monitoring, reporting, and verification to ensure that carbon credits generated are real, additional and permanent.
- Rules and safeguards that ensure that the use of carbon credits by companies is consistent with a science-aligned net-zero pathway. Participating companies will need to achieve deep reductions in their own value chain emissions, with emissions reductions generated through the ETA supplementing their internal abatement.
- Parameters that maintain integrity while ensuring sufficient supply (*i.e.*, developing country participation) and demand (*i.e.*, company participation).
- Guidance for social safeguards, benefit-sharing arrangements and support for job creation and training in participating jurisdictions.
- Stringent end-to-end transparency guidelines.

Concluding Thoughts

The April 2022 IPCC report on mitigation (*see* my previous briefing note, available [here](#)) projects that to limit warming to 1.5°C (with a two-thirds chance), cumulative emissions cannot exceed 420 GtCO₂ (equivalent by some estimates to 11 years of current emissions). Experts agree that a rapid reduction in emissions together with carbon removal are essential to bring the increase in warming back to 1.5°C by 2300. There are sectors that are difficult to decarbonize, including some industrial processes and farming, and in the short run given the energy crisis triggered by the war in Ukraine among other factors, emissions actually will increase in the short term. As the IPCC [has noted](#), identifying “affordable and environmentally and socially acceptable methods of carbon removal at scale well before 2050” will be critical, particularly in so-called “overshoot” scenarios.

According to climatologist Zeke Hausfather, [writing](#) in The Guardian this past month, much of the time it is less expensive to reduce emissions than to remove carbon from the atmosphere after the fact. He refers to models that show that emissions need to be reduced by

90%, while only using carbon removal for around 10%. But, he concludes, “10% of the solution to a problem as big as climate change is still something we cannot afford to ignore.”

There are multiple factors to consider in carbon removal, including cost and permanence, as well as the limits of certain solutions (natural sinks may be less expensive but temporary, and there is only so much carbon that can be removed by forests and soil). All this will take capital, and while emissions reduction efforts command the most attention (and capital) efforts to channel capital to carbon removal solutions (including new technologies such as direct air capture) should not be overlooked.

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