Microsoft's comments on the European Commission's proposal for a Carbon Removals Certification Framework (EU CRCF)

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There is growing international recognition that meeting net zero by 2050 will first and foremost require dramatic changes in order to cut emissions, but also a significant amount of carbon removal.

More and more carbon reduction strategies are emerging, at national and local levels, as well as within the private sector. However, a systemic approach to support quality carbon removal is far less advanced – in terms of technology, quality, regulation, and large-scale investments.

For Microsoft, both carbon reduction and carbon removal are pivotal to achieving our commitment to be carbon negative by 2030. Carbon reduction remains first and foremost in our strategy, and we will use carbon removal to address any remaining unavoidable emissions, namely to compensate for hard-to-decarbonize sectors. We strongly believe that addressing the climate crisis requires us all to collaborate and share information to help the world move as quickly as possible toward climate solutions. In January 2021, we published our first carbon removal briefing paper, communicating our approach and what we learned during our inaugural carbon removal request for proposals (RFP). Building off this report, in July 2021 together with Carbon Direct, we reflected on the needed Criteria for High-Quality Carbon Dioxide Removal. In September 2021, we shared further observations in a *Nature* comment. In a follow-up paper in March 2022, we provided an update on our second year of progress.

One of the most critical steps to shape the carbon removal market and address some of the challenges it faces is to recognize that transformation is needed at a systemic level. This is exactly what the EU Green Deal and European Climate Law are aiming at, by setting targets for the European Union to become climate neutral by 2050, and putting forward legislative proposals that specifically aim to develop carbon removal solutions and markets.

Policy will play a fundamental role in creating the conditions for establishing a growing carbon removal market. Microsoft welcomes the EU's proposal to establish a first of its kind certification framework for carbon removals. The certification system will be crucial in setting high-quality standards for a healthy and trusted market, and Europe's work in this area can also connect with and inspire others.

In this paper, we aim to contribute to the conversations shaping the EU's Carbon Removals Certification Framework (CRCF), by sharing our considerations and support for policy measures that focus on:

1. *Definitions and Accounting: Driving clear definitions by differentiating carbon removals from carbon reductions and ensuring clear accounting for carbon removals, supported by digital technology*
2. *High-Quality Standards: Supporting high-quality standards for carbon removals by strengthening the definitions of Additionality, Durability, and Leakage*
3. *Additional Objectives: Advancing environmental justice, minimizing harms, and pursuing co-benefits as additional objectives under CRCF Article 7*
4. *Robust MRV: Ensuring robust Monitoring, Reporting and Verification, by ensuring the independence of certification schemes, access to certification for novel engineered solutions, and alignment with existing methodologies*

The sections below offer more perspective on the above items.

1. **Definitions and Accounting: Driving clear definitions by differentiating carbon removals from carbon reductions, and ensuring clear accounting for carbon removals, supported by digital technology**

Microsoft supports the EU's efforts to incentivize emissions reductions across the region, as well as boost carbon removal activities that will be crucial for the EU to achieve its aim of net-zero greenhouse gas emissions by 2050. Emission reductions are and need to remain our top priority. But emission reductions are not sufficient. Europe needs a healthy carbon removal market to meet its climate ambitions. The EU CRCF is a key building block for scaling up this nascent carbon removal market.

Currently, there is no consistent set of standards for monitoring, reporting, and verifying carbon removals. Removals are not consistently distinguished from credits that cover avoided or reduced emissions, particularly in the most widely used standards. With its CRCF proposal, the EU is showing global climate leadership and has the opportunity to build an approach that satisfies the need for greater clarity, consistency, and transparency of carbon accounting principles and standards.

Clearly differentiate carbon removals from carbon reduction activities

It starts with clear definitions. The definition of carbon removals is a significant factor hampering the development and affordability of the carbon removal market. Therefore, in the first place, we need to set common and clear definitions. Microsoft suggests that the EU CRCF sets clear definitions for carbon removal, carbon removal activity, and carbon farming in Article 2, focused on activities that (a) are strictly removal-focused - rather than focused on emissions reductions or on a mix of both carbon removal and reduction, and (b) for which the primary benefit is carbon removal itself. Without an agreed definition that differentiates between reductions and removals, we will not be able to drive the scale we need, at the pace we need for the net-zero transition. The lack of uptake will in turn deprive the sector of the funds it needs to further scale up and innovate. If the EU CRCF allows for both removals and reduction, it is crucial that credits be delineated and labeled clearly according to which category they fall under.

Avoidance credits should relate to actions *preventing* the release of greenhouse gases into the atmosphere (e.g. protecting existing forests from deforestation or fuel switching). This is in contrast to removal credits, which should apply to direct removal of carbon dioxide *already* in the atmosphere (e.g. direct air capture and storage, afforestation and reforestation, and soil carbon sequestration).

The global carbon removal space is rapidly evolving and developing. EU harmonization of clear definitions of avoidance versus removal credits *alongside* other governmental, inter-governmental organizations and non-governmental leaders is key to establishing cogent carbon removal markets. For instance, definitions from the Greenhouse Gas Protocol or Voluntary Carbon Markets Integrity Initiative (VCMI) are widely utilized by companies for GHG reporting. In 2022 the VCMI put its provisional Claims Code of Practice out for public consultation and received responses from over 130 organizations, 75% of which indicated a need for differentiation based on credit types (reductions vs removals).[1]

At the intra-governmental level, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) are reaching consensus around definitions for the Paris Agreement's Articles 6.2

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[1] https://vcmintegrity.org/wp-content/uploads/2022/11/Feedback-on-the-Provisional-Claims-Code-of-Practice.pdf

and 6.4 governing the use of market mechanisms for emissions reductions. Parties to the UNFCCC have agreed not only to (a) detailed and comprehensive methodologies for estimating national sources and sinks of anthropogenic gases[2] but also (b) consistent and Common Reporting Formats (CRF) which allow comparisons across national inventories.[3] Common metrics adopted at COP27 required Parties to UNFCCC to utilize 100-year global warming potential values in their national reporting by 2024 – calling not only for consensus on definitions of credit types but also longer durations on durability. COP27 decisions indicated that "each party shall provide a national inventory report of anthropogenic emissions by sources and removals by sinks of GHGs...according to the guiding principles modalities, procedures and guidelines (MPGs).[3]" Comparative definitions and metrics are critical to a transparent and trustworthy carbon market.

Further alignment on definitions of avoidance vs. removal credits within compliance and voluntary markets is needed to operationalize the Paris Agreement's Article 6.4 mechanism and corresponding adjustments for Internationally Transferable Mitigation Outcomes (ITMO) under Article 6.2.[4]. To underscore this point, by 2030 Microsoft plans to purchase more than 5 million tons of carbon removal each year. With 2030 fast approaching and many other corporate actors seeking to get more involved in the removal space, we seek clear and universal rules for a) corporate and national accountings of carbon removal and b) (relatedly) when CDR tonnage can and/or needs to be converted to ITMOs. Harmonization on definitions between Article 6 of the Paris Agreement and the EU CRCF would facilitate a greater influx of private capital for funding mitigation measures (both avoidance and removal) within the EU by both corporate and private entities.

The carbon removal landscape is changing rapidly, with net-zero and net-negative emission targets on the rise and ambitious entities increasingly making commitments to remediate their historical emissions. For instance, Microsoft has committed to remediate all its historical emissions back to the company's founding in 1975. Only *removal* credits are appropriate towards remediating historical emissions. Clear definitions of removals and avoidance credits will be critical for the collective remediation of historical emissions. If the EU CRCF fails to distinguish removal from avoidance and thus negates the ability of ambitious actors to address their historical emissions, it would represent a significant missed opportunity.

Driving clear accounting for carbon removals, supported by digital technology

Another obstacle to overcome is the lack of common and consistent carbon accounting and measurement standards. And without being able to accurately measure carbon, we can't know what our impact is and what remains to fix. We welcome the aim of the EU CRCF to advance clear and correct accounting of the verified carbon removal units and develop standards of accounting and transparency that will be applied by certification schemes. We also welcome the Commission's aim to establish and maintain interoperable public registries using automated systems to ensure transparency and full traceability of carbon removal certificates. This is important, as Artificial intelligence (AI) will be a key tool in accelerating and achieving the transformation we need. It allows us to process large volumes of data from multiple sources, such as satellites, sensors, and written

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[2] See http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf.

[3] See paragraphs 1 and 2 of the decision on common metrics adopted at the 27th UNFCCC Conference of Parties (COP27), available online at https://unfccc.int/sites/default/files/resource/sbsta2022_L25a01E.pdf.

[4] See chapter 3 "VCM and the Paris Agreement" https://vcmprimer.files.wordpress.com/2023/01/20230118_vcm-explained_all-chapters_compressed_final.pdf

reports. Digital technologies will play a vital role in supporting and enabling carbon removal policies, with the measurement and accounting that will be at their core.

2. **High-Quality Standards: Supporting high-quality standards for carbon removals by strengthening the definitions of Additionality, Durability, and Leakage**

Scaling the carbon removal market quickly does not mean sacrificing integrity. On the contrary an active carbon removal market requires trust among the participants, including NGOs, corporate buyers, investors, and policymakers. That trust depends on greater clarity, consistency, and transparency of carbon removal accounting principles and standards.

In the absence of common standards, but not wanting to further delay urgent progress in carbon removal, at Microsoft, we have developed and communicated our own criteria, and have recognized that other corporate buyers have done the same in isolation. This means that organizations are tracking outcomes in different ways that cannot be compared easily. This leads not only to inefficiency but also to inconsistencies in claims. For Microsoft and other companies to do this work efficiently in the future, we will need the market to adopt scientifically sound, common, and transparent standards for carbon removal. This area is an opportunity for the EU CRCF, not only in the regulatory context but also in support of voluntary markets.

Additionality: Encouraging strict tests to secure robust additionality

Microsoft welcomes and stresses the importance of creating clarity around what counts as carbon additionality through the EU CRCF. This will be crucial to build trust and integrity in the system overall. We encourage following strict tests to secure robust additionality, that should be applied to all carbon removal activities. We welcome the additionality tests (a) and (b) In Article 5.1, and suggest to consider adding the following tests for an even more robust approach: demonstrate that it requires carbon finance to implement it, show that the activity is not "common practice".

Long-term storage/ Durability: Prioritizing highly durable solutions

To date, removal policies have concentrated on source carbon capture solutions or natural solutions that store carbon for less than 100 years. High-durability carbon removal technologies and solutions - such as carbon mineralization and direct air capture (DAC) - are those that sequester carbon dioxide for millennia. In July 2022, Microsoft signed a 10-year carbon removal offtake agreement with Swiss-based Climeworks, that focuses on DAC, where they will permanently remove 10,000 tons of CO2 emissions from the atmosphere on Microsoft's behalf. We also continue to procure and invest in other high-durability removals, aiming to ensure the permanence of our own purchases and to drive affordable supply. We work with Swiss company Neustark focused on carbon mineralization to decarbonize concrete production. Their process has been identified as one of the three most promising approaches to carbon removal.

These high-durability, technology-based solutions generally do not present as high a risk of reversal as natural solutions (such as the risk of a wildfire destroying a forestry project). But these solutions are also currently in very short supply and unaffordable for many companies. At Microsoft, we support policies that boost the market for highly durable engineered solutions such as DAC, biomass-based pathways, and carbon mineralization. Microsoft also supports policies that enable nature-based solutions as they provide easy onramps for new entrants to the Voluntary Carbon Market, while highly durable solutions come down the cost curve. Additionally, conserving and restoring existing ecosystems is vital in addressing climate change. The EU CRCF has the potential to set more robust

standards for durability by: strengthening the liability mechanisms for long-term storage, clarifying that the carbon stored by a carbon removal activity shall be considered released to the atmosphere when there is no longer both monitoring and a liability mechanism; giving guidance that ties the use of these highly durable solutions to comply with last-mile reduction requirements. We welcome more clarity on how liability will be distributed between the operator of the carbon removal activity, the carbon storage site operator and the claimant of carbon rights (i.e. the carbon removal buyer).

Leakage: stronger inclusion of leakage considerations for nature-based solutions

Microsoft suggests stronger inclusion of leakage considerations related to nature-based credits. While leakage is important for all CDR project types, leakage risk is higher in nature-based credits, particularly Improved Forest Management (IFM) or other nature-based areas with competition from other agricultural activities (e.g. livestock grazing, soy, forestry activities etc.). Microsoft elaborated on this in a January 2021 briefing paper, calling for clear accounting of carbon removal and critical guidelines for additionality, durability, and leakage. Sufficiently accounting for activity and market leakage within and beyond the jurisdictional boundary of the scope is required to meet Microsoft's criteria for high-quality carbon removal. We feel that any forestry project with a zero-leakage deduction is simply unrealistic given the dynamic nature of resource markets.

3. **Additional Objectives: Advancing environmental justice, minimizing harms, and pursuing co-benefits as additional objectives under CRCF Article 7**

Ensure a comprehensive list of sustainability objectives to minimize risks and pursue co-benefits

At Microsoft, we prioritize projects that provide more than just carbon removal, such as advancing sustainable livelihoods and environmental justice, building climate resilience, supporting water conservation, waste reduction, protecting ecosystems and biodiversity. In the EU CRCF, we suggest enriching the list of sustainability objectives in Article 7 with additional criteria such as maintaining forest extent or forest carbon stocking, which are important when looking at carbon removal projects such as BECCS.

Environmental justice as a sustainability objective related to carbon removal activities

Climate change has and will continue to affect communities differently. We believe that public carbon removal policies should incorporate climate equity considerations and the EU CRCF presents the opportunity to do so, for example by adding environmental justice as one of the sustainability objectives related to carbon removal activities in Article 7. Mechanisms for this could include listening sessions with affected communities to set specific program goals that address local environmental justice priorities; profit sharing with local communities; job training and utilization of local labor for project implementation; development of performance indicators to ensure continuity of focus on climate equity; and incubation of carbon removal projects designed and implemented across community and private sector stakeholders that make a meaningful contribution to climate equity goals. The policy can also play a valuable role in communicating the benefits of carbon removal—for instance, to farmers, for whom soil carbon sequestration can lead to larger, more resilient yields—and supporting sustainability skills development within affected communities.

4. Robust MRV: Ensuring robust Monitoring, Reporting and Verification, by ensuring the independence of certification schemes, access to certification for novel engineered solutions, and the alignment with existing methodologies

We welcome the focus on advancing robust mechanisms for monitoring, reporting and verification (MRV) in the proposed Regulation. We also support the use of technology/ automated systems to ensure the interoperability and accessibility of public registries related to certification. Technology can also be used for ongoing monitoring beyond existing standards to provide more confidence in actual carbon removal. We are committed to helping our customers meet their environmental, social and governance (ESG) corporate reporting requirements, including data related to carbon removals, and recognise the importance of monitoring structures for high quality data.

To strengthen the integrity and credibility of certification mechanisms, we suggest certification schemes, in addition to certification bodies, to also be independent from the operators (Article 10.2 (b)). We would also welcome clarity on how more experimental engineered carbon removal projects (e.g. DAC, bio-oil sequestration), that may not have a formal certification yet, can access the certification schemes recognized by the Commission (Article 13.1), and show compliance with the Regulation.

Alignment of the EU CRCF with MRV practices of above-mentioned governmental, inter-governmental organizations and non-governmental leaders (UNFCCC, VCMI, GHG Protocol, US SEC etc.) will not only promote transparency and trust within the EU carbon market, but further reduce transaction costs for project developers who increasingly face prohibitive costs for project design along MRV measures. Moreover, it will be important to ensure that methodologies to calculate carbon removals will be aligned with existing methodologies being adopted by the European Commission as part of its Corporate Sustainability Reporting Directive, setting a standard for corporate GHG reporting in the region. Reducing burdensome duplicative reporting measures across a variety of jurisdictional guidance is an equity issue to increase the diversity of carbon developers, particularly for small or new-entrants to the market and for Black, Indigenous and people of color (BIPOC) owned and operated entities.

Contact: Adina Braha-Honciuc, Director Sustainability Policy, European Government Affairs, adinab@microsoft.com

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