Guidance document

Microsoft carbon dioxide removal procurement cycle

Background

Microsoft's carbon negative commitment requires that by 2030 we reduce our total carbon emissions by over half and remove the rest. In addition, we are committed to removing our direct emissions since the company's founding in 1975 by 2050. In the first three years of our carbon dioxide removal (CDR) program, we contracted over 7 million metric tons (mt), and we publicly shared our lessons learned in three whitepapers from FY21, FY22, and FY23. In the next year, we plan to procure both near-term carbon removal and to identify long-term offtake opportunities for the coming decade that will help us scale to greater than ~5 million mt annually by 2030.

Carbon dioxide removal is one of two prongs of the Microsoft effort to meet our carbon removal commitment:

1. Procure high-quality CDR tonnage (covered by this intake process).
2. Invest in CDR technologies through the Climate Innovation Fund (not covered by this intake process).

We have an opportunity to drive demand for high-quality carbon removal through our criteria, projects, and market innovations. We are committed to supporting solutions that contribute maximum positive impact, transparency, and collective market intelligence to address the global climate crisis at this critical time. We place strong emphasis on measuring and verifying net-negative emissions to a high degree of scientific confidence, through both officially certified credits and alternative modes of verification.

Reflections from our first three years

In the first years of our carbon removal program, we learned key lessons we will incorporate going forward:

1. **Emphasize straightforward accounting of carbon removal.** Our definition of a net-negative carbon removal project is one that is additional, makes defensible claims for the durability (permanence) of its carbon sequestration, and appropriately accounts for any leakage.
2. **Place bigger bets.** To source the volume that we need, we will prioritize projects that have large volumes available for this fiscal year and that are seeking multi-year commitments. We are still interested in supporting small pioneering projects as a secondary priority.
3. **Be open to projects outside the existing carbon market infrastructure.** There are worthy projects that have not been officially certified by registries, and we want to encourage their growth while staying rigorous with our accounting.
4. **Refine the process.** We have refined our review process and streamlined our due diligence requests. Partnering with Carbon Direct, we also published our criteria for high-quality carbon

removal that we use when evaluating all projects. These criteria should allow organizations to self-evaluate whether their projects fit our needs.

In the second year of our program, we reflected on the previous year's lessons and added three key lessons:

1. **The market lacks strong, common definitions and standards.** We have developed and communicated our own criteria, and other corporate buyers have done the same. This means that organizations are working in isolation and tracking outcomes in different ways that cannot be compared easily. This leads not only to inefficiency but also to inconsistencies in claims.
2. **High-durability solutions are critical, but supply is limited and expensive, and many companies cannot yet afford them at scale.** We need expensive, higher durability solutions to become more affordable. Multi-year demand commitments, direct investment, and supportive policies are all critical to driving costs down.
3. **Forestry and soil carbon removal face sobering challenges in quality but offer short-term climate value and co-benefits beyond carbon removal.** Challenges with nature-based solutions underline the fact that removal is not a uniform commodity that can be compared easily across project types. However, we believe that corporate support for nature-based carbon removal remains essential. We have taken critiques of nature-based solutions seriously and developed our own approaches to mitigating risk with these project types.

In the third year of our program, we continued to reflect and share key learnings.

1. **Additionality:** For projects with multiple revenue streams or government support, it is important to show clearly how carbon markets make the difference. Applicants should be prepared to share financial models or other substantiation that the project would not be viable without our offtake.
2. **Model reliance:** If your proposal relies heavily on modelled carbon outcomes (e.g., as is prevalent in soil carbon sequestration, enhanced rock weathering (ERW), and ocean alkalinity enhancement (OAE)), make sure to articulate your uncertainties and your plans to develop modeling and robust MRV.
3. **Environmental justice:** Perhaps the most important tension we face in developing CDR capacity from scratch is as follows. On one hand, the IPCC-endorsed science suggests we must very rapidly ramp up removal capacity. On the other hand, the world knows, from hard experience, that insufficient attention to local effects and to community and justice concerns will slow projects, harm communities, or both—and such attention takes time. We expect project proponents to articulate how they will manage this tension. Desired outcomes

During the fourth year of our program, we developed detailed guidance that informs our assessment of biomass-based and enhanced rock weathering project submissions. Looking forward, we will continue to periodically share insights and guidance for high-quality CDR project development and procurement.

Our desired outcomes in issuing this procurement effort are to:

1. Procure high-quality CDR tonnage in the volumes needed to meet our near-term needs and initiate multi-year contracts to fulfill our future needs.
2. Establish and communicate best practices for high-quality projects.

3. Support projects that use emerging innovative technologies with higher durability and significant potential for scale.
4. Discover and share insights on market dynamics of high-quality CDR.
5. Understand how Microsoft can encourage a diverse, equitable, and inclusive CDR supply chain and partner ecosystem.

Project types

We will consider CDR proposals from the following project types. This list is not exhaustive; we invite other approaches not listed here that meet our specifications, especially CDR pathways that have the potential to generate at least 1 million metric tons per year in carbon removal by 2030.

Project types (in all cases, removal only)

- Forestry
    - Afforestation
    - Reforestation
    - Improved forest management
    - Agroforestry
    - Silvopasture
- Mangrove forestation
- Soil carbon
- Coastal blue carbon
- Enhance rock weathering
- Ocean alkalinity enhancement
- Carbon dioxide mineralization (excluding enhanced weathering and ocean alkalinity enhancement)
- Biomass conversion with carbon removal and storage (BiCRS), including:
    - Bioenergy with carbon capture and storage (BECCS)
    - Biochar
- Direct air capture and storage
- Carbon dioxide (CO_2) utilization (using strictly biogenic sources of CO_2)
- Other project types that meet our prerequisites

Application due dates

Organizations are welcome to submit proposals throughout the year, and we fill our portfolio on a rolling basis. These horizons are subject to updates on an annual basis.

- Current Fiscal Year (FY) offers: We will fulfill our current-year portfolio (July 1– June 30) on a first come, first served basis, prioritizing projects with high quality and high volume. When project proponents determine that their projects meet our prerequisites, we strongly encourage them to apply as soon as possible.
- Future offers: We will consider proposals for future-year (including multi-year) procurement throughout the year and this intake form will thus remain open for the foreseeable future.
- Note: Please be aware that we are receiving an increasing number of CDR proposals, which is extending our review process. Please ensure that your submission includes all required information. To help ensure a timely response, please include the following documents:
    - Project Design Document
    - Third-party life cycle assessment or completed Lifecycle Emissions Intake Form (LEIF)
    - Monitoring, reporting, verification (MRV) plan
    - Community benefits plan (if available)
    - Project location geographic information system (GIS) data (ideally a zipped KML/KMZ file, but it could also be a zipped shape file)
    - If applicable, forestry harvest plan
    - Other supporting information that will assist our analysis of project quality

Application process and timelines

We are committed to a thorough review of each proposal for all prerequisites and criteria through a **two-step application process**. The first step starts once a proposal is submitted directly through http://aka.ms/carbonremovalapplication. We conduct a thorough prerequisite review which encompasses all prerequisites mentioned in this document as well as Criteria for high-quality carbon removal. Please be sure to read the FAQ doc prior to submitting application. This document will provide notes on our procurement process.

When a project meets our minimum prerequisites, it moves on to our due diligence phase. This includes a secondary application to further investigate how the project meets the specifications laid out in our Criteria for high-quality carbon removal.

In general, given the novelty of the carbon removal space, the complexity of many removal pathways, and the lack of strong, common removal standards, **it takes 2-3 months to complete this process** and come to a decision on whether a project is desirable. We encourage applicants to submit a proposal with plenty of time ahead of any key deadlines on the applicant's side. For those applicants aiming for a **multi-year contract, be aware that diligence and negotiation may take 6-9 months** or more, depending on specifics.

Prerequisites and considerations

For projects in development at this time, we understand you may not have final answers to many of these questions. In this case, please answer to the best of your ability and indicate any uncertainties.

We will purchase tonnage *only* from projects that meet the minimum viable specifications detailed in our criteria for high-quality carbon removal. We place special emphasis on:

1. **Net-negativity.** Removing net atmospheric carbon dioxide on a lifecycle basis, as demonstrated by robust carbon accounting.
2. **Scientific verification.** Verifying carbon removal claims to a high degree of confidence. All projects, regardless of certification status, will go through comprehensive independent review of project documents and underlying scientific studies to assess the extent to which they fulfill our criteria.
3. **Environmental justice.** Avoiding or minimizing economic, environmental, and social harm (including but not limited to continued reliance on fossil fuel energy, deforestation, environmental impact due to mining of raw materials, water consumption, impacts to Indigenous/local rights, or violation of national sovereignty).

If projects do not meet the above prerequisites, they will not be qualified for further consideration. Of the projects that meet the above considerations and our criteria, we will prioritize projects that fulfill one or more of the following criteria:

- **Global CDR potential—**represents a project type that contributes meaningfully to a global carbon removal portfolio, based on peer reviewed science.
- **Affordability—**has a path to affordability at scale.
- **Technology innovation—**uses technology innovation to improve carbon market outcomes (for example, reduces certification cost per $mtCO_2$, democratizes selling/buying opportunities, and/or overcomes other barriers to scale).
- **Co-benefits—**by advancing sustainable livelihoods and environmental justice, building climate resilience, supporting water conservation, and protecting ecosystems and biodiversity.
- **Other sustainability dimensions—**proactively promotes other measurable sustainability objectives (such as water stewardship, waste reduction, biodiversity protection).

Criteria for high quality carbon dioxide removal

In partnership with Carbon Direct, we have developed criteria for high quality carbon dioxide removal for the most common carbon removal project types. These are drawn from our experience since focusing on carbon removal starting in 2020. Please note that not all project types are covered in the criteria, as some project types are too nascent for common specifications. ***Please review these criteria to understand whether your project is a good fit before submitting your proposal***.

Participants

We will consider tonnage from brokers and project developers, including but not limited to for-profit organizations, nongovernmental organizations, international governmental organizations, and other public sector entities. In alignment with Microsoft's Supplier Diversity Program, we seek to include diverse suppliers in the bidding process.

Publication of materials

Microsoft is committed to advancing carbon removal market development by maximizing positive impact and transparency. Participants are advised that, by submitting a response to this procurement effort, Participants are agreeing to the public disclosure of certain information that is contained in their submittal. By submitting a response, Participants accept these terms and waive any privacy rights to submitted information, with exceptions noted below. For more information, please see Microsoft privacy statement, which can be found at this link: https://privacy.microsoft.com/en-us/privacystatement.

Microsoft is aware that certain information may be sensitive or confidential to your organization. With that in mind, the answers to the following questions will **not** be shared publicly unless Microsoft obtains written authorization from Participant allowing such public disclosure:

- All responses to questions marked as "**Confidential**" in the project application.
- All responses to follow-up due diligence questions (provided by invitation, following review of initial project application).
- All attachments other than the Project Design Document.

Through this procurement cycle, Microsoft will collect market intelligence to share broadly to help accelerate the development of a robust carbon dioxide removal market. This includes information from projects that are not selected for the carbon removal procurement cycle. **We will not share attachment files**.

Microsoft will not make specific project-level pricing data public. Microsoft may use aggregate proposal pricing information, with no reference to source, in median, average, and other anonymized analyses. Microsoft may also share the aggregated datasets broadly with the public.

Consistent with our commitment to drive maximal positive impact, transparency, and collective market intelligence in the early years of carbon removal market development, we plan to publish:

- Our criteria for selection.
- The list of projects selected for our carbon removal portfolio.

Note that this commitment to publication strictly pertains to the documents submitted under this procurement process, and **no** other materials shared under pre-existing NDAs with Microsoft or during subsequent due diligence on projects. Applicants should be deliberate about the information they include in proposals—we are unable to address requests to subsequently change language or remove answers within the application portal. You may update answers submitted by emailing mscdr@microsoft.com.