Advance sustainability

CDR Accounting

Transparently structuring corporate claims to reconcile with national goals

Microsoft

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Introduction

Today, voluntary corporate net zero goals play an integral role in driving private-sector purchases of carbon dioxide removals (CDR) and thus developing the market. The issue of how private efforts on carbon dioxide removal should be accounted to integrate with public goals in a complementary and high-integrity manner has attracted commentary recently. As a leading buyer of CDR, Microsoft outlines how corporate and national carbon claims can be structured to co-exist and enable more efficient, wide-scale deployment of CDR capacity.

Corporate CDR buyers need a system that integrates the two sets of claims between legal titleholders like corporations and geographic counts by governments.

Why CDR accounting needs reconciliation

Any path to restricting temperature increases this century to below 2 degrees Celsius will require unprecedented investment, both public and private. Investments need to be directed first and foremost toward carbon reductions, especially the replacement of fossil fuels with carbon-free sources, as well as addressing climate resilience and adaptation, and secondarily toward CDR.

In 2020, Microsoft announced that the company would pursue a moonshot target of becoming carbon negative by 2030, and remove its estimated Scopes 1 and 2 carbon emissions since the company's founding in 1975 by 2050. As we continue to make progress towards 2030 and 2050, we find that global carbon accounting systems are increasingly a stumbling block—if not an outright barrier—for corporations to accelerate investments reflective of the Intergovernmental Panel on Climate Change (IPCC) 1.5°C calculations.

At Microsoft, we believe that transparency around corporate claims on CDR can be improved to enable interoperability with Nationally Determined Contributions (NDCs)

under the Paris Agreement. As outlined in Microsoft's FY23 briefing paper on CDR, we view the national greenhouse gas accountings and the NDCs that feed into international inventories as the definitive way to show progress toward the Paris Agreement. Even still, we see open questions about how private sector CDR claims intersect with those national accounts. Corporate CDR buyers need a system that integrates the two sets of claims between legal titleholders like corporations and geographic counts by governments (that is, parties to the Paris Agreement).

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Microsoft's view: Tie corporate claims to where they occur ↗

We propose that private sector actors incorporate CDR claims into voluntary emissions pledges or claims at a global level (for example, worldwide net-zero rather than country-specific claims) and then report the volumes and national domiciles of any CDR to connect private-sector and national-level claims. If implemented widely, these practices should accelerate the funding and development of CDR projects by clarifying claims and interlinking. We hope this practical, forward-looking position will greatly inform the public discourse and emerging policy treatments at the national level and in the context of Article 6 of the Paris Agreement.

Just as net zero goals pertain to global emissions, companies may purchase CDR in service of such goals from projects all over the world. When a company buys credits, they obtain legal title to those removals, whereas nations report them on a geographic basis. Our recommendation is to transparently report the sources and national domiciles of each credit (which may contribute to a global claim), so that there is a clear linkage between

the corporate inventory and the national accountings for any credit.

This would mimic the same principles of carbon emissions—which can be tallied both at the corporate level (such as a corporation's annual sustainability report) and the national level. For example, a ton of carbon emitted from a corporation's operations in the United Kingdom goes on the company's ledgers and that of the United Kingdom; a ton of carbon dioxide removal procured by a corporation should similarly go on both ledgers. Given the limited amount and proactive nature of carbon removal at this moment, it is both feasible and important to cross-reference where corporate claims fit into national accounting to drive greater transparency on how public and private entities each affect the environment.

If implemented widely, reporting the national domiciles of CDR connects private-sector and national-level claims and should accelerate the funding and development of CDR projects.

Putting it into practice ↗

By taking two recent examples (illustrated following), we can show how such transparent reporting might work in practice.

Example 1: Microsoft forecasts it will get 243,000 tons of carbon removal in 2030 from the Ørsted Asnæs Power Station bioenergy with carbon capture storage (BECCS) project, which is located in Denmark and thereby fits into the Danish national carbon accounting and (potentially) the NDC of the European Union.[1]

Example 2: Microsoft forecasts it will receive 31,500 tons of carbon removal in 2030 from projects that are operated by Heirloom in the United States, so those tons also fit into the US's national accounting and (potentially) its NDC.[2]

[1] "Potentially" here is only meant to acknowledge the uncertainty about what exact CDR capacities may be included in future, updated NDCs.

[2] If Microsoft emissions were subject to (for example) a regulated carbon market in a third country, it currently appears unlikely that it would be able to apply those Danish or US CDR tons to such market unless it secured a Corresponding Adjustment under Article 6 of the Paris Agreement. The specific regulations (such as the rules of a given carbon market) will of course matter considerably. In the meantime, companies with significant direct exposure to carbon markets might do well to seek carbon removals within the geographic extent of the same carbon markets where they anticipate exposure (for example, the EU ETS).

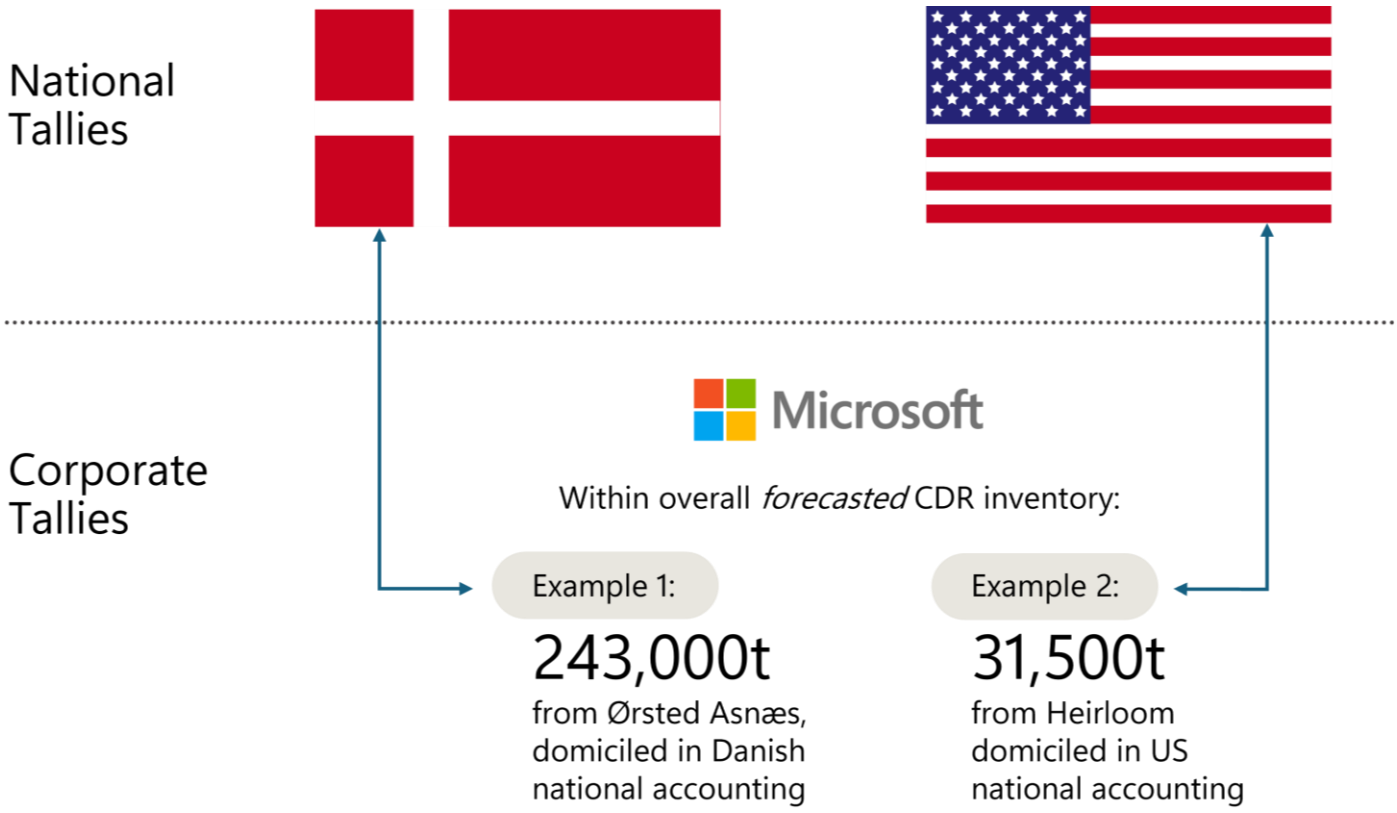

Figure 1: An illustration of transparent CDR reporting in practice

A structure for claims that clearly links the two ledgers would objectively and transparently describe a corporation's actions, such as Microsoft's projects with Ørsted and Heirloom, to produce a measurable climate impact while continuing to respect the international policy frameworks which govern global carbon reporting. Moreover, we believe that comparing emissions and removals on a global basis is the right scale for CDR claims, considering negative emissions' inherent advantage of addressing emissions regardless of their geographic source.

Snapshot: Additionality and government subsidies

To address a related issue—additionality—we observe some debate about whether projects that fit within the technical scope of previously announced national policies or NDCs are additional.[3] Where such projects are neither already required by regulatory fiat, nor fully funded by state budgets, nor fit within existing common practice, then they are additional.

Careful attention must be paid to the level of state support, rather than its simple existence or absence. For example, in the case of the Danish state support for Ørsted's Kalundborg Hub BECCS projects (wherein Microsoft is purchasing removals from the Asnæs Power Station BECCS project), the potential state aid was 6.5 billion Danish kroner (DKK) for 400,000+ tonnes per year for 21 years, which equates to approximately DKK777 or about USD112 per ton.[4] This is far below the current cost to produce a ton of BECCS given the first-of-a-kind nature.

We have strong conviction that—just like Ørsted's Kalundborg project—many efforts require a bankable anchor tenant that can commit to a sizable, long-term offtake such that a project can achieve a final investment decision.

We are always analyzing where there may be practical gaps to the achievement of national policies (including NDCs) and how Microsoft's ambition to be carbon negative might effectively pair with policy ambition around carbon removal.

[3] "Additionality" in carbon markets means that a carbon outcome requires new intervention by a corporate (or other) claimant to produce a better carbon result than in the baseline world. A project is not additional if a corporate claimant is just paying for something that would already have happened.

[4] See Denmark-Copenhagen: Environmental Services 2022/S 111-312435 Contract Notice sections II.1.5 and II.2.4, as amended in 2022/S 128-365765 Notice for Changes or Additional Information. For those who wish to trace the numbers, the finding that Danish VAT (25%) applied to the total tender amount meant that only four-fifths of the full DKK8.1 billion was true subsidy. Conversion to USD uses DKK6.91 to USD1, which was the rate as of 29 March 2024.

Conclusion

Microsoft seeks to further a robust, worldwide carbon removal market that addresses hard-to-abate sectors in the middle of this century and mitigate the worst effects of climate change. Achieving that robust market requires corporations to make clear and global claims of *additional* carbon outcomes. Interlinking the accounting of legal titleholders with geographic ledgers pragmatically integrates corporate and national accounting systems to position CDR in a way that mimics how the world currently inventories greenhouse gas emissions. This approach will provide needed transparency and thus reduce the risk of inappropriate, if even inadvertent, double counting.

As the last 25 years of history suggest, we expect incremental progress in the carbon markets before sweeping reforms, and with that in mind, we must see more calls to action. We look forward to working with governments, companies, and NGOs to develop approaches that advance national and corporate climate goals and enable more efficient, wide-scale deployment of carbon dioxide removal.

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