

Michael Broberg
Klimatenheten
Klimat- och
näringslivsdepartementet

Yttrande angående EUs Klimatmål 2040 och industriell koldioxidförvaltning KN2024/00503

Chalmers har tagit del av rapporterna:

- Towards an ambitious Industrial Carbon Management for the EU - COM(2024) 62

Nedan återfinns Chalmers svar och kommentarer på de ovanstående nämnda rapporterna.

1.1. Sammanfattande kommentarer

- The three pathways defined for industrial carbon management that are referred to in the document and defined in bullet points on page 3 seem to be overlapping. For example, bio-CCS and DACCS area included in both point 1 (CCS from emissions sources of fossil, biogenic or atmospheric origin) and point 2 (Carbon dioxide removal). To avoid ambiguity, it would be better to limit point 1 to the scope of fossil CCS (also in line with the focus of Section 4.2).
- Throughout the document a clear distinction is made between fossil and biogenic CO₂ sources, and the strategy almost completely fails to note the existence of mixed CO₂ streams (e.g in Figure 2 where one emission source could contain at the same time process emissions, fossil emissions and biogenic emissions) and the associated challenges. Considering the vision of a circular economy, where most of the carbon will be recycled in one way or another, the distinction between fossil and biogenic carbon atoms is likely to be increasingly more difficult, but also less relevant to make.

1.2. Betänkandet som helhet

- The title appears misleading; this should have been called a CO₂ management strategy, not a carbon management strategy, as it does not cover carbon-containing flows in general.

1.3. Kommentarer på specifika kapitel i betänkandet

1.3.1. In the last paragraph of page 3, it is claimed that "CO₂ transport infrastructure is the key enabler common to all pathways". This is, however, not necessarily the case for DACCS, which can (and probably should) be located near the storage injection site. For CCU, the captured CO₂ could potentially be used on-site, meaning that CO₂ transport is not necessarily a key enabler in that case either.

1.3.2. In the list of challenges, p. 6., the following additions are proposed:

- Lack of clear allocation rules for reporting captured CO₂ within EU ETS, when the CO₂ is captured from a source with mixed emissions (of both fossil and biogenic origin).
- Lack of clear and fit-for-purpose reporting guidelines for negative emissions in national GHG inventories to allow for clear CDR accounting and targets, while avoiding that carbon removal activities replace the necessary reductions of fossil emissions.
- Uncertainties related to the development of and regulations around voluntary and compliance markets for Carbon Removals and thereby the market value of Carbon Removals.

The last point includes, amongst other things, the need for clearer guidelines not only on the issuing of carbon removal credits (being developed under the CRCF), but also the use of credits in climate accounting. The uncertainty described in the last point is also highlighted by the fact that foreseen actions related to incentives and policy instruments for carbon removals (as proposed in Section 4.3) are still only at the stage of assessing potential options.

1.3.3. In Section 4.4 it is acknowledged that additional measures are needed to promote CCU for the chemical sector. Here it should also be noted that for such measures to be effective, they need to be strong enough for the chemical industry to be able to compete for the

sustainable carbon from captured CO₂ against the already incentivized producers of maritime and aviation e-fuels (while also ensuring that the price incentives accurately reflect the climate benefit across the value chain). It should also be recognized that the chemical industry, to a significantly larger extent than fuel producers, competes on a global market, with the challenges that brings.

1.3.4. The need for assessment of EU ETS accounting system discussed in Section 4.4 should also include issues related to allocation of fossil and biogenic shares of emissions for sites with capture from mixed emissions, in particular for multi-stack, multi-purpose (CCU, CDR/CCS) capture sites.

1.3.5. Section 5.1 focuses on investment needs, while support is likely to be needed also to cover operational costs, at least in the short term, and especially for CDR projects where there is still no clear market price for the carbon removals. While it is discussed that the carbon price signal in the EU ETS will be key to make CCS projects viable, such price signals in carbon removal markets (voluntary or compliance) will be a key enabler for CDR projects. Similarly, price signals for climate neutral products (or similar) in chemicals, materials and fuel markets may be necessary to help make CCU projects viable.

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A handwritten signature in blue ink that reads 'Mamino Bongiorno'.