

Feedback on the Industrial carbon management consultation

Bioenergia ry - the Bioenergy Association of Finland strongly supports the Commission's initiative to define the role and the measures needed to optimize the potential of the carbon capture, utilisation and storage (CCUS) technologies in the EU's climate policy. Managing CO₂ emissions at scale with different solutions is essential to meeting the climate targets effectively. According to the IPCC, carbon dioxide removal is an essential element of scenarios that limit warming to 1,5 degrees or below 2 degrees. Strong political backing together with efficient policy measures are needed to bring up this new industry while continuing parallel determined efforts to reduce greenhouse gas emissions. It is evident that we – also in the EU, but in particularly globally - need large amounts of industrial, reliable carbon removals and carbon reuse in order to reach climate neutrality and the Commission should clearly support the uptake of industrial carbon removals, CCS and CCU solutions.

When designing the architecture of the incentives for CCUS solutions, there must be a hierarchy between carbon removal solutions, fossil CCS and CCU solutions. Development of structured incentives for negative emissions should be prioritized. There are currently no incentives, although the need specifically for technological removals is significant. CCU and fossil CCS solutions are also needed, considering the need for CO₂ in industry and, on the other hand, the need to stop fossil emissions completely. Carbon capture and utilisation for short-lived products can be an interesting path alongside carbon removals, if it supports circular economy and the production of fuels, chemicals, and materials from sustainable carbon sources, and thus reduces the dependency on fossil raw materials. The difference of biogenic and fossil CO₂ should be clearly identified, and it must be acknowledged that fossil CCS can only lead to emissions reductions whereas solutions storing biogenic CO₂ have the potential to provide genuine carbon removals. In Finland, all of the current plans for projects with carbon capture are utilization projects since there is a value for the CO₂ as a product. In order to have projects where the biogenic CO₂ is permanently stored (e.g. BECCS-projects), there has to be a reward for the negative emissions created.

The industrial carbon removal methods with the most mature Technological Readiness Levels (TRL) and best cost efficiency should be prioritized in the uptake of the industry. It is important to continue research and development of new ways of creating carbon removals, but we should first start deploying the solutions that can already be deployed. Bioenergy and carbon capture and storage (BECCS) and biochar carbon removal (BCR) based on sustainable biomass sources are the most cost-efficient negative emissions technologies with the most mature TRLs and thus the most potential solutions to provide negative emissions at scale already by the end of this decade. According to the European Scientific Advisory Board on Climate Change, BECCS plays a key role in delivering technological carbon removals at scale, as mentioned in their advice on the EU's 2040 target published in mid-June. In all the ESABCC's pathways, technological carbon removal solutions are required to reach climate neutrality. The amount of carbon removals needed through BECCS is 9-46 MtCO₂ already by 2030, which is far more than the Commission's aspirational goal of 5 MtCO₂ for all technological carbon removals by 2030. Looking further, by 2040 the range needed for BECCS is substantial, 46-207 Mt CO₂, and by 2050 the range is 70-336 Mt CO₂. Estimated potential for biogenic carbon removals in Europe

with the current biomass use is ca 200-300 MtCO₂ based on literature (eg. Rosa et al, 2021) and the inaction delays the cumulative removals and increases the costs of climate actions by the end of the century (eg. Galan-Martin et.al, 2021). Considering the clear need for BECCS projects and, for example, the very recently agreed RED3 legislation thoroughly addressing sustainability of bioenergy, it is astonishing that BECCS is singled out regarding its potential environment risks in question no. 20 in the Commission's public consultation. All the carbon removal methods (both natural or industrial) have advantages and risks. However, addressing one potentially crucial solution with this discriminatory attitude without taking into account other parallel EU legislation, is not providing the level playing field needed to boost the development and deployment. As the ESABCC mentioned in their report in June, these solutions, especially BECCS, are indispensable for our climate targets and that the emphasis needs to be on mitigating the potential risks whilst supporting the deployment. Another unfortunate misrepresentation related to BECCS was in the question no. 3 regarding the role of CCS which refers to power-only generation from sustainable biomass. Most biopower in Europe is generated in combined heat and power (CHP) plants and thus the validity of the results is questionable.

Regarding the deployment of industrial carbon removals, the most significant challenges are the absence of a market, the absence of infrastructure and access to storage sites, high operating costs and missing enabling legislation and international agreements, e.g. regarding the transport of carbon dioxide. Greater ambition in promoting these solutions is urgently needed in order to reach the necessary scale fast enough. There is currently no incentive/market framework/business model for providing technological carbon removals, besides the EU Innovation Fund and, to some extent, the Voluntary Carbon Market. The development of support schemes, such as Carbon Contracts for Difference, will also be needed. It is also important that the integration of the technological removals in EU's existing and forthcoming climate policy pillars is considered in 2026 as suggested by the Commission. Without a sufficient reward for the removal activities, it is difficult to see any large-scale investment taking place, despite the unequivocal need. In order to create a well-functioning market framework for these solutions, it needs to be ensured that the market is built at the EU level compared to having a fragmented market with several different national level support schemes or markets.

Industrial carbon removals also need technology-specific eligibility rules that adequately safeguard and take into account different levels of permanence of the removed carbon and specify which kinds of processes deliver scientifically sound and societally desirable carbon removals.

CO₂ transport networks and infrastructure are a vital component in the promotion of these solutions. Transport hubs and cross-border transport networks are required, and they are especially important for countries where there is no possibility for permanent geological storage in their own territory. It is essential to have access to the logistics and the storage ecosystem in all parts of the EU. The storage capacity needs to be ensured for all interested operators and addressed at the EU level. The current regulation does not provide sufficient detail on important regulatory elements for CO₂ transport, especially related to cross-border transport of CO₂. More guidance is needed in order to ensure common guidelines amongst the Member States and operators. Risk sharing mechanisms

should also be addressed. Regarding the infrastructure, there is a great potential for synergies in planning and developing of hydrogen and CO2 networks and infrastructure together. Working on the two solutions at once could cut the cost and ease permitting processes for both sectors.

At the same time, market conditions need to be ensured for the use of CO2 and for the solutions storing CO2 in products.

European actors are at the forefront of development of technologies for carbon removals and we have deep technical expertise in this field. However, the EU is not moving forward fast enough. United States recently announced over 1,2 billion USD investment for the scaling up of the carbon removal industry. If the EU wants to position itself in the front row of carbon management and removals, the EU urgently needs a clear view forward in terms of policy and incentives in order to provide a strong signal to the industry. It is crucial that the European Commission provides a clear strategy and a roadmap supporting the wider uptake of these technologies as part of the Communication on its strategic vision for the deployment of CCUS in the EU expected later this year. Now is the time to move forward with advanced policy framework to support the development of this sector. The governance model of carbon removals in the broader context of the EU climate policy needs to be clarified parallel to the process of setting the EU's 2040 target. Carbon removal development should be further established to the processes of national renewable energy action plans (NREAP) between the Commission and Member States, too.

Bio-based carbon removal solutions provide reliable, renewable energy, support intermittent energy production, and do not require high additional energy input. These solutions, when developed and deployed in a responsible manner, will not only provide the carbon removals essential to our climate targets, but also create new jobs and improve competitiveness of the European net-zero economy.