



Carbon Lockdown Project Benefit LLC

8408 Galveston Rd
Silver Spring, MD 20910, USA
bryce@carbonlockdown.net
<http://carbonlockdown.net>

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Dear Supervisory Body:

Thank you for the opportunity to respond to this critical work of defining Removal activities under the Article 6.4 mechanism.

At Carbon Lockdown Project (CLP), our mission is to develop and support reliable carbon sequestration technologies that benefit climate and sustainability. In particular, we specialize in Wood Harvesting and Storage (WHS) with Wood Vault (WV). The essence of WHS can be summarized as a 'reverse coal extraction' process. CO₂ is captured by trees via photosynthesis for 'free'. Wood is buried in specially engineered 'vault' in a shallow geological layer below the active biosphere, ensuring anoxic (oxygen-depleted) condition to prevent wood decomposition with 1000+yr durability ([Zeng and Hausmann 2022](#)). WHS produces a continual stream of sequestered carbon that is durable, easy to monitor and verify. Wood vaults combine the advantages of engineering and nature-based methods, while avoiding or minimizing their disadvantages. Wood Vault co-benefits include: beneficial valorization of unmerchantable woody biomass residues from fire thinning and other forest management; mine reclamation; creation of good green jobs and support for rural development.

My input concerns two questions, highlighted in red.

Questions on specific elements A. Definitions

1) I think there is the need for a method-neutral criteria-based definition of CDR. Criteria such as durability, rather than nature vs engineering etc is more meaningful for climate impact. Below I use Wood Harvesting and Storage as an example, which does not fall into traditional categorization. This issue has been discussed succinctly in the [Carbon Business Council issue brief](#).

2) I'd further advocate using the term Carbon Removal and Storage (CRS) in place of Carbon Dioxide Removal (CDR). I give the example of BiCRS (Biomass Carbon Removal and Storage; [Sandalow et al., 2021](#)). This is a term that only appeared recently but has the advantage of including **both Removal and Storage**. Without durable storage, removal has little impact on the worst climate change that is yet to come.

Cross-cutting questions:

1. Discuss the role of removals activities and this guidance in supporting the aim of balancing emissions with removals through mid-century.

The 1.5C report of IPCC (2018) calls for 6 GtCO₂/y of removal by 2050. While renewable energy is well on its way to replace fossil fuels, there is no clear engineered CDR pathway that can realistically reach the scale required by the IPCC scenarios. Because the large-capacity of photosynthesis (terrestrial

NPP each year is 6 times current fossil fuel emissions rate), hybrid nature-engineering method like WHS may offer the most scalable route. WHS does not require unknown technology. WHS uses well established engineering practices (transportation, construction) and ‘can be easily applied’ ([National Academy of Sciences, 2019](#)). It can be scaled to mega-ton in the next few years, and giga-ton in the 2030s.

WHS has highest potential in the Global South, for example South America, African and SE Asia ([Zeng et al., 2013](#)).

Several entities are now carrying out Wood Vault projects, including [Carbon Lockdown](#), Kodama, and InterEarth. I urge you to take a closer look into this relatively novel but promising pathway.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ning Zeng', with a stylized flourish at the end.

Ning Zeng
Co-Founder and Head of Science
Carbon Lockdown
<http://carbonlockdown.net>
<https://www.linkedin.com/in/ning-zeng-52869811/>