

## Climate Robotics Comments on

### Climate Action Reserve Biochar Project Protocol v1.0

1. Eligible Biochar Feedstocks List. “Documentation that no more than 30% of residues have been removed from the feedstock site. Retention of significant residue amounts is required to maintain soil organic carbon and productivity of the site”
  - a. This requirement as stated with no exceptions possible for additional data qualifying for higher percentage of residue removal could dramatically limit the sustainable use of crop residue biomass for CDR and in some cases could endanger the economics of utilizing these residues at all. This is not to say soil organic carbon and productivity should not be maintained or improved. This is in fact often the primary goal of applying biochar to soil as CAR will be well acquainted with this research. With scientific estimates on the appropriate percentage of crop residue removal to be sustainable varying widely from 30% to 70% residue removal (typically concerned with biofuels, i.e., without reapplication of the biomass to the soil in any form) (<https://doi.org/10.1111/gcbb.12774>, <https://doi.org/10.1002/agi2.20724>), currently existing methodologies have set significantly higher percentage residue removal maximums in the absence of additional supporting data of sustainable use (50% for [Verra VCS](#) and 70% for [Puro.earth](#)).
  - b. Given the massive implication of this value to the potential of both biochar CDR scaling and building soil health, and the scientific complexity around what is sustainable for a particular situation (practices, history, land, climate, etc.) we propose both:
    - i. That a higher maximum residue removal percentage be set explicitly for biomass that is returned as biochar to the same soil it was taken from with appropriate proof of this, and
    - ii. That exceptions should be made above 30% residue removal when there is additional scientific data provided or when a robust MRV and adaptation plan to ensure soil health is maintained is provided.
  - c. Note that for references to NRCS Code 336, this document currently states: “Do not apply amendments: Produced from crop residues that could otherwise provide soil protection and improve soil health (e.g., stover or straw).” Until this code explicitly clarified in relation to biochar production of crop residue, we suggest this is clarified in the protocol.
2. Section 2.3 Project Developer
  - a. In practice, across certified biochar projects all over the world, biochar producers are acting as project developers, in particular, situations where the end users are farmers. Arguably this is because biochar producers are best situated in practice to ensure eligibility, MRV, data quality, agreements, logistics, etc. at each stage of the carbon removal process.
  - b. Further as stated, “...the project developer is assumed to be the end user of the biochar since they are the entity responsible for providing for the long-term persistence of the

carbon sequestered in the biochar and, thus, the permanence of the credits being issued.” If the biochar producer is finally responsible for quality metrics of the biochar material and soil application and integration or mixing with compost, etc., then the applied biochar carbon removal has virtually zero physical risk of reversal, giving support to the argument that biochar producer is in fact the entity responsible for long-term persistence of the carbon sequestered.

- c. Therefore, we recommend the default of the biochar producer as the project developer. It is unclear if a different default would cause additional difficulties or not since end-users are attesting to end-use already, but given the CAR proposed default would be different than what happens today typically, there may be legal or other unforeseen difficulties that could create unnecessary friction in biochar carbon removal efforts.