

Out-of-scope approaches

This table is not meant to be exhaustive, but based on our learnings thus far, we do not consider the following CDR approaches in scope for Frontier at this time:

Out-of-scope approach	Rationale
Afforestation and reforestation	Unable to meet Frontier's 1,000 year durability threshold. Forests, soils, and coastal ecosystems may be subject to natural disasters, development, disease, or other disruptions that could release stored carbon within a 1,000 year timeframe, and no regulatory regime currently exists to ensure their survival over such timescales.
Coastal restoration (blue carbon)	
Organic soil carbon	
Biogas + CCS	Biogas + CCS systems are highly susceptible to leaks, and even a small amount of methane leakage from intentionally-produced biogas could result in CO ₂ e that is comparable to the amount of CO ₂ captured and stored, which wouldn't have existed otherwise.
Ethanol + CCS	Dedicated energy crops to produce ethanol compete with arable land that could be used for food production, which runs counter to our biomass sourcing principles.
Shallow biomass burial	Frontier supports several companies accelerating research across these approaches. However, given their ongoing work, particularly to address questions around reversal from site disturbance (burial) and durability (sinking), further purchases are not a priority for this RFP.
Terrestrial biomass sinking	
Biochar	While certain treatment methods can produce char that meet our durability criteria, we are prioritizing other BiCRS approaches with higher CDR efficiency.
Biotic marine CDR	<p>There are open questions around the ability of micro- and macroalgae capture approaches to meet Frontier's scale and durability criteria while minimizing impacts to ocean ecosystems.</p> <p>Note: Biotic mechanisms that result in abiotic storage (e.g., biomineralization) remain <u>in-scope</u>.</p>
Storage partners without a capture partner	Novel, high durability storage solutions are critical to scale CDR across diverse geographies, but we are looking for projects that are coupled with capture in an "end-to-end" system. We will not consider storage-only applications this cycle.