

## Annex 1: Greenhouse gas removal (CDR) technologies

Nature Based Solutions	Applicability to Oxfordshire
<p><b>Afforestation and Reforestation:</b></p> <ul style="list-style-type: none"> <li>Planting trees and restoring forests to absorb carbon dioxide (CO<sub>2</sub>).</li> <li>Trees sequester carbon through photosynthesis.</li> </ul>	<p><b>Highly applicable</b></p>
<p><b>Biochar:</b></p> <ul style="list-style-type: none"> <li>Heating organic matter to high temperatures in a low oxygen environment produces a crystalline form of carbon that is added to soil and persists for hundreds of years.</li> <li>Enhances soil's ability to store carbon.</li> <li>Increases soil fertility, drought and flood resilience</li> </ul>	<p><b>Highly applicable</b></p>
<p><b>Soil Carbon Sequestration</b></p> <ul style="list-style-type: none"> <li>Practices like no-till farming and adding biochar improve soil carbon content.</li> </ul>	<p><b>Highly applicable</b></p>
<p><b>Ocean Fertilization/ Coastal Blue Carbon:</b></p>	<p><b>Not applicable to Oxfordshire</b></p>
<p><b>Engineered solutions</b></p>	
<p><b>Bioenergy with Carbon Capture and Storage (BECCS):</b></p> <ul style="list-style-type: none"> <li>Combines bioenergy (e.g., burning biomass) with capturing and storing CO<sub>2</sub> emissions.</li> <li>Biomass absorbs CO<sub>2</sub> during growth, and BECCS prevents its release.</li> </ul>	<p><b>Some applicability</b> however it is likely to have an unsustainable land take.</p> <p>Storage facilities are national infrastructure - likely located in the Northeast, Requires development of national transportation and storage network for CO<sub>2</sub></p>
<p><b>Enhanced Weathering</b></p> <ul style="list-style-type: none"> <li>Crushed silicate rock (Basalt, Olivine) is spread on fields. The CO<sub>2</sub> dissolved in rainfall reacts with the rock, dissolving it, producing bicarbonate which eventually leaches into rivers and the oceans</li> </ul>	<p><b>Low/some applicability.</b></p> <p>Basalt not prevalent in Oxfordshire and would therefore require transport of rock and associated carbon /cost burden. Work needed to understand carbon balance of benefit</p>
<p><b>Direct Air Capture and Storage (DACCS):</b></p> <ul style="list-style-type: none"> <li>Captures CO<sub>2</sub> directly from ambient air using specialized technology.</li> <li>The captured CO<sub>2</sub> can be stored underground.</li> </ul>	<p><b>Low applicability.</b></p> <p>As BECCs re storage and transportation facilities</p>