



## Treatment of negative emissions within embedded emissions accounting

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An embedded emissions framework (EEF) capable of including negative emissions services (NES) as an accounting product should provide information on the key attributes listed below:

- The **GHG type, quantity, and date of removal**. GHGs have variations in warming potential, time in atmosphere before decay, and cumulative effects. The cooling potential of a removal is not always equivalent to the warming effect of an emission.
- The **method of extraction or capture**. In some cases, the extraction or capture method also sequesters the GHG (as in tree growth). In others, extraction or capture is a separate step (as in direct air capture or capture at smokestack). This is necessary to understand costs and net system effects.
- The **type of sequestration**. This is necessary to understand the timescale on which the GHG is removed from the atmosphere, i.e., the duration of storage.
- The **location of sequestration**. This is necessary to understand the risk of unintended storage reversals, such as a bush fire releasing biologically stored carbon.
- The **type of utilisation**. As with the type of sequestration, this is necessary to understand the longevity of storage associated with that utilisation technology or approach. Types of utilisation should only be added as EEF accounting products only if that utilisation is covered by a carbon pricing mechanism. Otherwise, utilisation should be treated solely as sequestration equivalent, with all appropriate implications for storage duration.

Recording attributes of the sequestration or utilisation will be critical to ensuring that only plausible, high-quality, and verifiable storage methods are included within any downstream use of EEF accounting products in offsetting schemes – an approach falling short of this risks adverse outcomes in the form of hidden or even increased emissions.

Further, treatment of carbon utilisation within the EEF must comply with both DCCEEW's principles for GO development and with ANU's draft principles for public EEF design. In particular, it must:

1. Avoid double counting or perverse incentives (consistent with principles of monotonicity and accuracy)
2. Achieve maximum flexibility, conditional upon avoiding double counting or perverse incentives *and* complying with other principles of EEF design (this flexibility is necessary in order to allow producers to benefit from the highest available carbon price and thus to incentivise maximum GHG mitigation).
3. Have logical consistency across a range of products (this is important to avoid "unfair" rules or opportunities for gaming or greenwashing). This includes consistent treatment of long-term utilisation and storage.