Reviewing life cycle assessments of carbon capture and utilisation – unclear goals lead to unclear results

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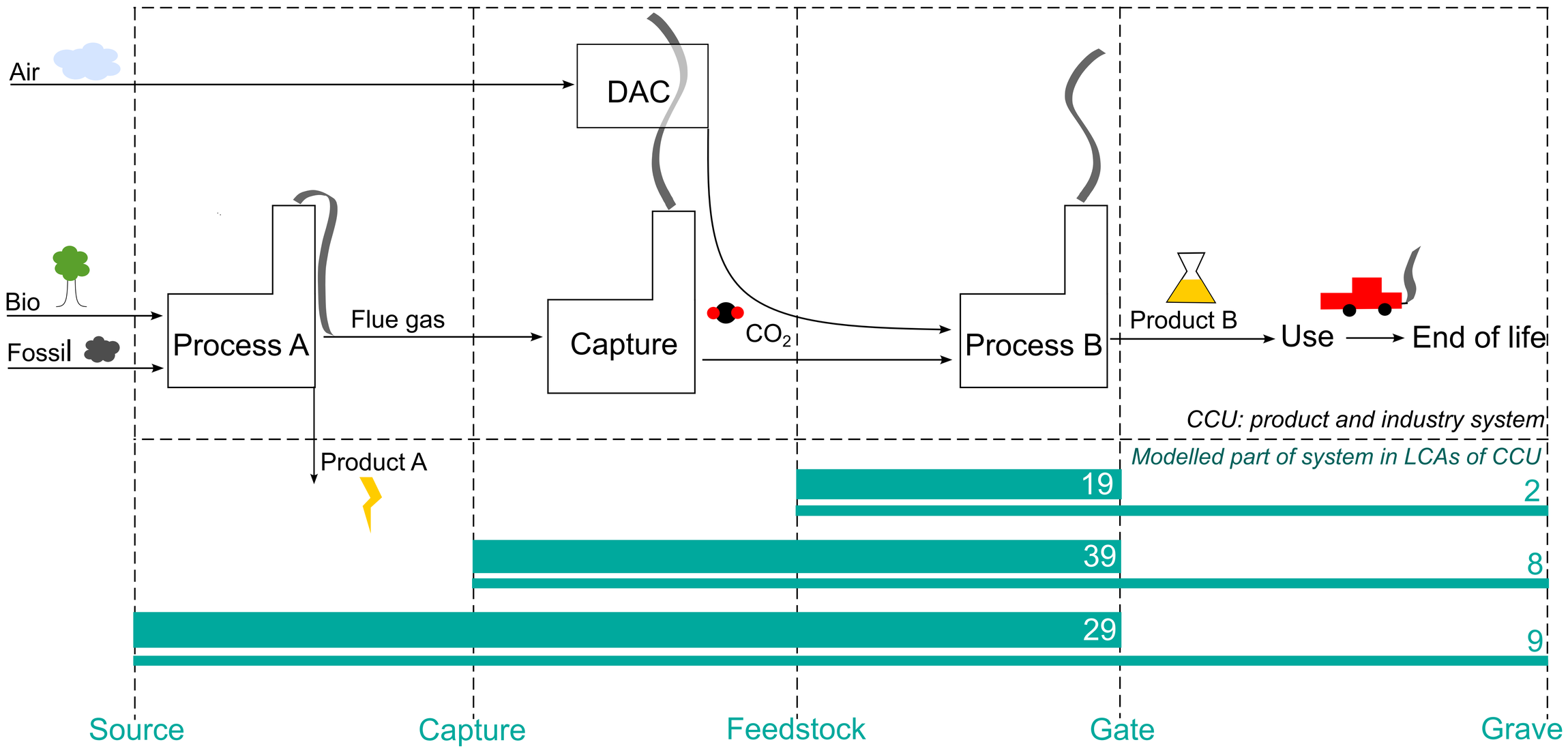
106 articles with LCA of CCUs were reviewed. These had very different scopes (length of green lines below). The numbers indicate the number of studies with a particular scope. How come these LCAs have so different scopes?



Goals

In 2/3 of the reviewed papers the goal of the LCA could not be identified. In the remaining papers, the goals were sweeping and vague.

Scopes

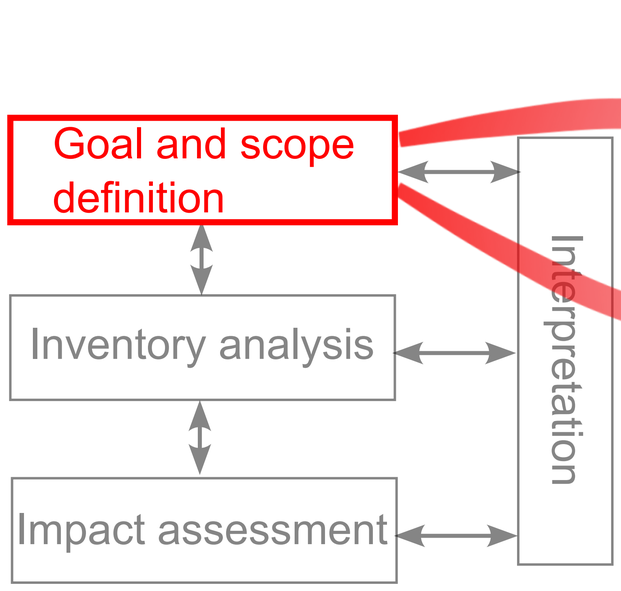
The "cradles" in the reviewed LCAs are very diverse. Also, for any given scope, the purpose of the studies seem to differ greatly.

Guidelines

There are a handful of guidelines for LCA of CCU. However, very few articles refer to them.

What is CCU?

Carbon Capture and Utilisation (CCU) is the process of capturing CO_2 and utilising it to produce a product. It is one way to replace fossil feedstock in chemical processes and a potential pathway to mitigating CO_2 emissions from industry.



A need for

1. better guidelines

2. better explained goal and scopes (in studies)

What would it take for you to trust such studies to deliver on climate targets?

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