

**Abstract for Nils Rettenmaier's presentation** at the 7<sup>th</sup> Conference on Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers, Cologne, Germany, 20 – 21 March 2019

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Title: Scientifically Sound Life Cycle Assessments for CCU Technologies: Towards a Realistic Picture of the Environmental Impacts

Proponents of Carbon Capture and Utilisation (CCU) associate great expectations with this emerging technology, especially in terms of its climate change mitigation potential. Critics, however, point to the high electricity demand of CCU, which must entirely come from renewable sources in order to achieve greenhouse gas emission savings. In this debate, life cycle assessment (LCA) – a powerful tool which is able to quantify the potential environmental impacts of any product – is increasingly used to provide scientific answers to burning questions.

ifeu has conducted LCAs of CO<sub>2</sub>-utilising algae biorefineries in two completed EU-funded projects and is currently preparing to do the same in the EU-funded project [eForFuel](#) (Fuels from CO<sub>2</sub> and Electricity). These projects will be briefly introduced and selected results will be shown. The presenter, who is a member of the expert group on LCA4CCU at DG ENER, will discuss some key challenges when conducting LCAs for CCU products and touch upon current efforts to harmonise / standardise LCA methodology for CCU.