

MCC Press Release

Be careful when betting on negative emissions

Industrial-scale use of BECCS technology would be required to meet the 2-degree target

Berlin, 21 September 2014 – The 2-degree target of international climate policy may be harder to achieve than previously thought. This emerges from the analysis “Betting on Negative Emissions,” written by the lead author Sabine Fuss from the Mercator Research Institute on Global Commons and Climate Change (MCC) and published in the renowned journal *Nature Climate Change* shortly before the start of the United Nations Climate Change Conference in New York.

According to the research, of all the “2-degree scenarios” examined by the IPCC, some 85 percent assume the use of technologies such as Bioenergy with Carbon Capture and Storage. BECCS, which involves the combination of bioenergy and the capture and storage of CO₂ (CCS) to remove CO₂ from the atmosphere, is still largely unexplored. The new study, building on the work of the IPCC, shows to what extent these scenarios are counting on the actual use of BECCS: more than two thirds of the scenarios presume that the share of BECCS in the primary energy supply would be more than 20 percent by the year 2100.

“We’re relying on an approach that involves considerable uncertainties. Because, at present BECCS is still in its infancy,” says Fuss, head of the MCC working group Resources and International Trade and member of the Steering Committee of the Global Carbon Project. “It’s not too late to achieve the 2-degree target. However, in order to get clarity about the opportunities and risks of negative emissions, and to allow for the application of this technology at an industrial scale, we must, among other tasks, get pilot projects underway.”

In the most recent IPCC’s working group three report, the Panel showed how humankind could mitigate climate change. It also warned that all technological options should be put on the table. In the above-mentioned commentary in *Nature Climate Change*, the authors identify the risks and discuss four main obstacles that stand in the way of the extensive BECCS use: One, we must find safe geological storage sites as well as sustainable biomass supply that would not compete with other objectives such as food production. Two, the still unexplored technology will incur high cost. Three, so far, public acceptance has been lacking. And four, the use of BECCS has reciprocal effects on global commons such as the oceans that are yet to be explored. “CO₂ removal will be expensive and contentious, whereas emissions will remain cheap in the absence of strong climate policies,” according to Fuss and her colleagues from a number of prestigious research institutions. “Therefore, any CO₂ removal strategy requires an extraordinary global regulatory framework taking into account national economic conditions.”

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Scientists from the Global Carbon Project call for technology research in order to provide policy makers with the tools to better assess risks and uncertainties: “Determining how safe it is to bet on negative emissions in the second half of this century to avoid dangerous climate change should be among our top priorities.”

About the MCC

The MCC explores sustainable management and the use of common goods such as global environmental systems and social infrastructures in the context of climate change. Five working groups conduct research on the topics of economic growth and development, resources and international trade, cities and infrastructure, governance and scientific policy advice. The MCC was jointly founded by the Mercator Foundation and the Potsdam Institute for Climate Impact Research (PIK). Currently, the Institute employs 35 scientists.

This media release is part of the Global Carbon Budget 2014 of the Global Carbon Project, based on four analyses published on 21 September 2014, 6:00 pm UK time.

- Le Quéré et al. (2014) Global Carbon Budget 2014. *Earth System Science Data Discussions* (manuscript in discussions), <http://dx.doi.org/10.5194/essdd-7-521-2014>
- Friedlingstein et al. (2014) Persistent growth of CO₂ emissions and implications for reaching climate targets. *Nature Geoscience*, <http://dx.doi.org/10.1038/ngeo2248>
- Raupach et al. (2014) Sharing a quota on cumulative carbon emissions. *Nature Climate Change*, <http://www.nature.com/doi/10.1038/nclimate2384>
- Fuss et al. (2014) Betting on Negative Emissions. *Nature Climate Change* (commentary)

Access:

- Data and figures: <http://www.globalcarbonproject.org/carbonbudget>
- Data interface for exploring data: <http://www.globalcarbonatlas.org>
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