Call for Abstracts: The Role of Negative Emission Technologies in Addressing Our Climate Goals

Deadline: 1. March 2019

"It is clear that Negative Emission Technologies (NETs) can never be a wholesale replacement for reducing emissions but may be useful in displacing some energy/emission intensive sectors. It is unlikely that a single NETs proposal can be scaled sufficiently to meet this demand, and a portfolio of approaches may be more feasible. The primary removal methods of focus in this research topic of Frontiers in Climate will include all negative emissions strategies that directly mitigate climate change."

[LINK](Read more » Call for Abstracts: The Role of Negative Emission Technologies in Addressing Our Climate Goals)
Adánez-Rubio, I.; et al. (2019): Chemical looping with oxygen uncoupling. An advanced biomass combustion technology to avoid CO2 emissions


"Bioenergy with carbon dioxide (CO₂) capture and storage (BECCS) technologies represent an interesting option to reach negative carbon emissions, which implies the removal of CO₂ already emitted to the atmosphere. Chemical looping combustion (CLC) with biomass can be considered as a promising BECCS technology since CLC has low cost and energy penalty. In CLC, the oxygen needed for combustion is supplied by a solid oxygen carrier circulating between the fuel and air reactors."

Read more » Adánez-Rubio, I.; et al. (2019): Chemical looping with oxygen uncoupling. An advanced biomass combustion technology to avoid CO2 emissions
Chemistryworld: Biomass carbon capture pilot points to a new sector whose time has come

"The Drax power station in North Yorkshire is in the final stages of commissioning Europe's first trial of negative emissions technology. The demonstrator will capture carbon dioxide generated by burning biomass using a novel solvent developed by C-Capture, a spin-out from Leeds University. It follows successful laboratory tests, and the pilot project aims to trap one tonne of carbon dioxide a day with a capture rate of 90%.

LINK

Read more » Chemistryworld: Biomass carbon capture pilot points to a new sector whose time has come

21.01.2019

# New Publications

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"This chapter gives a brief overview of the emergence of the idea of negative emissions technologies and solar radiation management technologies in climate change policy and the normative issues—that they might raise. Normative issues fall into four broad categories: (1) distributive justice, (2) procedural justice, (3) ethical issues, and (4) rectificatory justice."


21.01.2019

# New Publications

0 Comments

May, M.; et al. (2019): ESD Ideas. Photoelectrochemical carbon removal as negative emission technology

"The pace of the transition to a low-carbon economy – especially in the fuels sector – is not high enough to achieve the 2°C target limit for global warming by only cutting emissions. Most political roadmaps to tackle global warming implicitly rely on the timely availability of mature negative emission technologies, which actively invest energy to remove CO₂ from the atmosphere and store it permanently."

Kolosz, B.; et al. (2019): CASPER. A modelling framework to link mineral carbonation with the turnover of organic matter in soil.

"Rapid formation of stable soil carbonates offers a potential biologically-mediated strategy for removing atmospheric CO₂ and forms a part of the negative emissions debate in a bid to maintain global temperatures of 1.5 °C. Microbial respiration in soil and respiration by plant roots leads to high partial..."
pressure of CO\textsubscript{2} below ground. Given adequate supply of calcium in soil solution the sequestration of C into the mineral calcite (CaCO\textsubscript{3}) can occur at rapid rates. We have coupled an established soil C model RothC to a simplified geochemical model so that this strategy can be explored and assessed by simulation.

Read more » Kolosz, B.; et al. (2019): CASPER. A modelling framework to link mineral carbonation with the turnover of organic matter in soil

Reynolds, J. (2018): The politics and governance of negative emissions technologies


"It is well known that the Paris Agreement aims to keep climate change – perhaps the greatest current challenge to global sustainability – to within 2 °C of warming, and to strive for 1.5 °C. Many people point toward the scenarios used by the Intergovernmental Panel on Climate Change (IPCC) and conclude that this is feasible if only our leaders had the political will to do what's necessary. However, it is less widely known that these scenarios assume the use of technologies to remove carbon dioxide from the atmosphere at very large scales."
The United Nations, in the IPCC Special Report on Global Warming of 1.5°C has accepted that there isn’t any obvious pathway to zero emissions in such a short time frame, so they have pegged their hopes on NETs – Negative Emissions Technologies. These approaches include carbon capture and storage (CCS), which involves sucking CO₂ from the air and storing it deep underground.
ANU TV: 2018 Negative Emissions Conference (Videos)

"Earth is warming at an unprecedented rate due to anthropogenic carbon dioxide emissions. This was recognised at the 2015 Paris Climate Convention (COP21) in 2015 who agreed to limit warming at 2°C or less. Emission reductions are essential to help mitigate further warming, but we are already likely to exceed this 2°C warming. In response, COP21 recognised that some form of ‘negative emissions’ is required to stay within the 2°C warming target."

LINK

Read more » ANU TV: 2018 Negative Emissions Conference (Videos)
idw: COP24: Acute pressure to act despite expansion of CO2 budget (German)

German article on CE.

LINK

Read more » idw: COP24: Acute pressure to act despite expansion of CO2 budget (German)