

BLOGG

The policy vision to keep below 2°C warming

SKREVET AV

**Glen Peters**

The science shows that the Paris Agreement requires removing carbon dioxide from the atmosphere at scale. We suggest a three-point plan for governments to make progress.

o 17. august 2017

The mitigation challenge to keep below 2°C warming is immense, yet policy makers show no sign of incentivising business to research, develop and deploy the required technologies.

SPRE KUNNSKAP - DEL DENNE ARTIKKELEN!

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Photo opportunities with wind turbines and solar panels abound, but the science shows that the Paris Agreement requires removing carbon dioxide from the atmosphere at scale. Yet, carbon dioxide removal is something governments don't seem to want to talk about.

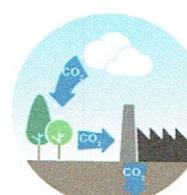
In a commentary published in Nature Climate Change, Oliver Geden and I suggest a three-point plan for governments to make progress on carbon dioxide removal.

In the 2015 Paris Agreement, governments not only agreed to limit the temperature increase to «well below 2°C», but they also agreed to reach net zero emissions in the second half of the century.

The scientific consensus is that achieving zero emissions sets our sights too low, we need to produce negative emissions by removing carbon dioxide from the atmosphere.

**Afforestation and reforestation**

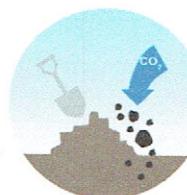
Additional trees are planted, capturing CO₂ from the atmosphere as they grow. The CO₂ is then stored in living biomass.

**Bioenergy with carbon capture and sequestration (BECCS)**

Plants turn CO₂ into biomass, which is then combusted in power plants, a process that is ideally CO₂ neutral. If CCS is applied in addition, CO₂ is removed from the atmosphere.

**Biochar and soil carbon sequestration (SCS)**

Biochar is created via the pyrolysis of biomass, making it resistant to decomposition; it is then added to soil to store the embedded CO₂. SCS enhances soil carbon by increasing inputs or reducing losses.

**Enhanced weathering**

Minerals that naturally absorb CO₂ are crushed and spread on fields or the ocean; this increases their surface area so that CO₂ is absorbed more rapidly.

**Ocean fertilization**

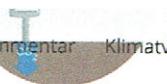
Iron or other nutrients are applied to the ocean, stimulating phytoplankton growth and increasing CO₂ absorption.

**Direct air capture (DAC)**

Chemicals are used to absorb CO₂ directly from the



When the plankton die, they
sink to the deep ocean. Blogg
Kommentar Klimatv.no Tema 2°C Om Energi og Klima



atmosphere, which is then
stored in geological reservoirs

Overview of carbon dioxide removal technologies. From Minx et al (2017): «Fast growing research on negative emissions», Environmental Research Letters, Volume 12, Number 3. Figure: Minx et al 2017 ©①

While wind turbines and solar panels are the poster child of a low carbon economy, they can't stop emissions in agriculture, industry, and some parts of transportation. We have also left deep mitigation so late, that we may need to overshoot the 2°C target and use carbon dioxide removal to bring the temperature increase back down to 2°C above pre-industrial levels.

ANNONSE ↴

Støtteannonser:

Since mitigation in some sectors may be too costly, and we have emitted so much already, it may be cheaper to remove carbon dioxide from the atmosphere. Modelling suggests that it may be cost effective to deploy carbon dioxide removal technologies from 2020 so that they can remove as much as 25-50% of our current emissions by 2100.

Most policymakers, heads of state and government, seem to be unaware of the broader political implications of emission reductions in excess of 100%. There is no debate on the one issue that usually dominates climate negotiations – differentiation and burden-sharing.

Three-point plan

To kick start the debate, we suggest three concrete actions for policy makers to catalyse a political conversation about carbon dioxide removal.

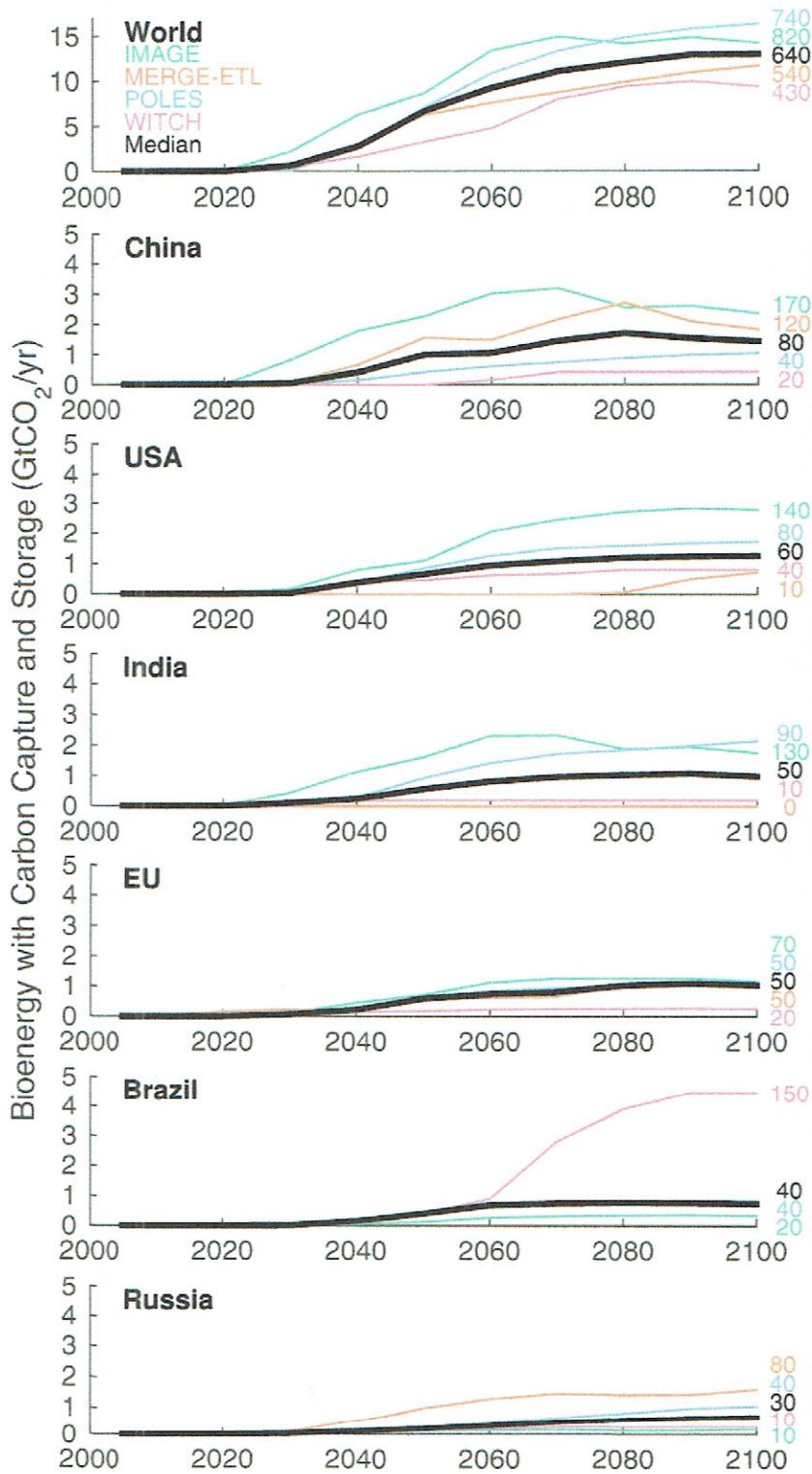
ANNONSE ↴

Norsk Klimastiftelse er Norges grønne tankesmie. Klimastiftelsen eier nettmagasinet Energi og Klima, gir ut notater og rapporter og holder frokostmøter og andre arrangementer.

Våre støttespillere:

1. Begin negotiating differentiated carbon dioxide removal responsibilities to indicate potential pathways to net-zero emissions

- Y 2. Develop a detailed system of accounting, supported by measurement, reporting, and verification, to track carbon and financial flows and responsibilities for carbon dioxide removal
3. Develop policy portfolios capable of incentivising carbon dioxide removal, that go beyond encouraging small-scale boutique applications to support the necessary 'gigatonne' scale



The scale of Bioenergy with Carbon Capture and Storage (BECCS) across different cost-optimal integrated assessment models. The different colours represent different IAMs and the black line is the average, the numbers to the right of the axis are cumulative values in 2100.

This blog post is a summary of the press release sent to journalists before the release of the paper.

Bli abonnent!

Abonnér på vårt ukentlige nyhetsbrev

[Abonnér](#)

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Fornybar trussel mot Saudi Aramcos børsverdi

ANNE JORTVEIT

Vurderingen av klimarisiko kan bli avgjørende når oljeselskapet Saudi Aramco skal verdsettes gjennom børsnoteringen. Les også om brenselmotorens dødsralling, elbileiere som kan tjene gode penger på å levere balansekraft og den gigantiske batterifabrikken som skal bygges i Sverige.

Det grønne generasjonsopprøret

PÅL W. LORENTZEN

Norge er – sammen med resten av verden – på full fart inn i en miljø- og klimakatastrofe. Dette har vi egentlig visst i mange år, men alt for mange har alt for lenge vært oppatt av å motsi/overse/tone ned og fortrenge det vitenskapen har rapportert: Våre utslipps av klimagasser truer livet og vår felles fremtid på jorden.

Norge bør slutte seg til hele pakken fra EU på klima- og energifeltet

ANDREAS T. AASHEIM

Det er på tide at norske politikere rister av seg ideen om at EU vil tillate en bilateral avtale med Norge som bare omfatter klimagassutslipp. Vi må ta om bord hele klima- og energipakken EU byr på, og det så fort som mulig.

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