



How the EU Governance Regulation can help achieve negative emissions

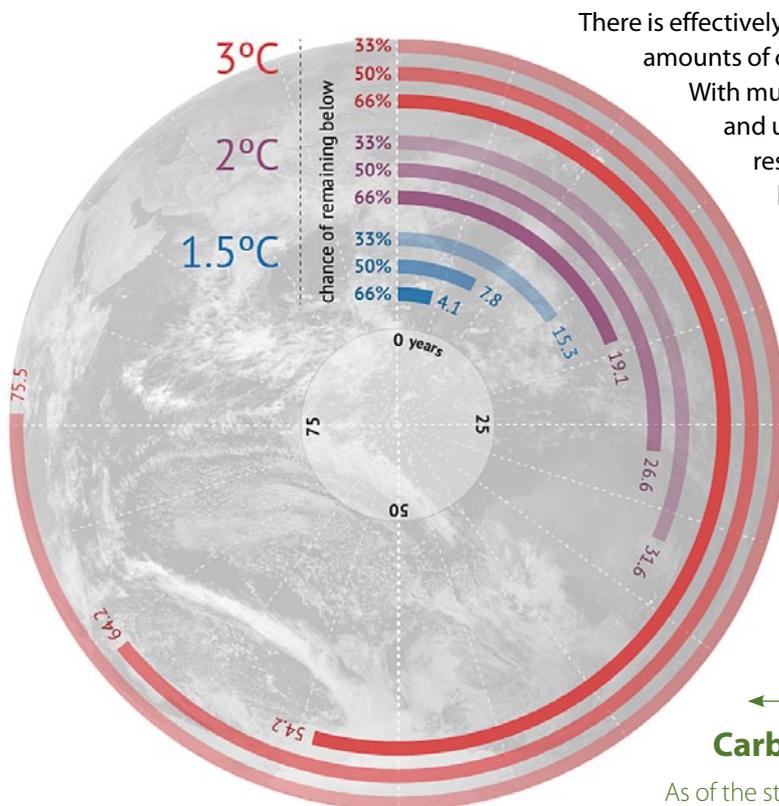


There is effectively only one realistic and sustainable way to remove large amounts of CO₂ from the atmosphere: forests.

Introduction

The 2015 Paris Agreement committed countries to hold the average global temperature rise to well below 2°C, and pursue efforts to limit it to 1.5°C. For this, we need drastic and urgent action.

Scientists have calculated a carbon budget for the planet: the amount of greenhouse gas (GHG) emissions we can still put into the atmosphere before we pass these temperatures – with terrifying consequences. Because we are cutting emissions too slowly, we are likely to blow this carbon budget very soon. This means we will need to find ways to remove carbon from the atmosphere. This concept is known as “negative emissions”.



There is effectively only one realistic and sustainable way to remove large amounts of carbon dioxide (CO₂) from the atmosphere: forests.

With much of Europe’s land already taken up by agriculture and urban areas, meeting the Paris targets will require the restoration of Europe’s existing forests, many of which have become degraded from over-harvesting. Restoring these degraded forests could provide most of the negative emissions Europe needs.

The EU does not have a plan to increase the carbon in its forests. The Commission’s proposed Regulation for the Governance of the Energy Union (the “Governance Regulation”),¹ currently making its way through the European Parliament and Council, presents an important opportunity. This briefing explains why a plan to restore EU forests is vital for achieving the Paris Agreement, and how the Governance Regulation can deliver this.

Carbon Countdown

As of the start of 2017, how many years of current emissions would use up the Intergovernmental Panel on Climate Change (IPCC) carbon budgets for different levels of warming? Credit: Carbon Brief. Photo: NASA Goddard Space Flight Center



¹ Proposal for a Regulation of the European Parliament and Council on the Governance of the Energy Union, amending Directive 94/22/EC, Directive 98/70/EC, Directive 2009/31/EC, Regulation (EC) No 663/2009, Regulation (EC) No 715/2009, Directive 2009/73/EC, Council Directive 2009/119/EC, Directive 2010/31/EU, Directive 2012/27/EU, Directive 2013/30/EU and Council Directive (EU) 2015/652 and repealing Regulation (EU) No 525/2013, COM(2016) 759 final 2016/0375 (COD)

1.5 or 2 degrees: does it really matter?

In a world where warming exceeds 1.5 degrees, Friedrich Schleussner of the Potsdam Institute for Climate Impact Research predicts much longer droughts in huge swathes of the world, from the Mediterranean to Central America, and the Amazon basin to southern Africa. These droughts could be harsh enough to cut river flows by 50 per cent.ⁱ

Other studies suggest that past 1.5 degrees, the Arctic will be ice-free, the Amazon rainforest will die and the Siberian tundra will melt. Ecosystems will take huge hits. As warming passes 1.5 degrees, “virtually all coral reefs are projected to be at risk of severe degradation due to temperature-induced bleaching”, concludes Schleussner.

So will people. Parts of the Persian Gulf will become physiologically uninhabitable for humans without permanent air conditioning.ⁱⁱ Going from 1.5 to 2 degrees could halve corn yields in parts of sub-Saharan Africa where corn is all that stands between life and death.ⁱⁱⁱ

Then there is sea-level rise. Just 1.5 degrees will deliver sea level rise of an alarming 1.5 metres by 2300; but 2 degrees would lock in 2.7 metres.^{iv} At the Paris talks, the countries that pressed most strongly for the inclusion of a 1.5 degree target were those most vulnerable to extreme climate or rising sea levels. Kiribati, the Pacific island nation that spoke up the loudest, would disappear from the map if the world fails to achieve it.

ⁱ Schleussner 2015: https://www.researchgate.net/publication/284913268_Differential_climate_impacts_for_policy-relevant_limits_to_global_warming_the_case_of_15_C_and_2_C

ⁱⁱ Pal & Eltahir: <http://www.nature.com/nclimate/journal/v6/n2/full/nclimate2833.html>

ⁱⁱⁱ Bruce Campbell http://www.huffingtonpost.com/bruce-campbell-phd/climate-change-half-a-deg_b_8756428.html

^{iv} Schaeffer 2012: <https://www.pik-potsdam.de/news/press-releases/archive/2012/erheblicher-anstieg-des-meeresspiegels-in-einer-welt-mit-zweigrad-erwaermung-Yale>



Drought in South Sudan. Woman picks wild leaves from the bush to eat.

CAPOD/David Mutua Flickr.com/CC

The global carbon budget & the need for negative emissions

To limit the average global temperature rise to 1.5°C, Intergovernmental Panel on Climate Change (IPCC) author Joeri Rogelj has calculated our **carbon budget** – the amount of CO₂ we can afford to add to the atmosphere.² He calculates that the Paris Agreement objective of bringing net emissions to zero by the second half of the century will mean the release of 800 billion tonnes CO₂. But limiting warming to 1.5°C, which is essential to avoid some of the worst impacts (see box), would require limiting future emissions to less than 300 billion tonnes. At current rates that will take less than a decade.³

So as well as reducing emissions, we will need to remove roughly 500 billion tonnes of CO₂ by the second half of the

century.⁴ The EU and other Paris signatories need to plan for and start generating these negative emissions as soon as possible.

Delivering negative emissions by restoring forests

How can we deliver these negative emissions? Various proposals for Carbon Dioxide Removal (CDR) technologies exist, but most are still speculative and risky.⁵ None of these will be available at scale in the short time we have.

² Rogelj 2015: <http://www.nature.com/nclimate/journal/v5/n6/full/nclimate2572.htm>; Pearce 2016a: <https://www.newscientist.com/article/2077540-the-big-carbon-clean-up-2-steps-to-stop-global-warming-at-1-5-c/>

⁵ One option that frequently comes up is Bioenergy with Carbon Capture & Storage (BECCS). However, as has been repeatedly pointed out by Fern and many others (<http://www.fern.org/sites/fern.org/files/Going%20negative%20version%202.pdf>), the amount of land BECCS would take up to produce the negative emissions we need is totally unfeasible: 5 million square kilometres, more than the total size of the EU. This is besides the fact that Carbon Capture & Storage (CCS) has not yet moved beyond a few very small pilot projects, and evidence is emerging that it is not viable at industrial scales. (<https://www.theguardian.com/environment/2017/oct/11/world-will-need-carbon-sucking-technology-by-2030s-scientists-warn>)

² Rogelj 2015: <http://www.nature.com/nclimate/journal/v5/n6/full/nclimate2572.html>

³ Carbon Brief 2016: <https://www.carbonbrief.org/analysis-only-five-years-left-before-one-point-five-c-budget-is-blown>

Fortunately, we already have a “technology” that could help us get out of this situation: forests. One option that would bring multiple benefits is restoring existing European forests. Many forests have become **degraded over the years through over-exploitation, and the European Commission projects that by 2030 they will be absorbing less carbon than they did at the beginning of this century.**⁶

Restoring these forests would allow the EU’s carbon sink to increase, whilst not requiring expansion onto existing areas of agricultural or urban land. In fact, agricultural production would benefit from forest restoration, as it improves local soil and water quality. Forest restoration could be a matter of life and death in drier climates like Portugal, Italy or Spain, as it would help hold back the forest fires that will become ever more common as the global temperature rises. Restoring forests also helps the EU meet other existing policy objectives, including the 1.5 million km² of habitat the EU has committed to restore as part of the Birds and Habitat Directives, of which 400,000 km² include forests.⁷

According to some estimates, the restoration of degraded tropical forests alone could remove between 220 and 330 billion tonnes of CO₂ from the atmosphere in the course of the century.⁸ This will not make up our full need for negative emissions (500 billion tonnes). But we could get there if we restored temperate, Mediterranean and boreal forests as well.

How can EU policy help us restore forests?

Currently, the EU has no overall target to increase the carbon in its forests. The only regulation to set an overall carbon target for EU forests is the new Land Use Land Use Change and Forestry (LULUCF) Regulation. But the target set in the proposed LULUCF Regulation is “no net debit”, meaning the EU LULUCF sector must not emit more emissions than it removes.⁹ In other words, it aims for the EU carbon sink to remain exactly the same. It does not set out to increase removals from sinks, and thus will not get the EU further towards negative emissions.

The Governance Regulation currently being developed offers a chance to achieve negative emissions.

The Governance Regulation is the EU’s overarching instrument

for delivering on its energy and climate commitments and on the Paris Agreement. The Commission’s proposal – published 30 November 2016 – brings together the EU’s existing climate legislation for different sectors, with the aim of setting out a coherent system of reporting and tracking delivery against targets. The Regulation is also intended to feed into the Paris Agreement’s system of periodically checking whether national plans are ambitious enough to meet the Paris goals, and reviewing upwards where necessary.

The Commission’s draft includes article 14 on **long-term low emission strategies** to ensure the Paris goals are met: Member States must submit these strategies to the Commission to show how they will reduce emissions dramatically **by 2050**.

These long-term strategies are a key opportunity to start building the ambition currently missing from the LULUCF Regulation – namely, to start planning for EU forests to generate negative emissions, rather than simply remaining at net zero. As the Paris Agreement goals cannot be met without significant negative emissions, the EU must make restoring forests a central part of its short and long-term climate planning.

How can the Governance Regulation help?

In the European Parliament’s Energy (ITRE) and Environment (ENVI) Committees, parties across the political spectrum have put forward a number of interesting amendments to the Commission’s proposal.

The Commission’s proposal includes both short-term (2030) and long-term (2050) emissions reduction targets. It is important that both include stronger and more explicit action to increase removals by sinks.

A clear, quantified long-term target for increasing removals is essential to encourage transformational investment in the land sector – as we have already started to see in the energy sector.

To realise this longer-term vision, we also need shorter-term targets such as those pursued in the energy sector. Short-term targets – and the immediate action this encourages – are particularly important for the land sector, as what matters for the climate is the total amount of removals that have happened over the years, rather than a snapshot in 2070 or any other particular year. In order to achieve overall negative emissions by the second half of the century, the EU has to remove as much carbon from the atmosphere as possible between now and then.

⁶ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016SC0249&from=EN>, p. 12

⁷ BIO by Deloitte (2015) Restoration efforts required for achieving the objectives of the Birds and Habitats Directives – Final report prepared for the European Commission (DG ENV), in collaboration University of Kent (DICE), VU University Amsterdam (VU) and Stichting BirdLife Europe.

⁸ Sivan Kartha, Kate Dooley: The risks of relying on tomorrow’s ‘negative emissions’ to guide today’s mitigation action, <https://www.sei-international.org/mediamanager/documents/Publications/Climate/SEI-WP-2016-08-Negative-emissions.pdf>

⁹ Article 4, LULUCF Regulation

Specific recommendations for Members of the European Parliament (MEPs)

I. On long-term planning

There are two sections of the Governance Regulation that are important for long-term planning. Article 1 sets out the overarching objectives. Article 14 describes Member States' long-term low emissions strategies, which they must submit to the Commission to show how they will contribute to meeting the EU's long-term climate goals.

- Both articles should refer to an EU-wide objective of **net zero emissions by 2050, and negative emissions soon thereafter**. This will allow the EU to remove a substantial amount of emissions by the second half of the century, to help achieve the 500 million tonnes of negative emissions required to meet our global carbon budget.
- Both articles should also include an EU-wide objective to **increase removals by sinks as early as possible, and at a level consistent with the Paris Agreement goals**.
- Article 14 should require that **Member States' long-term low-emissions strategies include a specific target on enhancing removals by sinks**, which should represent an equitable contribution to getting the EU towards net zero by 2050, and negative emissions soon thereafter.

II. On short-term planning

- The Parliament should encourage short-term action on removals by sinks via the template for Member States' National Energy and Climate Plans (NECPs), set out in Annex I of the Commission's proposal. In the NECPs, Member States outline what they will do to reduce emissions by 2030; they will repeat this process for subsequent ten-year periods. The NECP template should require Member States to include a **national trajectory to enhance removals by sinks starting from 2021** (without prescribing what the target or trajectory is, but simply requiring Member States to come up with one and meet it).
- Near-term removals could also be incentivised via Member States' NECP progress reports, which they must submit to the Commission every two years to show their progress in implementing their NECPs. The Parliament should add an article 18 **requiring Member States to include action on restoring carbon sinks in these progress reports**. It would require Member States to report specifically on their plans for restoring degraded forests, wetlands, croplands and grasslands. This would simply replicate – for the land sector – what the Commission has already proposed for renewable energy and energy efficiency elsewhere in the Regulation.

¹ Climate analytics: What does the Paris Agreement mean for Finland and the EU? http://climateanalytics.org/files/ca_paris_agreement_finland_eu.pdf (2016)