

ENSURING CREDIBLE CLIMATE DELIVERY: INTEGRATING PERMANENT CDR INTO THE EU CLIMATE GOVERNANCE

Response to the call for evidence on the update of Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action

Key recommendations

To ensure the Governance Regulation supports credible climate neutrality pathways, the revision should:

- 1. Integrate permanent carbon removals into national climate planning.** Require Member States to include dedicated planning for permanent carbon dioxide removals in their National Energy and Climate Plans (NECPs), including deployment trajectories, policy frameworks, CO₂ transport and storage infrastructure planning, and investment strategies.
- 2. Ensure transparency in the components of “net” climate targets.** Strengthen reporting and planning templates to clearly distinguish **emissions reductions, LULUCF sinks and permanent carbon removals** (domestic and, where relevant, international).
- 3. Link carbon removal deployment to residual emissions pathways.** Encourage Member States to quantify expected residual emissions and align national carbon removal strategies with these assessed needs.
- 4. Strengthen governance, monitoring and investment frameworks for carbon removals.** Support the development of national carbon removal strategies aligned with EU climate targets, long-term decarbonisation pathways and national industrial transition strategies, improve monitoring of enabling conditions for deployment, and ensure coherence with EU certification frameworks, infrastructure planning and funding instruments.

GENERAL ASSESSMENT

The review of the Governance Regulation is a critical opportunity to ensure that the EU's climate governance framework is fit for delivering the post-2030 climate architecture, including the upcoming 2040 climate target. [Carbon Gap](#) strongly supports the Commission's objective to transform NECPs into credible investment and delivery plans for the post-2030 period. Achieving this objective requires strengthening the planning, transparency, and accountability mechanisms that underpin the EU's climate trajectory.

A key gap in the current governance framework is the lack of structured planning for [carbon dioxide removal \(CDR\)](#), particularly [permanent carbon dioxide removal \(pCDR\)](#) such as DACCS, BioCCS and other emerging methods. While emissions reductions remain the primary priority, scientific consensus indicates that permanent removals will be required to address residual emissions in hard-to-abate sectors and to achieve net-zero emissions.

If permanent removals are expected to contribute meaningfully to the EU's climate targets after 2030¹ (as per the revised European Climate Law), the governance framework must ensure that Member States plan for them explicitly, transparently, and credibly. Without clear governance structures, permanent removals risk being implicitly assumed in “net” targets without the necessary policy frameworks, investment strategies, or deployment pathways.

The review of the Governance Regulation therefore provides a key opportunity to ensure that carbon removal becomes a visible, planned and financed component of Member States' climate strategies, rather than remaining an implicit accounting element. In addition to its role in achieving climate neutrality, scaling a European carbon removal sector could also generate significant economic benefits: [analysis suggests](#) that the CDR sector could develop into a €220 billion annual market and support up to 670,000 high-quality jobs across Europe by 2050.

As the EU moves towards 2050 climate neutrality and increasingly relies on integrated planning frameworks to deliver its climate objectives, ensuring transparent and credible governance of all components contributing to “net” targets will become increasingly important. Strengthening the visibility and governance of permanent carbon removals within NECPs will therefore help ensure that EU climate targets are supported by realistic planning, credible delivery pathways and clear investment signals.

RECOMMENDATIONS

1. Integrate permanent carbon dioxide removal into national climate planning

Permanent carbon dioxide removal (pCDR) should be explicitly integrated into the planning and reporting architecture of the Governance Regulation. As NECPs evolve into investment and delivery plans for the post-2030 period, they should ensure clearer visibility of all components contributing to climate neutrality, including emissions reductions, land sinks and technological carbon removals.

To support credible planning and investment signals, the revised Governance Regulation should require Member States to include **dedicated sections on permanent carbon removals in NECPs and progress reports**, covering:

- quantified trajectories for permanent removals towards 2030, 2040 and climate neutrality;
- policy instruments and regulatory frameworks planned to enable deployment;
- infrastructure and system planning, including CO₂ transport and storage infrastructure;
- investment needs and financing strategies;
- expected contributions from different carbon removal methods.

¹ European Commission modelling ([2040 target Impact Assessment](#)) assumes up to ~400 MtCO₂/year of total removals by 2040 (land + industrial); within that, ~75 MtCO₂/year from industrial/permanent removals by 2040 (with the remainder mainly expected from LULUCF). The [European Scientific Advisory Board on Climate Change \(ESABCC\)](#) indicate a wide range for total removals in 2040 (~146–614 MtCO₂), with BECCS + DACCS around ~46–214 MtCO₂ in 2040 (depending on pathway). [Carbon Gap / VTT modelling \(“Divide to Deliver”\)](#) finds 2040 total removal needs of ~452–625 MtCO₂/year, with permanent removals ~104–278 MtCO₂/year (depending on how gross emissions reductions evolve).

Making permanent removals visible within national planning frameworks would improve investment certainty, policy coherence and the credibility of climate neutrality pathways. Recent national [Carbon Removal Readiness Assessments](#) conducted across several European countries by Carbon Gap show that while many national pathways implicitly assume a role for carbon removals, dedicated strategies, infrastructure planning and policy frameworks remain largely underdeveloped. Strengthening governance under the Regulation would help close this gap between modelling assumptions and real-world deployment.

2. Ensure transparency in the components of “net” climate targets

To ensure transparency and accountability, the Governance Regulation should require clear separation of the different components contributing to “net” climate targets.

Planning and reporting templates should distinguish between the below **for domestic and, where relevant, for international mitigation**:

- emissions reductions
- LULUCF sinks
- permanent carbon dioxide removals

Such separation would improve comparability between Member States, prevent opaque accounting practices and enable clearer assessment of progress towards emissions reductions and removals separately. Transparent accounting is essential to ensure that removals complement mitigation rather than substitute it. Greater transparency would also support the development of a diversified portfolio of carbon removal approaches, helping ensure durable and resilient removal capacity across the EU.

3. Link carbon removal deployment to residual emissions pathways

Member States should assess expected residual emissions in their climate neutrality pathways and link these assessments to their planned carbon removal strategies.

Understanding the scale of remaining emissions in sectors such as aviation, agriculture, heavy industry and waste provides a concrete basis for determining the necessary level of carbon removal deployment.

The Governance Regulation should therefore encourage Member States to:

- quantify expected residual emissions towards climate neutrality;
- identify how these emissions will be addressed through mitigation and permanent removals;
- align carbon removal strategies with these assessed needs.

This approach strengthens the credibility of climate neutrality pathways and helps ensure that carbon removal deployment is anchored in real climate system needs rather than abstract targets.

Experience from national climate strategies shows that explicitly quantifying residual emissions can significantly strengthen policy planning for carbon removals. For example, [Switzerland's climate neutrality strategy](#) identifies around 12 MtCO₂ of residual emissions by 2050, which directly informs its approach to carbon removal and CO₂ storage policy. Similar discussions are emerging in other countries such as Germany, where residual emissions estimates are driving the development of carbon management strategies.

4. Strengthen governance, monitoring and investment frameworks for carbon removals

To support the scale-up of permanent carbon removals, the Governance Regulation should strengthen governance and monitoring frameworks and support the development of national carbon removal strategies aligned with a coherent [EU long-term vision for carbon dioxide removal](#).

This could include:

- **linking reported removals to emerging guidance for national carbon removal accounting by IPCC;** this could include Harmonized EU guidance for accounting and reporting of carbon removals in national inventories²;
- **introducing indicators that track enabling conditions for carbon removal deployment,** such as the existence of national carbon removal strategies and targets, regulatory clarity for carbon capture and storage, progress in developing CO₂ transport and storage infrastructure, and the availability of public funding or market mechanisms supporting carbon removal deployment (see Carbon Gap's [Traffic Light System](#) for more possible indicators³).
- **encouraging Member States to develop national carbon removal strategies aligned with EU (and potential national-level) climate targets and long-term decarbonisation pathways,** while reflecting national industrial structures and competitiveness priorities. Such strategies should identify the potential roles of carbon removal across key industrial value chains⁴ — including (i) sectors where removals are required to neutralise residual emissions, (ii) sectors where removals can be physically integrated into industrial processes or waste streams, and (iii) sectors where captured CO₂ can be durably stored in products or materials.
- improving coherence between NECPs, long-term national and industrial strategies and EU funding instruments.

² By 2027, a respective framework is expected to become available via IPCC's Task Force on National Inventories (<https://www.ipcc.ch/report/2027-ipcc-methodology-report-on-carbon-dioxide-removal-technologies-carbon-capture-utilization-and-storage-for-national-greenhouse-gas-inventories-additional-guidance/>)

³ Carbon Gap has developed a "Traffic Light Framework" to assess countries' readiness to deploy CDR. The framework evaluates key enabling conditions for CDR deployment — including policy frameworks, targets, funding mechanisms, infrastructure development and regulatory clarity — and categorises progress using a traffic-light system (red, amber, green). The methodology provides a structured approach to track whether countries are creating the conditions necessary for scaling carbon removals. See: <https://tracker.carbongap.org/resource/traffic-light-framework-methodology/>

⁴ Industrial sectors interact with CDR in different ways. Some sectors are expected to rely on removals to neutralise residual emissions, while others may host process-integrated removals through biogenic CO₂ streams or mineralisation processes, or embed CO₂ storage in durable products such as construction materials. Carbon Gap's industrial policy matrix distinguishes these functional roles to assess how carbon removal can support industrial decarbonisation and competitiveness.

Tracking enabling conditions (not only delivered tonnes) would allow the Commission to assess whether Member States are creating the necessary conditions for future deployment. Strengthening these governance elements would help ensure that carbon removal deployment is transparently monitored, environmentally robust and supported by coherent investment frameworks.

Useful Carbon Gap resources:

- [Carbon Dioxide Removal 101](#)
- [Policy & Funding Tracker](#)
- [Vision for a Carbon Removal Strategy for Europe](#)
- [Carbon Removal Country Readiness Assessments](#) (see the reports for [France](#), [Germany](#), [Finland](#), [Spain](#), with Poland and Italy imminently forthcoming)
- [Divide to deliver: Why 2040 separate targets for carbon removal are feasible and necessary to reach EU net zero \(Carbon Gap & VTT 2040 targets modelling results\)](#)