



TEXTS ADOPTED

P9_TA(2023)0104

Sustainable carbon cycles

European Parliament resolution of 18 April 2023 on sustainable carbon cycles (2022/2053(INI))

The European Parliament,

- having regard to the 21st Conference of the Parties (COP21) to the UN Framework Convention on Climate Change and to the 11th Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP11), held in Paris, France, from 30 November to 11 December 2015, and to the Paris Agreement, adopted by Decision 1/CP.21 at COP21, in particular to Article 2 and Articles 6.2 and 6.4 thereof,
- having regard to the UN Convention on Biological Diversity (UNCBD),
- having regard to the UN Convention to Combat Desertification (UNCCD),
- having regard to the UN 2030 Agenda for Sustainable Development and to the Sustainable Development Goals (SDGs),
- having regard to the Intergovernmental Panel on Climate Change (IPCC) reports, particularly its Special Report of 8 October 2018 on Global Warming of 1,5 °C, its sixth assessment report (AR6) and its synthesis report thereon, entitled ‘Climate Change: 2021: The Physical Science Basis’, published on 9 August 2021,
- having regard to the IPCC reports entitled ‘Climate Change 2022: Impacts, Adaptation and Vulnerability’, published on 28 February 2022 and ‘Climate Change 2022: Mitigation of Climate Change’, published on 4 April 2022, its special report of 24 September 2019 on the ocean and cryosphere in a changing climate, and its special report of 8 August 2019 on climate change and land,
- having regard to the Commission communication of 11 December 2019 on the European Green Deal (COM(2019)0640),
- having regard to the Commission communication of 15 December 2021 on Sustainable Carbon Cycles (COM(2021)0800),
- having regard to the Commission staff working document of 15 December 2021 entitled ‘Sustainable carbon cycles – Carbon farming’ (SWD(2021)0450),

- having regard to the Commission staff working document of 15 December 2021 entitled ‘Sustainable carbon cycles for a 2050 climate-neutral EU’ (SWD(2021)0451),
- having regard to Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (‘European Climate Law’)¹, in particular Article 32 thereof,
- having regard to Decision (EU) 2022/591 of the European Parliament and of the Council of 6 April 2022 on a General Union Environment Action Programme to 2030²,
- having regard to Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 establishing rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans)³,
- having regard to its position⁴ on the proposal of 14 July 2021 for a regulation of the European Parliament and of the Council amending Regulations (EU) 2018/841 as regards the scope, simplifying the compliance rules, setting out the targets of the Member States for 2030 and committing to the collective achievement of climate neutrality by 2035 in the land use, forestry and agriculture sector, and (EU) 2018/1999 as regards improvement in monitoring, reporting, tracking of progress and review (COM(2021)0554),
- having regard to the Commission communication of 20 May 2020 entitled ‘A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system’ (COM(2020)0381), and to Parliament’s resolution of 20 October 2021 on the same topic⁵,
- having regard to the Commission Technical Guidance Handbook entitled ‘Setting up and implementing result-based carbon farming mechanisms in the EU’, published on 29 April 2021,
- having regard to the Commission communication of 20 May 2020 entitled ‘EU Biodiversity Strategy for 2030: Bringing nature back into our lives’ (COM(2020)0380), and to Parliament’s resolution of 9 June 2021 on the same topic⁶,
- having regard to the Commission communication of 16 July 2021 on the New EU Forest Strategy for 2030 (COM(2021)0572),
- having regard to the Commission communication of 14 October 2020 on an EU strategy to reduce methane emissions (COM(2020)0663), and to Parliament’s resolution of

¹ OJ L 243, 9.7.2021, p. 1.

² OJ L 114, 12.4.2022, p. 22.

³ OJ L 435, 6.12.2021, p. 1.

⁴ Texts adopted, P9_TA(2022)0233.

⁵ OJ C 184, 5.5.2022, p. 2.

⁶ OJ C 67, 8.2.2022, p. 25.

21 October 2021 the same topic¹,

- having regard to the Commission communication of 11 March 2020 entitled ‘A new Circular Economy Action Plan For a cleaner and more competitive Europe’ (COM(2020)0098), and to Parliament’s resolution of 10 February 2021 on the same topic²,
- having regard to the Commission communication of 24 February 2021 entitled ‘Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change’ (COM(2021)0082), and to Parliament’s resolution of 17 December 2020 on the same topic³,
- having regard to the Commission communication of 25 March 2021 entitled, ‘An Action Plan for the Development of Organic Production’ (COM(2021)0141), and to Parliament’s resolution of 3 May 2022 on the same topic⁴,
- having regard to the Commission communication of 17 November 2021 entitled ‘An EU Soil Strategy 2030: Reaping the benefits of healthy soils for people, food, nature and the climate’ (COM(2021)0699), and to Parliament’s resolution of 28 April 2021 on the same topic⁵,
- having regard to the Commission communication of 14 October 2020 entitled ‘Chemicals strategy for sustainability towards a toxic free environment’ (COM(2020)0667), and to Parliament’s resolution of 10 July 2020 on the same topic⁶,
- having regard to its resolution of 28 April 2021 on soil protection⁷,
- having regard to its resolution of 28 November 2019 on the climate and environmental emergency⁸,
- having regard to the Commission communication entitled, ‘A long-term Vision for the EU’s Rural Areas - Towards stronger, connected, resilient and prosperous rural areas by 2040’ (COM(2021)0345),
- having regard to the Commission communication entitled ‘Recommendations to the Member States as regards their strategic plan for the Common Agricultural Policy’ (COM(2020)0846),
- having regard to the Commission observation letters on the Member States’ CAP strategic plans,
- having regard to European Court of Auditors Special Report 12/2021 entitled ‘The

¹ OJ C 184, 5.5.2022, p. 105.

² OJ C 465, 17.11.2021, p. 11.

³ OJ C 445, 29.10.2021, p. 156.

⁴ OJ C 465, 6.12.2022, p. 22.

⁵ OJ C 506, 15.12.2021, p. 38.

⁶ OJ C 371, 15.9.2021, p. 75.

⁷ OJ C 506, 15.12.2021, p. 38.

⁸ OJ C 232, 16.6.2021, p. 28.

Polluter Pays Principle: Inconsistent application across EU environmental policies and actions’,

- having regard to European Court of Auditors Special Report 16/2021 entitled, ‘Common Agricultural Policy and Climate: Half of EU climate spending but farm emissions are not decreasing’,
 - having regard to the UN Environment Programme’s Emissions Gap Report 2021, published on 26 October 2021¹,
 - having regard to the Global Assessment Report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) of 31 May 2019 on biodiversity and ecosystem services²,
 - having regard to the 2021 International Union for Conservation of Nature (IUCN) Manual for the Creation of Blue Carbon Projects in Europe and the Mediterranean,
 - having regard to the study entitled ‘Carbon farming – Making agriculture fit for 2030’, requested by the Committee on the Environment, Public Health and Food Safety and published on 30 November 2021³,
 - having regard to the opinion of the European Economic and Social Committee on Restoring sustainable carbon cycles (NAT/846-EESC-2021),
 - having regard to Rule 54 of its Rules of Procedure,
 - having regard to the opinions of the Committee on Industry, Research and Energy and of the Committee on Agriculture and Rural Development,
 - having regard to the report of the Committee on the Environment, Public Health and Food Safety (A9-0066/2023),
- A. whereas the transition to sustainable food systems in line with the ambitions of the European Green Deal for climate neutrality by 2050 at the latest should be made a central part of agriculture and food policies; whereas carbon farming has the potential to contribute to the EU’s climate and biodiversity objectives, as well as to support sustainable food production;
- B. whereas different carbon cycles react differently and should therefore be treated separately; whereas greater use of biological carbon sinks must be made in a way that promotes biodiversity and ecosystem services; whereas nature restoration is critical to respond to multiple global crises; whereas carbon farming schemes, which can be used voluntarily by beneficiaries, can contribute to delivering on climate and biodiversity

¹ United Nations Environment Programme. *Emissions Gap Report 2021: The Heat Is On – A World of Climate Promises Not Yet Delivered*, Nairobi, 2021.

² IPBES. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, 2019.

³ European Parliament study, *Carbon farming – Making agriculture fit for 2030*, Directorate-General for Internal Policies, Policy Department for Economic, Scientific and Quality of Life Policies, 2021.

- objectives, ensuring their implementation is less bureaucratic;
- C. whereas voluntary carbon markets are volatile and have failed to incentivise land managers by offering them a fair price per unit of carbon stored;
 - D. whereas avoiding the worst effects of climate change will rely first and foremost on minimising atmospheric greenhouse gas (GHG) emissions as far as possible, including through the use of technologies such as carbon capture and storage (CCS) where other mitigation options are not feasible, and also on removing carbon dioxide (CO₂) already in the atmosphere, through technologies such as CO₂ removal;
 - E. whereas enhancing carbon removal is necessary to achieve a balance between EU-wide GHG emissions and removals within the EU by 2050 at the latest and to achieve negative emissions thereafter; whereas a drastic reduction in the EU's reliance on fossil fuels is necessary; whereas carbon removals remain more limited than absolute reductions, but can balance the unavoidable emissions where no direct emission reduction options are available;
 - F. whereas ensuring the availability of natural raw materials (i.e., food and biomass) is the primary objective of agriculture and forestry;
 - G. whereas biogenic carbon cycles are natural processes that are strongly influenced by human intervention and need to be sustainable in order to remove carbon from the atmosphere; whereas policies should differentiate between fossil and biogenic carbon cycles in order to bring the emissions of fossil carbon close to zero as soon as possible;
 - H. whereas short-cycle removal, based on terrestrial sinks, and long-cycle removal, based on geological storage, have different storage timescales, ranging from decades to centuries for terrestrial sinks and from millennia to millions of years for geological storage; whereas short-cycle removal and long-cycle removal also have different risks of reversal or leakage, costs and deployment timeframes;
 - I. whereas soils are highly complex ecosystems, in which microorganisms interact with each other and with plants in a multitude of ways; whereas recent advances in soil sciences have found that soil life is the primary driver of soil functionalities, including the cycling of carbon; whereas soil organisms play an important role in the storage of carbon in soils;
 - J. whereas throughout the EU, carbon stocks in the soil are currently on a worrying downward trend as a result of multiple factors; whereas good soil health improves the capacity for food production, water filtration, and carbon absorption, thus contributing not only to stabilising the climate but also to ensuring food security and restoring biodiversity;
 - K. whereas predicting the actual mitigation capacity of agricultural soils is very challenging due to the enormous variety of possible scenarios arising from the combination of management practices, their possible area of application, and interactions with other socio-economic drivers; whereas regenerative agriculture as an approach to food production and land management could mitigate those challenges, supporting the transition towards a highly resilient agricultural system based on the appropriate management of land and soils;

- L. whereas the main agricultural carbon sinks are permanent grassland and peatland, and the surface area they cover is continuing to shrink, because the CAP's cross-compliance rules allow for 5 % of such areas to be ploughed up during each programming period owing to the reference year being updated and to the fact that the measure is managed on an overly aggregated scale;
- M. whereas the family farm model is vital to the future of agriculture and rural communities in the EU; whereas the number of farms in the EU decreased by about one quarter in the relatively short period between 2005 and 2016 of which the vast majority were small family farms;
- N. whereas carbon sequestration practices such as carbon farming can contribute to the availability of new local job opportunities, rural development and to improved social inclusion of rural areas;
- O. whereas SDG 12 on 'ensuring sustainable consumption and production patterns' by 2030 also includes food waste reduction targets at all the various stages of agricultural production, processing, post-harvest handling through to storage, distribution and consumption;
- P. whereas, as breeding grounds and habitats for a wide range of marine and terrestrial species, marine and fresh water ecosystems play an important ecological role in nutrient and carbon cycling, in protecting the coastline, in sustaining livelihoods and ensuring the well-being of local communities;
- Q. whereas an efficient and robust regulatory framework and appropriate funding will be required to ensure the timely commercialisation and deployment of carbon capture, removal and storage technologies, as well as the necessary CO₂ infrastructure;
- R. whereas the London Protocol¹ prohibits the cross-border transport of CO₂ by sea; whereas the 2009 amendment addressing this restriction has only been adopted by five Member States;

I. General Considerations

1. Stresses that the impact of natural and industrial carbon removal solutions on balancing GHG emissions is limited, and should not come at the expense of ambitious climate mitigation goals, which require a substantial reduction in emissions; underlines the EU's objective to prioritise swift and predictable emission reductions and, at the same time, enhance removal by natural sinks, in line with the European Climate Law; acknowledges the potential of the sustainable carbon cycles initiative to contribute to the EU net carbon removal target of at least net 310 megatonnes (Mt) by 2030 while taking into account the 'do no significant harm' principle, as mentioned in the Commission communication on sustainable carbon cycles, as well as the need to avoid double counting and to ensure environmental integrity;
2. Cautions against many IPCC scenarios that rely heavily on future CO₂ removals; considers that, given the many uncertainties related to those technologies and the risks that most of them entail for land use, water resources, biodiversity protection and food

¹ 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 1972.

security, priority should be given to scenarios that minimise the use of CO₂ removals, such as low energy demand scenarios; calls on the EU Independent Advisory Board on Climate Change to prioritise those scenarios when assessing what could be a 1,5°C compatible GHG emissions budget for the EU, and to carefully consider the use of CO₂ removal options and technologies in a socially, environmentally and economically conscious manner;

3. Emphasises that the EU should aim to achieve negative emissions as well as emissions reductions in order to avoid depending on future negative emissions that might never be achieved; insists that net-zero should not be the ultimate EU climate objective, but instead should be a stepping stone on the way to achieving net-negative emissions; welcomes the plan set out by the Commission on how carbon removal can contribute to achieving net-negative emissions; calls on the Commission to define a list of practices with the highest absorption potential as an important input for farmers and to further invest in developing accessible and affordable carbon-removal technologies; insists that removals should be counted towards a separate removal target to ensure they do not slow down economy-wide decarbonisation efforts;
4. Stresses that agriculture and forestry should play a significant role in achieving the EU carbon removal target for the land-use sector and, like all economic sectors, should contribute to the EU's climate neutrality goal; underlines that healthy natural ecosystems can constitute an important source of long-term removals;
5. Notes that net removals from terrestrial ecosystems in the EU have been on a downward trend over the last decade, largely driven by the deteriorating situation in forest ecosystems as underlined in the Communication; notes that enhancing the resilience of forest and agriculture ecosystems is absolutely essential in order to cope with the consequences of climate change in the EU, and to maintain a chance of respecting our climate objectives;
6. Stresses that each sector must, first and foremost, reduce its own CO₂ emissions independently and use the storage capacity of other sectors, such as agriculture and forestry, primarily for non-reducible emissions and temporarily for emissions that are very hard to reduce, in order to reach climate targets before 2050 and to kick-start carbon farming business models; thinks that sectors and installations with non-reducible emissions only can rely on the storage capacity of other sectors to help them meet their climate neutrality goal if carbon removal certificates are used; underlines in this context the need to prevent industry offsetting its emissions with carbon certificates;
7. Emphasises that sustainable food production is an objective of agriculture to ensure food security, and that the availability of sustainable renewable raw materials is an objective of forestry and agriculture; underlines that climate change and biodiversity loss both significantly affect these sectors, and thus food security; underlines that biodiversity loss, and the lack of resilience to adapt to climate change are already affecting the production capacity of the food system and of forestry in the EU;
8. Stresses that carbon removal practices and efforts should not infringe on people's right to live in healthy environments, which includes preserving healthy soils; calls on the Commission to devise clear safeguard policies to protect this right;
9. Invites industry sectors to come forward with innovative solutions and initiatives aiming

to phase out fossil carbon and reduce carbon emissions; supports the further promotion, such as by means of financial incentives, of technological solutions for carbon capture and use and the production of sustainable synthetic fuels or other non-fossil-based carbon products; calls on the Commission, in cooperation with industry sectors and other stakeholders, including civil society organisations involved in carbon removal practices and technologies to come forward with concrete solutions and initiatives aimed at replacing fossil carbon with sustainable streams of recycled carbon;

10. Recognises the value of industrial solutions in carbon sequestration as well as their contribution to reducing carbon emissions; emphasises that nature-based solutions such as diverse old-growth forests, rewetting of drained wetlands and peatlands, agroforestry and reforestation should be prioritised and incentivised as carbon farming initiatives should not only favour industrial farming models;
11. Stresses that ensuring healthy soils is essential to improve soil fertility, increasing adaptive capacity, and mitigating GHG emissions; underlines that soil protection and restoration are essential to achieving EU and international climate and biodiversity goals, and the transition towards sustainable food systems; emphasises, therefore, that there should be no delay in the proposed EU Soil Health Law, as the common legislative framework will work towards these aims;
12. Stresses that the sequestration of carbon in soils, ecosystem and biodiversity protection and restoration are deeply interlinked and contribute to enhanced soil resilience and climate adaptation by improving soil structure, increasing water retention capacity and having a positive impact on plants and crops, while simultaneously decreasing the risk of soil erosion; calls therefore on the Member States to introduce consistent soil protection in national CAP strategic plans;
13. Highlights that increasing carbon in soil brings multiple benefits, including improved soil quality and fertility, increased resistance to pathogens, increased resilience to extreme weather and better nutritional quality; notes, moreover, that increasing organic matter in degraded soils will supply sufficient nutrients to maintain crop yield, therefore insists on sustainable soil management and recalls the importance of agroecological practices that improve carbon sequestration in soil, such as cover cropping, crop rotation, organic farming, maintaining grasslands (without ploughing), conversions from cropland to permanent grassland, the extensification of livestock farming in certain areas, mixed farming integrating livestock and cropping systems, and agroforestry;
14. Acknowledges in this context the high CO₂ intensity of chemical fertiliser production and calls on the Commission to allow and stimulate the use natural or treated manure instead of chemical fertilisers by European farmers and Member States;
15. Stresses that enhanced carbon removal within products must build on robust carbon accounting methodologies that fully consider the upfront uptake of biogenic carbon into biomass; calls for the use of innovative sustainable, circular and long-lasting bio-based carbon products that mitigate climate change by capturing carbon in the circular bio-economy to be incentivised, including, if relevant, by appropriately amending the applicable EU legislative framework and taking into account indirect and supply chain emissions related to sequestration, biomass production, transportation, refining, capturing and storage that these emissions incur; calls, moreover, for this support to take

advantage of the policy to boost biomethane under RePowerEU – the Commission proposal to end reliance on Russian fossil fuels before 2030 – in line with sustainability criteria, and using the digestates obtained for carbon removals; stresses that the European carbon farming model should be realistic and proportionate and cover relevant bio-based and innovative products, including those made from by-products and residues, where there is a genuine scientifically proven and verifiable long-term carbon sequestration effect, backed up by a solid body of peer-reviewed science; invites the Commission to also revise the Product Environmental Footprint (PEF) methodology to align it with globally accepted principles and reflect transparently on the benefits and trade-offs at all stages of product value chains;

16. Considers that the aspirational target of a 20 % share of sustainable non-fossil carbon sources in chemical and plastic products should also apply to imports;

II. Carbon farming

17. Stresses that the growing interest in carbon farming should be an opportunity for farmers to transform their business model and to better reward farmers who are engaging in a transition towards agro-ecological and sustainable agroforestry practices; calls on the Commission to broaden its definition of carbon farming practices to include on-farm mitigation measures in addition to on-field sequestration measures; stresses the importance of ensuring the social, environmental, and economic integrity of carbon farming to guarantee food security, a decent income for farmers and limited environmental impacts; considers that carbon farming can be a voluntary activity, and therefore that the financial rewards for carbon farming should compensate for the additional efforts of farmers and foresters beyond their obligations under EU and Member State laws; notes that carbon farming initiatives can be financed via the common agricultural policy and/or other public funding instruments such as State aid, private initiatives such as market-based solutions, a system of tradeable carbon credits or through a combination of these funding options, with contributions from private-market carbon-farming programmes; considers that carbon farming should be developed on the basis of a credible and effective policy framework taking into account the need for a clear set of rules for those farmers and foresters who decide to implement carbon farming practices; insists that the successful implementation of carbon farming depends on the holistic management of all pools of carbon in soils, materials and vegetation, integrating the fluxes of CO₂, methane, and nitrous oxide for both land and livestock; in addition, underlines the importance of ensuring a fair farm gate price and remuneration; stresses that carbon farming incentives must not lead to negative side effects, such as land grabbing by large companies intending to use the land for carbon offsetting purposes and not for actual emissions reductions; underlines the general principle that beneficiaries of payments relating to carbon removals should be accountable for their GHG emissions;
18. Underlines the need to take into account preliminary work and efforts made by the frontrunners on this issue, bearing in mind Member States' and farmers' different starting points, and insists on ensuring equitable carbon farming opportunities for farmers and foresters across the EU; emphasises that an effective carbon farming scheme should not penalise those seeking to take the first step towards more sustainable carbon farming practices;
19. Calls on the Commission to take into account the specific situation of young farmers,

such as a lack of capital and access to agricultural land, so as to avoid any adverse side effects of the carbon farming proposal that might be to the detriment of young people's entrepreneurship in agriculture and the generational renewal;

20. Stresses that sequestration of carbon in soil and biomass should be considered a valuable contribution to addressing ongoing climate change; emphasises that the land and forestry sector have a natural maximum carbon storage capacity; points out that carbon sequestration may be subject to external factors that are not always under farmers' control and might jeopardise the duration of removals; reiterates that removals of greenhouse gases by natural carbon sinks are difficult to calculate and potentially reversible, and that the risk of reversal of removals by natural carbon sinks is further aggravated by climate change; stresses the need to ensure a clear definition of permanence and rules for liability of possible reversals;
21. Notes that certain CAP instruments can incentivise carbon sequestration practices; calls for the integration of carbon farming into upcoming CAP national strategic plans (NSPs) in line with Member States' assessments and needs, to ensure that local natural conditions and other circumstances are adequately reflected; underlines that carbon farming must be implemented in a way that is consistent with existing and forthcoming legislation, nature restoration law, the EU soil health law, as well as the sustainable food systems framework;
22. Encourages the Commission as well as public and private initiatives to raise awareness of the valuable environmental co-benefits that carbon farming practices can provide; insists that carbon farming can help with the transition to agroecological carbon farming at farm level;
23. Asks the Commission to make available to land managers verified emission and removal data, based on a farm level and a result-based approach, well before 2026, in order to be used in the expected legislative proposal for sustainable food systems as well as in the upcoming revision of the common agricultural policy;

III. Blue carbon

24. Emphasises that the blue carbon economy has great potential to contribute to the storage of CO₂ in coastal regions after careful research in order to avoid damaging the coastal ecosystem and should indeed provide multiple benefits; encourages the Commission to collect more data on blue carbon sequestration and storage; calls, in this regard, on public and private sector contributions dedicated to this and to the restoration of marine biodiversity;
25. Recalls the need to map marine and freshwater ecosystems and notes that this is fundamental to monitoring the effectiveness of policies and to prioritising future actions, and that it is important to be able to determine the evolution of the habitat and its extension or degradation by comparing it with reference years;
26. Reiterates Parliament's position¹ on extending the scope of the land use, land-use change and forestry (LULUCF) regulation² to include GHG emissions and removals

¹ Texts adopted, P9_TA(2023)0066.

² Regulation (EU) 2018/841 of the European Parliament and of the Council of

from the marine, coastal, and freshwater ecosystems, including deltaic wetlands based on the latest scientific evidence of these fluxes and their causes, and apply specific targets to such emissions and removals;

27. Underlines that an ambitious circular economy strategy is a prerequisite for achieving sustainable and climate-resilient carbon cycles by keeping carbon in the cycle; stresses the need for an explicit definition of recycled carbon; expresses concern that the Communication conflates delayed emissions, recycling of carbon and removals without sufficient clarity on the differences in their roles and needs;

IV. CCS and CCU

28. Considers that technologies such as direct air capture that are combined with permanent storage and are scientifically proven and environmentally safe can play a role in helping achieve climate neutrality in the EU by no later than 2050; emphasises that emissions reduction at source must always remain the priority; stresses that more needs to be done to significantly reduce the environmental footprint of current carbon capture technologies, in particular of energy and water use;
29. Underlines that the solutions based on carbon capture and storage (CCS) and carbon capture and use (CCU) technologies can play a role in decarbonisation, especially for the mitigation of process emissions in industry, for those Member States that choose this technology;
30. Calls on the Commission to establish an efficient and reliable system for the traceability of captured CO₂, distinguishing between carbon capture on site and from the atmosphere in order to avoid double counting and safeguard the integrity of removals;
31. Underlines that carbon storage is not allowed in all Member States and that Member States are free to decide whether to authorise the geological storage of CO₂ on their territory; calls on the Commission and the Member States to sufficiently document the long-term effects of carbon storage in regions with geological storage capacity and support research to obtain more data on the overall environmental impact, energy efficiency, social acceptability, economic costs and risk of leakage and geological perturbations and before their large-scale deployment; strongly encourages the Commission to clarify the issue of liability in the event of a reversal of carbon removals resulting in harm to human health, the climate or the environment;
32. Welcomes the Commission's plan to study cross-border CO₂ infrastructure needs and to map out relevant industrial clusters which could benefit from open-access and multi-modal CO₂ transport networks to geological storage sites; expresses support for the Commission initiative to establish a cross-border network for the development of CO₂ infrastructure at EU, regional and national level by 2030 and beyond, involving all relevant public and private stakeholders in that endeavour; calls on the Commission to adopt a road map, with clear steps and milestones, to develop the CO₂ storage and transport infrastructure needed to meet the EU's long-term climate target of carbon

30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU (OJ L 156, 19.6.2018, p. 1).

neutrality by 2050 at the latest;

33. Considers that switching from fossil energy sources to industrial use of biomass energy sources has a spillover effect with negative impacts on the amount of carbon stored in the land-use sector; reiterates that, from a climate change perspective, the increase in emissions persists until the payback period is passed, which for an energy crop may be centuries; notes that, in relation to the goals of the Paris Agreement to limit warming to 1,5°C, payback periods of more than a decade have become irrelevant and counterproductive¹; calls for policy measures which strengthen carbon removals and storage in ecosystems by providing land managers with competitive incentives;
34. Highlights that hard-to-abate sectors can become less dependent on fossil carbon ('defossilise') by the use of renewable carbon of biogenic origin (RCBO); supports and promotes RCBO being sustainably sourced and that it should preferably originate from biogenic waste materials; supports the use of RCBO as feedstock and not as a fuel in hard-to-abate industries;
35. Recognises that the use of nature-based materials in the construction sector can substitute for more carbon intensive conventional materials; recognises that there are trade-offs to take into account to ensure that the lifecycle of those materials does not jeopardise the existing carbon stock and does no harm to biodiversity;

V. New regulatory framework for certification of carbon removals

36. Takes note of the Commission proposal for a regulation on establishing an EU certification framework for carbon removals² aiming to ensure the high quality of carbon removals in the EU, and to establish an EU governance certification system to avoid greenwashing by correctly applying and enforcing the EU quality framework criteria in a reliable and harmonised way across the EU;
37. Takes note of the Commission's intention to put in place a framework for the identification of activities that unambiguously remove carbon from the atmosphere; stresses that this new monitoring, reporting and verification (MRV) framework, after having shown its effectiveness and reliability in delivering sustainable and long-term removals, should be the basis of further measures to incentivise those new types of carbon removal activities;

VI. Funding carbon cycling

38. Stresses that measures to increase carbon removals, whether via natural carbon sinks or through technologies, can be financed by public and/or private funds; believes that financing from the value chain could be explored;
39. Recalls that public funding under CAP, revenues generated from the EU Emissions Trading System (EU ETS) and funds from other EU programmes, such as the LIFE programme, the Cohesion Fund, the Horizon Europe programme, the Recovery and Resilience Facility, the Just Transition Fund, can already support carbon sequestering

¹ ESAC, *EASAC's Environmental Experts call for international action to restrict climate-damaging forest bioenergy schemes*.

² Proposal for a Regulation establishing a Union certification framework for carbon removals (COM(2022)0672).

and biodiversity-positive approaches in forests and agricultural lands and should be further targeted for that purpose;

40. Calls on the Commission to revise current funding options in order to reward practices which have climate and environmental benefits that are scientifically proven and lead to a sustainable and long-term increase in carbon sequestration in soils and other biogenic carbon pools while ensuring societal co-benefits; underlines that research and innovation concerning sustainable carbon cycles should be encouraged and financed, using different EU financial instruments, such as the LIFE and Horizon Europe programmes or the Innovation Fund;
41. Welcomes the increased interest of the European Investment Bank in funding climate and environment initiatives; calls for the creation of a dedicated financial instrument, which would be fully compatible with the European Green Deal objectives, for sustainable, safe, reliable and permanent carbon removals and clear ecosystem restoration outcomes that yield multiple benefits while minimising the risks; calls for this instrument to target small operators, in particular, as they do not generally have access to traditional financial services;

VII. Knowledge sharing and cooperation

42. Stresses the need for increased cooperation and exchange of information and sharing of best practices among stakeholders in order to promote better knowledge and deeper understanding of the opportunities and risks in the implementation of carbon cycling initiatives;
43. Calls for advisory services in forestry and agriculture, such as the Agricultural Knowledge and Innovation System (AKIS), to contribute broader knowledge and information to support sustainable practices that enhance carbon sequestration while promoting biodiversity and nature restoration, and to ensure easy access to this information including the use of digital solutions where relevant; calls furthermore on AKIS to set up a knowledge-sharing digital platform, providing technical advice to land managers and providing feedback to Member States;
44. Considers that, addressing the knowledge gap, especially among farmers and foresters, is essential for the effectiveness and sustainability of carbon farming; calls on the Commission and the Member States to boost knowledge transfers through targeted training and education programmes, along with access to dedicated advisory and extension services to increase the uptake of carbon farming by land managers, farmers and foresters; stresses the benefits of cooperatives in terms of investment and synergies aiming at increasing CO₂ removals; calls on Member States to allocate an appropriate amount of resources for Advisory and Technical assistance in their Rural Development Plans 2023-2027 accordingly; calls on the Commission together with the Member States to accelerate the provision of advice and technical guidance, which must take local circumstances into account;
45. Insists on the need to enhance international cooperation with third countries and international institutions in order to promote sustainable carbon removals at global level and to contribute to the goals of the Paris Agreement; encourages international political cooperation to provide adequate funding for the protection and restoration of ecosystems;

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46. Instructs its President to forward this resolution to the Council and the Commission.