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REPORT

on sustainable carbon cycles (2022/2053(INI))

Committee on the Environment, Public Health and Food Safety

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MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

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 21 October 2021 the same topic⁷,
- 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

¹OJ 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.

⁵OJ C 184, 5.5.2022, p. 2.

⁶OJ C 67, 8.2.2022, p. 25.

⁷OJ C 184, 5.5.2022, p. 105.

topic8,

- 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 topic⁹,
- 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 topic¹⁰,
- 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 topic¹¹,
- 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 topic¹²,
- having regard to its resolution of 28 April 2021 on soil protection¹³,
- having regard to its resolution of 28 November 2019 on the climate and environmental emergency¹⁴,
- 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(02020)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 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

⁸ OJ C 465, 17.11.2021, p. 11.

⁹OJ C 445, 29.10.2021, p. 156.

¹⁰ OJ C 465, 6.12.2022, p. 22.

¹¹ OJ C 506, 15.12.2021, p. 38.

¹² OJ C 371, 15.9.2021, p. 75.

¹³ OJ C 506, 15.12.2021, p. 38.

¹⁴ OJ C 232, 16.6.2021, p. 28.

- emissions are not decreasing',
- having regard to the UN Environment Programme's Emissions Gap Report 2021, published on 26 October 2021¹⁵,
- 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 services¹⁶,
- 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 2021¹⁷,
- 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 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

¹⁵ United Nations Environment Programme. *Emissions Gap Report 2021: The Heat Is On – A World of Climate Promises Not Yet Delivered*, Nairobi, 2021.

¹⁶ 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.

¹⁷ 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.

- 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 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;
- G. 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;
- H. 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;
- I. 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;
- J. 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;
- K. 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;
- L. 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;
- M. 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;
- N. 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;
- O. 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;
- P. 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;
- Q. whereas the London Protocol¹⁸ 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 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

¹⁸ 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 1972.



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; 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, or through a combination of these funding options; 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 position¹⁹ on extending the scope of the land use, land-use change and forestry (LULUCF) regulation²⁰ to include GHG emissions and removals 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

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¹⁹ Texts adopted, P9_TA(2023)0066.

²⁰ Regulation (EU) 2018/841 of 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).

- 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 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 counterproductive²¹; 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 removals²² 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 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

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²¹ESAC, <u>EASAC's Environmental Experts call for international action to restrict climate-damaging forest bioenergy schemes</u>.

²² Proposal for a Regulation establishing a Union certification framework for carbon removals (COM(2022)672).

- 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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Instructs its President to forward this resolution to the Council and the Commission. 46. PE732.708v02-00 16/37 RR\1275168EN.docx

EXPLANATORY STATEMENT

On 14 December 2021, the European Commission published the Communication on Sustainable Carbon Cycles, which sets out an action plan on how to develop sustainable solutions to increase carbon removals from the atmosphere. To balance out the impacts of our CO_2 emissions, the EU will need to drastically reduce its reliance on fossil carbon, upscale carbon farming to store more carbon in nature, and promote industrial solutions to sustainably and verifiably remove and recycle carbon. Removing and storing more carbon, from the atmosphere, oceans and coastal wetlands, is essential to achieve the EU's legally binding commitment to become climate neutral by 2050, as outlined in the European Green Deal.

The Communication includes actions to support and upscale **carbon farming** as a green business model to better reward land managers for carbon sequestration and biodiversity protection. By 2030, carbon farming initiatives should contribute to Europe's natural carbon sinks; by 2028 every land manager should have access to verified emission and removal data, and carbon farming should support the achievement of the proposed 2030 net removal target of 310 Mt CO₂eq in the land sector.

Other targets of the Communication are recycling carbon from waste streams, from sustainable sources of biomass or directly from the atmosphere, in order to use it in place of fossil carbon in the sectors of the economy that will inevitably remain carbon dependent, and scaling up carbon removal solutions that capture CO_2 from the atmosphere and store it for the long term, either in ecosystems through nature protection and carbon farming solutions or in other storage forms through industrial solutions, while ensuring no negative impact on biodiversity or ecosystem deterioration in line with the precautionary and Do No Significant Harm principles. The Communication also aims to develop blue carbon initiatives, as using nature-based solutions on coastal wetlands and regenerative aquaculture and provides further benefits for ocean regeneration and oxygen production, and food security.

As for **industrial sustainable carbon**, by 2028, any ton of CO₂ captured, transported, used and stored by industries should be reported and accounted from its origin; by 2030, at least 20% of the carbon used in products should come from sustainable non-fossil sources; and by 2030 5Mt of CO₂ should be annually removed from the atmosphere and permanently stored through technological solutions. The Commission proposes to achieve these targets by creating a standard for carbon removal in wood construction products, by publishing integrated bioeconomy land-use assessment, by offering financial support for industrial carbon removals through the Innovation Fund and Horizon Europe calls, by publishing a study on the CO₂ transport network and updated guidance documents for the CCS Directive, and by organising an annual CCUS forum.

The Commission has further announced that it will propose a regulatory EU framework for the certification (monitoring, reporting and verification) of carbon removals by the end of 2022, which should ensure the transparent identification of carbon farming and industrial solutions that unambiguously remove carbon from the atmosphere.

The rapporteur welcomes the European Commission's communication and proposes an own initiative report structured in six chapters: general considerations, carbon farming, capturing

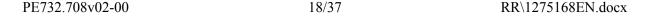
and storing carbon, the certification of carbon removals, funding the carbon cycling and cooperation in the field.

The top priority for the agriculture and forestry sector must continue to be the security of the supply of food as well as renewable raw materials. Therefore the rapporteur wants to emphasise that carbon farming can be a complementary and voluntary option to agricultural and forestry production methods and thus part of the solution in this regard. The rapporteur considers that the measures to invest in carbon cycling have to be attractive, flexible and easy to implement. Still in any case, a targeted set-aside approach is not the right way. Furthermore, the rapporteur wants to underline that certificates available through carbon farming should only be distributed to those companies, along the agricultural value chain, which have significantly contributed to mitigating climate change and will continue to do so, in order to avoid greenwashing.

The rapporteur welcomes the framework for the certification of carbon removals and underlines in his report that it should be designed as simple as possible and not lead to any disproportionate administrative burden for land and forestry managers and owners.

The rapporteur also stresses it is of utmost importance to take into account the different starting points and conditions of Member States, as they have the necessary expertise on the national and local level.

Lastly, on Carbon Capture Storage and Utilization the rapporteur believes that these future technologies can play a crucial role in achieving climate neutrality. Nevertheless, it should be taken into account that CCS is not authorised in some Member States and therefore, the European Commission should provide sufficient data on the long-term effects of CCS.



OPINION OF THE COMMITTEE ON INDUSTRY, RESEARCH AND ENERGY

for the Committee on the Environment, Public Health and Food Safety on sustainable carbon cycles (2022/2053(INI))

Rapporteur for opinion (*): Seán Kelly

(*) Associated committee – Rule 57 of the Rules of Procedure

SUGGESTIONS

The Committee on Industry, Research and Energy calls on the Committee on the Environment, Public Health and Food Safety, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

- A. whereas the European Climate Law¹ requires that greenhouse gas emissions and removals are balanced by 2050 at the latest with the aim of achieving negative emissions thereafter;
- B. whereas every tonne of fossil CO₂ that is not emitted is the best contribution to achieving climate targets; whereas the sustainable and safe development and deployment at scale of carbon removal solutions from unavoidable emissions is indispensable to climate neutrality and requires significant targeted support over the next decade for carbon capture, utilisation and storage (CCUS);
- C. whereas in order to ensure that greenhouse gas emissions and removals are balanced by 2050 at the latest, with the aim of achieving negative emissions thereafter, it will be necessary to encourage carbon capture and usage technologies, especially technologies with carbon removal capacity;
- D. whereas the EU climate neutrality objective would require the capture of between 300 megatonnes (Mt) and 500 Mt of CO₂ by 2050²;
- E. whereas the last Intergovernmental Panel on Climate Change (IPCC) Working Group III Contribution to the Sixth Assessment Report includes carbon capture and storage as a critical decarbonisation strategy in most mitigation pathways; whereas the IPCC Working Group III report also stresses that the deployment of carbon capture and storage is severely lagging behind the schedule required to meet the global climate mitigation targets;
- F. whereas the London Protocol prohibits the cross-border transport of CO₂ by sea; whereas the 2009 amendment addressing this restriction has only been adopted by five Member States;
- G. whereas policies should differentiate between biogenic and fossil carbon cycles; whereas fossil carbon must be reduced to close-to-zero level as soon as possible;
- H. whereas Horizon Europe will continue to foster innovative approaches, in particular through a major European research and innovation mission to promote soil health entitled 'A Soil Deal for Europe', as well as through its thematic clusters and the European Innovation Council (EIC);
- 1. Welcomes the Commission communication of 15 December 2021 on sustainable carbon

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¹ 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') (OJ L 243, 9.7.2021).

² Commission staff working document of 15 December 2021 entitled 'Sustainable carbon cycles for a 2050 climate-neutral EU – Technical Assessment' (SWD(2021)0451).

- cycles (COM(2021)0800);
- 2. Recalls that the European Climate Law sets the goal of net-zero emissions by 2050 at the latest and recognises the need to drastically reduce fossil carbon reliance starting this decade and envisages new business models for carbon farming; recalls the importance of tackling carbon embedded in products;
- 3. Supports the Commission's approach on carbon removals before 2030 and the improvement in climate accounting by 2028;
- 4. Reiterates the role of Horizon Europe missions and the EIC in fostering research into new breakthrough technologies and game-changing innovations, while ensuring the protection of the environment and of high levels of human health, including research into capture, transport, storing or reusing technologies, as well as technical and nature-based carbon removal and storage opportunities; supports the EIC Accelerator Challenge 'Technologies for "Fit for 55" for the development and scaling up of sustainable agriculture in order to increase climate resilience, abate nitrogen and methane emissions, and increase the carbon stock in the soil;
- 5. Insists on the fostering of innovative solutions to achieve the Green Deal commitments on climate, biodiversity and zero pollution, and asks that research activities be focused on supporting rural areas and fair access to healthy food; encourages the Commission and the Member States to ensure cross-disciplinary cooperation between national and regional research institutions, scientists, farmers and small and medium-sized enterprises, which is aimed at achieve sustainable food and farming systems;
- 6. Considers that carbon capture and storage can play a role in capturing and safely and permanently storing unavoidable emissions where no direct emissions reduction options are available; supports the increased size of the Innovation Fund for the deployment at scale of innovative zero- and low-carbon technologies to support industrial carbon removal and the possibility of carbon contracts for difference (CCfD) as a means of investment in innovative clean technologies, as well as in carbon removal and storage opportunities; calls on the Commission to better support industrial carbon removals with the Innovation Fund;
- 7. Stresses that carbon removals are part of the solution to climate change but should not substitute actions to reduce emissions, and notes that carbon sinks must also be increased in addition to emission reductions; highlights the need to recycle carbon from waste streams, from sustainable sources of biomass or directly from the atmosphere; recognises the role of bioenergy with carbon capture and storage (BECCS) in achieving the EU's climate goals by removing carbon from the atmosphere; calls on the Commission to better support the use of carbon from recycling and biogenic origin;
- 8. Emphasises that many products in circulation when taken together represent a major reservoir of carbon that is often released at the end-of-life phase; calls on the Commission to support the industrial scaling up of initiatives aimed at gradually replacing fossil carbon with sustainable streams of renewable and recycled carbon through financial support and regulation; welcomes the aspirational 20 % target for plastics and chemicals coming from non-fossil carbon; emphasises that this target can only be achieved if EU legislation creates a supportive framework by differentiating on

- the basis of the origin of the carbon; invites the Commission to establish a methodology for calculating the share of sustainable non-fossil carbon;
- 9. Reiterates that progress made in one sector should not compensate for the lack of progress in other sectors; supports the further promotion, including through 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 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. 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;
- 11. Highlights the importance of European leadership and the need for a competitive CCUS market and CO₂ removals with financial incentives that support commercial deployment before 2030, underpinned by clear definitions and safeguards; further highlights the importance of energy saving and energy efficiency measures in the electrification of the EU economy and in boosting renewables;
- 12. Calls on the Commission to adopt a strategy for carbon capture and storage by the end of 2023, including a comprehensive plan and targets to ensure the deployment of these technologies in the time frame required for the decarbonisation of Europe; invites the Commission to develop common standards and rules for monitoring, reporting and verifying the gains or losses in carbon sequestered through a robust network for data collection, ensuring the successful upscaling of carbon farming and establishing long-term business perspectives; stresses that the Commission's upcoming proposal for the certification of carbon removals should come on top of efforts to reduce emissions and should clearly differentiate between short-cycle removal and long-term removal; stresses that there should be no fungibility between these types of removal;
- 13. Highlights that an important element of any policy framework for carbon removals will be the development of new CO₂ transport and storage networks and infrastructures in the EU, connecting industrial emitters with CO₂ storage capacity, in order to achieve decarbonisation of hard-to-abate sectors, as well as carbon removals in the context of BECCS and direct air capture (DAC); calls on the Commission to formulate a plan, with clear milestones, to develop the CO₂ storage and transport infrastructure needed in Europe as part of the strategy for carbon capture and storage, including the development of industrial CCUS clusters with shared CO₂ transport and storage infrastructure, providing a basis to further expand CO₂ networks consistent with net-zero pathways and aiming to support economies of scale and facilitate CO₂ capture for a larger number of smaller industrial facilities; calls on the Commission to coordinate the mapping of Member States' national storage resources and to take steps to identify commercially viable storage sites; urges the Commission to encourage Member States to ratify the amendment to the London Protocol; calls on the Commission to develop guidelines for bilateral agreements on permits for the export and import of CO₂ for storage;

- 14. 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;
- 15. Calls on the Commission to propose a framework for carbon removal, including CCUS, with clear targets, such as on the amount of CO₂ captured and stored in Europe or the overall European storage capacity, as well as with requirements on monitoring, reporting and verification based on scientific criteria, life-cycle, circular and carbon supply chain considerations, that is sufficiently flexible to accommodate new technologies, while also taking the up- and downstream emissions of a removal process into account;
- 16. Calls on the Commission to present short-term actions to upscale carbon farming, including 'blue carbon', as a business model that incentivises practices on natural ecosystems that increase carbon sequestration, and to foster a new industrial value chain for the sustainable capture, recycling, transport and storage of carbon.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	26.10.2022
Result of final vote	+: 43 -: 11 0: 5
Members present for the final vote	Matteo Adinolfi, Nicola Beer, François-Xavier Bellamy, Hildegard Bentele, Tom Berendsen, Vasile Blaga, Michael Bloss, Marc Botenga, Cristian-Silviu Buşoi, Jerzy Buzek, Josianne Cutajar, Nicola Danti, Marie Dauchy, Christian Ehler, Valter Flego, Niels Fuglsang, Lina Gálvez Muñoz, Jens Geier, Nicolás González Casares, Christophe Grudler, Robert Hajšel, Ivo Hristov, Romana Jerković, Eva Kaili, Seán Kelly, Łukasz Kohut, Zdzisław Krasnodębski, Miapetra Kumpula-Natri, Thierry Mariani, Marisa Matias, Georg Mayer, Marina Mesure, Dan Nica, Niklas Nienaß, Ville Niinistö, Johan Nissinen, Mauri Pekkarinen, Pina Picierno, Clara Ponsatí Obiols, Manuela Ripa, Robert Roos, Sara Skyttedal, Beata Szydło, Patrizia Toia, Isabella Tovaglieri, Henna Virkkunen, Pernille Weiss
Substitutes present for the final vote	Andrus Ansip, Franc Bogovič, Pilar del Castillo Vera, Klemen Grošelj, Ladislav Ilčić, Elena Lizzi, Luděk Niedermayer, Jutta Paulus, Bronis Ropė, Jordi Solé
Substitutes under Rule 209(7) present for the final vote	Andrey Kovatchev, Aušra Maldeikienė

INFORMATION ON ADOPTION IN COMMITTEE RESPONSIBLE

Date adopted	1.3.2023
Result of final vote	+: 64 -: 6 0: 8
Members present for the final vote	Maria Arena, Bartosz Arłukowicz, Margrete Auken, Simona Baldassarre, Marek Paweł Balt, Traian Băsescu, Aurélia Beigneux, Hildegard Bentele, Sergio Berlato, Alexander Bernhuber, Michael Bloss, Delara Burkhardt, Sara Cerdas, Mohammed Chahim, Tudor Ciuhodaru, Maria Angela Danzì, Esther de Lange, Christian Doleschal, Bas Eickhout, Cyrus Engerer, Agnès Evren, Heléne Fritzon, Malte Gallée, Gianna Gancia, Andreas Glück, Catherine Griset, Teuvo Hakkarainen, Anja Hazekamp, Martin Hojsík, Jan Huitema, Yannick Jadot, Adam Jarubas, Ewa Kopacz, Joanna Kopcińska, Peter Liese, Sylvia Limmer, Javi López, César Luena, Liudas Mažylis, Marina Mesure, Tilly Metz, Dolors Montserrat, Alessandra Moretti, Ville Niinistö, Ljudmila Novak, Grace O'Sullivan, Jutta Paulus, Stanislav Polčák, Jessica Polfjärd, Erik Poulsen, Luisa Regimenti, María Soraya Rodríguez Ramos, Christine Schneider, Ivan Vilibor Sinčić, Maria Spyraki, Nicolae Ştefănuţă, Nils Torvalds, Edina Tóth, Véronique Trillet-Lenoir, Achille Variati, Petar Vitanov, Alexandr Vondra, Mick Wallace, Pernille Weiss, Emma Wiesner, Michal Wiezik, Anna Zalewska
Substitutes present for the final vote	Beatrice Covassi, Romana Jerković, Stelios Kympouropoulos, Marisa Matias, Dan-Ștefan Motreanu, Idoia Villanueva Ruiz
Substitutes under Rule 209(7) present for the final vote	Marie Dauchy, Luke Ming Flanagan, Marina Kaljurand, Alice Kuhnke, Katarína Roth Neveďalová

FINAL VOTE BY ROLL CALL IN COMMITTEE RESPONSIBLE

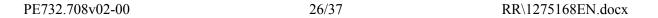
43	+
ECR	Ladislav Ilčić, Zdzisław Krasnodębski, Beata Szydło
ID	Matteo Adinolfi, Elena Lizzi, Georg Mayer, Isabella Tovaglieri
PPE	François-Xavier Bellamy, Hildegard Bentele, Tom Berendsen, Vasile Blaga, Franc Bogovič, Cristian-Silviu Buşoi, Jerzy Buzek, Pilar del Castillo Vera, Christian Ehler, Seán Kelly, Andrey Kovatchev, Aušra Maldeikienė, Luděk Niedermayer, Sara Skyttedal, Henna Virkkunen, Pernille Weiss
RENEW	Andrus Ansip, Nicola Beer, Nicola Danti, Valter Flego, Klemen Grošelj, Mauri Pekkarinen
S&D	Josianne Cutajar, Niels Fuglsang, Lina Gálvez Muñoz, Jens Geier, Nicolás González Casares, Robert Hajšel, Ivo Hristov, Romana Jerković, Eva Kaili, Łukasz Kohut, Miapetra Kumpula-Natri, Dan Nica, Pina Picierno, Patrizia Toia

11	-
ECR	Robert Roos
THE LEFT	Marc Botenga, Marisa Matias, Marina Mesure
VERTS/ALE	Michael Bloss, Niklas Nienaß, Ville Niinistö, Jutta Paulus, Manuela Ripa, Bronis Ropė, Jordi Solé

5	0
ECR	Johan Nissinen
ID	Marie Dauchy, Thierry Mariani
NI	Clara Ponsatí Obiols
RENEW	Christophe Grudler

Key to symbols:

+ : in favour
- : against
0 : abstention



OPINION OF THE COMMITTEE ON AGRICULTURE AND RURAL DEVELOPMENT

for the Committee on the Environment, Public Health and Food Safety

on Sustainable Carbon Cycles (2022/2053(INI))

Rapporteur for opinion (*): Martin Hlaváček

(*) Associated committee – Rule 57 of the Rules of Procedure

SUGGESTIONS

The Committee on Agriculture and Rural Development calls on the Committee on the Environment, Public Health and Food Safety, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

- A. Whereas achieving climate neutrality requires neutrality in the land sector as well as a cut in greenhouse gas (GHG) emissions from the agriculture and forestry sector, while safeguarding the EU's strategic food security;
- 1. Welcomes the launch of the carbon farming initiative, as announced in the Farm to Fork strategy and the new EU forest strategy, which aims to achieve climate neutrality by 2050 as enshrined in the European Climate Law, and by 2035 in the entire EU land sector, and thus has the goal of making EU agriculture carbon-negative, such that it would store more carbon than it emitted; highlights that sizeable net carbon removals are possible through the deployment and facilitation of carbon-farming solutions²⁵;
- 2. Stresses that each sector must first and foremost reduce its own CO₂ emissions independently and only use the storage capacity of other sectors, such as agriculture and forestry, for emissions that cannot be reduced;
- 3. Underlines the importance of carbon farming as a new business model option for EU agriculture which can provide new and complementary sources of income as recompense for additional results achieved through supplementary activities to scale up climate mitigation and emissions reductions from incentive-based climate and biodiversity-friendly farm or forest management practices; notes that these will ultimately be more market based rather than dependent on public funding, and will provide opportunities in rural and remote areas for land managers active in crop and livestock production; highlights that the commitment of the entire food value chain will

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²⁵ 'Solutions are available to reverse this decline and to return quickly to past levels of net carbon removals well above 300 MtCO2eq, but their deployment needs to be facilitated' (European Commission COM(2021)0800 final of 15 December 2021).

- be essential to ensure that farmers achieve fair compensation in terms of their share of the market value;
- 4. Underlines the necessity, when evaluating climate change mitigation practices, of taking into account preliminary work on this issue, Member States' different starting points and conditions, and the behaviour of carbon under various conditions likely under climate change, such as flooding and drought;
- 5. Highlights the need to ensure that there is one single market structure developed by the Commission where credits can be traded and verified centrally, precluding the establishment of alternative markets that could undermine the value of genuine carbon credits:
- 6. Stresses the need for public and private certification schemes to establish or facilitate financially attractive new incentives, in addition to those provided for in the common agricultural policy, at the level of land managers, especially farmers, foresters, cooperatives, communities and local authorities, to facilitate or accelerate the uptake of carbon farming by setting up ecosystem service payments under public funding as well as allowing private funding to support the various benefits of the carbon removal certification; welcomes the possibility of extending the financial support provided, including private-sector support; highlights that certification must be based on scientifically robust requirements and accounting rules in terms of measurement quality, monitoring standards, reporting protocols and means of verification, ensuring environmental integrity and avoiding negative impacts on biodiversity and ecosystems;
- 7. Highlights that ensuring access to fair prices for farmers should be a priority and is the most appropriate form of supporting a just transition to positive agricultural practices for climate change, biodiversity and food and thus for the transition towards sustainability, food security and food sovereignty and that carbon farming has to go in that direction;
- 8. Recalls the fact that carbon farming practices provide additional environmental and societal co-benefits, such as reducing GHG emissions through land-use and farming practices that can sequester carbon in natural sinks and such as appropriately designed and implemented conservation agriculture, direct seeding, catch and cover crops, use of fertilisers of biological origin, conversion back to permanent grassland and restoration of peatlands as well as sustainable forest management and agroforestry and the incorporation of innovative practices and alternatives in crop and livestock production such as animal nutrition and welfare, enhancing biodiversity, improving soil quality and water retention, enhancing ecosystem services and increasing the resilience of EU agriculture; recognises the need to facilitate the development of enhanced carbon schemes that take into account the co-benefits associated with certain carbon farming practices, for which the market should be prepared to pay a premium price;
- 9. Stresses that in the context of the current disruption to the supply chain, owing particularly to the COVID-19 pandemic and Russia's war on Ukraine, it is vital to avoid imposing additional administrative and financial burdens on farmers, and calls on the Commission to identify mechanisms for facilitating the transition to a voluntary model of carbon farming for all participants in the agri-food chain;

- 10. Stresses the importance of maintaining consistency across all measures under EU policies, in particular the common agriculture policy (CAP), to ensure that enabling conditions are created for the voluntary scale-up of effective carbon farming via carbon credits issued on a dedicated market, allowing private funds to finance practices implemented by farmers, and to allow equal access for all farmers and foresters across Member States; underlines that this includes the integration of carbon farming into CAP national strategic plans in line with Member States' ongoing assessments so as to ensure that local natural conditions are adequately reflected; furthermore insists that the new carbon capture business model must deliver practices complementary and additional to those delivered by the CAP; stresses the need to consider the best way to encourage farmers and forest managers, and to not penalise those who have already undertaken efforts to maintain carbon in their soils;
- 11. Points out that prices per tonne of carbon in Europe range from EUR 30 to EUR 50, whereas they are much lower in third countries; takes the view that, as a result, there will need to be numerous positive practices in the EU in order to ensure that the European market is attractive;
- 12. Recalls that there are over 300 different soil types in various states of health across the EU, which are subject to different limiting factors for carbon sequestration, and that, consequently, soil carbon uptake research needs to be supported and financed, for example through the LIFE and Horizon Europe programmes;
- 13. Underlines the importance of creating new public and private funds and financial incentives, in addition to established CAP funds, so as to stimulate action on emissions reductions and to improve cooperation, knowledge transfer and training among land managers and other stakeholders; underlines also the role of public actors, the sharing of best practices via the revitalised EIP-AGRI platform, the covering of additional costs entailed by monitoring, reporting and verification (MRV), and better synergies between the different EU funding programmes essential to scale up carbon farming and to achieve the 2050 climate targets;
- 14. Underlines the importance of CAP funds in stimulating action on emissions reductions by providing funding to improve knowledge and cooperation among land managers; underlines that carbon storage is already being used in many areas through the implementation of the CAP; emphasises that the land and forestry sector have a natural maximum carbon storage capacity that has not yet been properly evaluated, and that there are significant differences in the rate of absorption by carbon sinks and the retention of the stored carbon versus emissions from soil that are linked to specific soil conditions; notes in particular that in waterlogged soils, carbon sinking only occurs on the very surface due to anaerobic conditions and that drought may mineralise soil carbon or cause other GHG emissions;
- 15. Notes that access to land, and particularly the price of land, is one of the main obstacles for new and young farmers; calls on the Commission to thoroughly assess the impact on access to land of carbon markets based on carbon farming;
- 16. Stresses that carbon MRV still need to be further developed in order to accurately capture specific details of real-farm situations; welcomes the commitment to ensure

transparency and accountability by establishing a robust science-based EU regulatory framework for measurement, the accounting and certification of additional carbon removals and the permanence of storage in soils as a key condition to ensure market-based uptake of carbon removal solutions and to avoid double counting while safeguarding EU public funds in line with Article 6 of the Paris Agreement and outcomes of the 2021 Glasgow COP26 Summit;

- 17. Welcomes the commitment to ensuring transparency and accountability by establishing a robust science-based EU regulatory framework, along with an impact assessment with stakeholder consultation, for the accounting and certification of carbon removals;
- 18. Calls on the Commission to clearly define additionality criteria for projects to be developed under the European certification framework; notes that these projects must enable the implementation of GHG emission reduction and carbon absorption practices that go beyond:
 - the obligations arising from the legislative and regulatory texts in force,
 - the various incentives that exist, in particular economic incentives, whatever their origin,
 - common practice in the relevant sector of activity;
- 19. Underlines that the new certification framework for carbon farming should be as simple as possible in its design and not result in disproportionate administrative burdens for land and forestry managers and owners; points out that the future certification framework should take into account existing national initiatives and their operating structures, preserving those that have proven their effectiveness according to the best available science and in line with the required criteria; calls on the Commission to expand the scope for soil-related GHG abatement through the promotion of carbon-friendly farming practices and considers that despite the great need for private companies to reliably offset their carbon footprint, emissions from all sectors must be reduced and offsetting emissions by means of carbon sinks must not diminish this ambition;
- 20. Underlines the need to take into account other relevant international private sector initiatives, without compromising the robustness and rigour of the EU initiative and to stimulate B2B markets for trade in agricultural sequestered CO₂ or the promotion of crop management practices that enhance carbon sequestration, such as regenerative agriculture or other sustainability schemes;
- 21. Recognises the need for carbon farming measures to be centred based on local, regional and national data that takes into account the different climate and soil types, and land management practices in the Member States;
- 22. Stresses the need for a credible certification system for the quantification and certification of carbon removals that can be applied at farm level and that avoids greenwashing and carbon leakage; underlines the need to promote high-quality carbon certificates that can ensure the achievement of the criteria of additionality, permanence, no double counting, sustainability and authenticity to ensure credibility and prevent

- fraudulent payments and to incentivise improved land management practices, so as to boost carbon capture;
- 23. Highlights the significant carbon abatement potential of rewetting peatlands; recognises that in order for these actions to work effectively, they must operate on a voluntary basis and fully reward the true value of the carbon abated while also recognising the economic loss endured from the change in existing activities;
- 24. Emphasises the need for the Commission to also, in parallel with the regulatory framework for certification of carbon removals, reflect upon as requested by the European Parliament in its position of 6 October 2020 on the EU Climate Law options for future market design for trading of agriculture sequestration and mitigation credits that count towards EU reduction and removal targets;
- 25. Asks the Commission to draft a comprehensive list of monitoring methods, such as LiDAR and flux towers, being used across Member States to measure and monitor emissions in the agriculture and forestry sectors;
- 26. Stresses that existing and future legislation, by making certain actions mandatory, should not preclude these actions from carbon farming practices on an additionally clause, thus undermining the potential of these actions to be achieved through the incentivisation of carbon farming;
- 27. Calls for the establishment of robust, straightforward, transparent and accessible methodology based on a solid body of peer-reviewed science that ensures accurate and fraud-free MRV so the resources invested in carbon farming reach farmers and foresters, that clearly includes their emissions reduction and that does not allow for speculative trading while ensuring the objective measurement and certification of additional carbon removals across sectors in order to create harmonised criteria for the calculation, capture, use and storage of carbon dioxide (CO₂), nitrous oxide (N₂O) and methane (CH₄); underlines the need for standard methodologies and rules for MRV of gains, or losses, in carbon sequestration, and stresses that private certification schemes need to be able to adapt these harmonised methodologies to local conditions so as to accommodate new technologies while ensuring a level playing field; stresses that onfarm carbon diagnostic professionals should initially be publicly funded; highlights the importance of increased funding for innovation and research in EU programmes;
- 28. Stresses that financial incentives should come primarily from private sources and should reward land managers for their management practices or the actual amount of carbon sequestered, or for increasing the storage of atmospheric carbon; underlines that public funding under the CAP and other Union programmes, such as the LIFE programme, the Cohesion Fund, the Horizon Europe programme, the Recovery and Resilience Facility and the Just Transition Fund, can already support carbon sequestration and biodiversity-friendly approaches in forests and agricultural lands and should be stepped up and made consistent with the CAP's food security goals;
- 29. Underlines that the permanence of carbon storage in soils is one of the main issues of carbon farming as an efficient way to limit the concentration of GHGs in the atmosphere; notes that a system rewarding carbon storage in soils but allowing later release of said carbon (ploughing of pastures, drying of wetlands, large clear cuts, etc.)

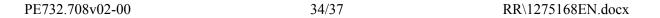
would be useless in the fight against climate change; recalls notably that land managers change and retire, and that land ownership and renting are national competences, and rules vary considerably from one Member State to the other; calls on the Commission to assess closely the impact of such issues on the retention and permanence of any carbon sunk;

- 30. Highlights the problems associated with permanent storage and, in particular, the leakage that may occur because of natural disasters; takes the view that the Commission's model must take account of the need for certainty, both financial and legal, for farmers who have reduced or removed GHG emissions on their holdings;
- 31. Underlines the role of producer organisations such as farming cooperatives in joint implementation of practices enabling their members to promote carbon sequestration in a collective and coordinated way, increasing their effectiveness and sharing the cost of implementation and MRV;
- 32. Stresses that payments must be provided to farmers for efforts as well as results, taking into account that, due to natural circumstances and changes, results may differ over time and from one place to another;
- 33. Calls on the Commission to ensure the full involvement of farmers as primary stakeholders in drawing up the framework for the standardisation of carbon removal certification, and to ensure that the administrative burden in the framework is kept to a minimum;
- 34. Calls on the Commission to make full use of the expert group it plans to set up in order to benefit from existing experience in this area;
- 35. Considers that addressing the knowledge gap, especially among farmers and foresters, is essential to creating an efficient certification framework for carbon removals via carbon farming; calls on the Member States to boost knowledge transfers through targeted training and education programmes and access to dedicated and independent advisory and extension services to promote an increase in the uptake of carbon farming and a reduction in emissions from holdings, including agroecology and organic farming and other carbon- and biodiversity-friendly practices and nature-based solutions, by land managers, farmers and foresters; calls, in this regard, on Member States to ring-fence appropriate amounts of resources for advisory and technical assistance in their rural development plans for 2023-2027 accordingly;
- 36. Believes that collective and cooperative approaches, shared on-farm training, soil sampling and analysis, transaction costs, investment in new machinery, measurements, and verifications costs of MRV tools would help scale up carbon farming among land managers particularly in results-based carbon farming schemes;
- 37. 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 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;
- 38. Welcomes the Commission's newly created expert group on carbon removals, which

- brings together public- and private-sector experts in the field of carbon removals, covering both industrial and nature-based carbon removal initiatives (carbon farming); calls on the Commission to communicate and disseminate the expert group's outputs, particularly as regards knowledge exchange and best practices;
- 39. Stresses the role of bio-energy carbon capture and storage (BECCS) through the combustion or fermentation of biogenic carbon, with the aim of providing private and public funds as an additional means of removing carbon from the atmosphere; recalls the need for further research into BECCS to verify its soundness as a technology; stresses also the potential of BECCS when it comes to additional removal of carbon from bio-energy, so as to create truly negative emissions; notes that the functional carbon market will create a need for better technology and innovations in BECCS practices;
- 40. Reiterates in this connection Parliament's resolution of 24 March 2022 on the need for an urgent EU action plan to ensure food security inside and outside the EU in light of the Russian invasion of Ukraine, in particular with regard to fertiliser;
- 41. Calls for the use of innovative sustainable, circular and long-lasting bio-based carbon products that mitigate climate change by trapping carbon in the circular bio-economy to be incentivised, including, if relevant, by appropriately amending the relevant EU legislative framework and taking into account indirect and supply chain emissions related to sequestration, biomass production, transportation, refining, capturing and storing that these emissions incur and taking advantage of the policy for boosting biomethane within the Commission proposal to end reliance on Russian fossil fuels before 2030, RePowerEU, in line with the 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 scientifically proven, genuine and verifiable long-term carbon sequestration effect, backed up by a solid body of peer-reviewed science;
- 42. Stresses also the need to develop research and innovation on farms so as to ensure the implementation of positive practices by farmers, in particular through innovative animal nutrition or irrigation solutions;
- 43. Calls on the Commission to address existing legislative barriers so as to ensure that farmers can effectively re-use animal manure to contribute to enhancing organic carbon in the soil.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	25.10.2022
Result of final vote	+: 36 -: 10 0: 1
Members present for the final vote	Mazaly Aguilar, Clara Aguilera, Atidzhe Alieva-Veli, Álvaro Amaro, Attila Ara-Kovács, Carmen Avram, Adrian-Dragoş Benea, Benoît Biteau, Daniel Buda, Isabel Carvalhais, Asger Christensen, Ivan David, Jérémy Decerle, Salvatore De Meo, Herbert Dorfmann, Luke Ming Flanagan, Dino Giarrusso, Martin Häusling, Martin Hlaváček, Krzysztof Jurgiel, Jarosław Kalinowski, Elsi Katainen, Camilla Laureti, Gilles Lebreton, Norbert Lins, Elena Lizzi, Chris MacManus, Colm Markey, Marlene Mortler, Ulrike Müller, Maria Noichl, Juozas Olekas, Eugenia Rodríguez Palop, Bronis Ropė, Bert-Jan Ruissen, Anne Sander, Simone Schmiedtbauer, Annie Schreijer-Pierik, Veronika Vrecionová, Sarah Wiener, Juan Ignacio Zoido Álvarez
Substitutes present for the final vote	Franc Bogovič, Rosanna Conte, Marie Dauchy, Anna Deparnay-Grunenberg, Alin Mituţa
Substitutes under Rule 209(7) present for the final vote	Estrella Durá Ferrandis



FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

36	+
ECR	Mazaly Aguilar, Krzysztof Jurgiel, Bert-Jan Ruissen, Veronika Vrecionová
ID	Rosanna Conte, Marie Dauchy, Gilles Lebreton, Elena Lizzi
PPE	Álvaro Amaro, Franc Bogovič, Daniel Buda, Salvatore De Meo, Herbert Dorfmann, Jarosław Kalinowski, Norbert Lins, Colm Markey, Marlene Mortler, Anne Sander, Simone Schmiedtbauer, Annie Schreijer-Pierik, Juan Ignacio Zoido Álvarez
RENEW	Atidzhe Alieva-Veli, Asger Christensen, Jérémy Decerle, Martin Hlaváček, Elsi Katainen, Alin Mituţa, Ulrike Müller
S&D	Clara Aguilera, Attila Ara-Kovács, Carmen Avram, Adrian-Dragoş Benea, Isabel Carvalhais, Estrella Durá Ferrandis, Camilla Laureti, Juozas Olekas

10	-
ID	Ivan David
S&D	Maria Noichl
THE LEFT	Luke Ming Flanagan, Chris MacManus, Eugenia Rodríguez Palop
VERTS/ALE	Benoît Biteau, Anna Deparnay-Grunenberg, Martin Häusling, Bronis Ropė, Sarah Wiener

1	0
NI	Dino Giarrusso

Key to symbols: + : in in favour against abstention

PROCEDURE COMMITTEE RESPONSIBLE

Date adopted	1.3.2023
Result of final vote	+: 64 -: 6 0: 8
Members present for the final vote	Maria Arena, Bartosz Arłukowicz, Margrete Auken, Simona Baldassarre, Marek Paweł Balt, Traian Băsescu, Aurélia Beigneux, Hildegard Bentele, Sergio Berlato, Alexander Bernhuber, Michael Bloss, Delara Burkhardt, Sara Cerdas, Mohammed Chahim, Tudor Ciuhodaru, Maria Angela Danzì, Esther de Lange, Christian Doleschal, Bas Eickhout, Cyrus Engerer, Agnès Evren, Heléne Fritzon, Malte Gallée, Gianna Gancia, Andreas Glück, Catherine Griset, Teuvo Hakkarainen, Anja Hazekamp, Martin Hojsík, Jan Huitema, Yannick Jadot, Adam Jarubas, Ewa Kopacz, Joanna Kopcińska, Peter Liese, Sylvia Limmer, Javi López, César Luena, Liudas Mažylis, Marina Mesure, Tilly Metz, Dolors Montserrat, Alessandra Moretti, Ville Niinistö, Ljudmila Novak, Grace O'Sullivan, Jutta Paulus, Stanislav Polčák, Jessica Polfjärd, Erik Poulsen, Luisa Regimenti, María Soraya Rodríguez Ramos, Christine Schneider, Ivan Vilibor Sinčić, Maria Spyraki, Nicolae Ştefănuță, Nils Torvalds, Edina Tóth, Véronique Trillet-Lenoir, Achille Variati, Petar Vitanov, Alexandr Vondra, Mick Wallace, Pernille Weiss, Emma Wiesner, Michal Wiezik, Anna Zalewska
Substitutes present for the final vote	Beatrice Covassi, Romana Jerković, Stelios Kympouropoulos, Marisa Matias, Dan-Ștefan Motreanu, Idoia Villanueva Ruiz
Substitutes under Rule 209(7) present for the final vote	Marie Dauchy, Luke Ming Flanagan, Marina Kaljurand, Alice Kuhnke, Katarína Roth Neveďalová

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FINAL VOTE BY ROLL CALL IN COMMITTEE RESPONSIBLE

64	+
ECR	Sergio Berlato, Alexandr Vondra
ID	Simona Baldassarre, Gianna Gancia
NI	Maria Angela Danzì, Edina Tóth
PPE	Bartosz Arłukowicz, Traian Băsescu, Hildegard Bentele, Alexander Bernhuber, Christian Doleschal, Agnès Evren, Adam Jarubas, Ewa Kopacz, Stelios Kympouropoulos, Esther de Lange, Peter Liese, Liudas Mažylis, Dolors Montserrat, Dan-Ștefan Motreanu, Ljudmila Novak, Stanislav Polčák, Jessica Polfjärd, Luisa Regimenti, Christine Schneider, Maria Spyraki, Pernille Weiss
Renew	Andreas Glück, Martin Hojsík, Jan Huitema, Erik Poulsen, María Soraya Rodríguez Ramos, Nicolae Ștefănuță, Nils Torvalds, Véronique Trillet-Lenoir, Emma Wiesner, Michal Wiezik
S&D	Maria Arena, Marek Paweł Balt, Delara Burkhardt, Sara Cerdas, Mohammed Chahim, Tudor Ciuhodaru, Beatrice Covassi, Cyrus Engerer, Heléne Fritzon, Romana Jerković, Marina Kaljurand, Javi López, César Luena, Alessandra Moretti, Katarína Roth Neveďalová, Achille Variati, Petar Vitanov
Verts/ALE	Margrete Auken, Michael Bloss, Bas Eickhout, Malte Gallée, Yannick Jadot, Alice Kuhnke, Tilly Metz, Ville Niinistö, Grace O'Sullivan, Jutta Paulus

6	-
The Left	Luke Ming Flanagan, Anja Hazekamp, Marisa Matias, Marina Mesure, Idoia Villanueva Ruiz, Mick Wallace

8	0
ECR	Joanna Kopcińska, Anna Zalewska
ID	Aurélia Beigneux, Marie Dauchy, Catherine Griset, Teuvo Hakkarainen, Sylvia Limmer
NI	Ivan Vilibor Sinčić

Key to symbols:

+ : in favour
- : against
0 : abstention