

Integrating greenhouse gas removals in the UK Emissions Trading Scheme: Carbon Gap's response

[Carbon Gap](#) is an independent, Brussels and UK-based non-profit [organisation](#) supporting Europe's unique opportunity to lead the responsible deployment of carbon dioxide removal (CDR) to fight climate change through independent and science-led advice.

SUMMARY OF CARBON GAP'S RESPONSE

Carbon Gap welcomes the detailed proposal on options for integrating greenhouse gas removals (GGRs) into the UK Emissions Trading Scheme (ETS). The detailed thinking presented by the UK government is a valuable contribution to the policy discussion on GGR/CDR integration into ETSS, which will undoubtedly inform a richer discussion of policy options internationally.

Carbon Gap sees a critical need for a compliance mechanism(s) to support the scale-up of, and establish rules for, GGR. Carbon Gap is still undertaking research to examine if ETS integration, or an alternative mechanism such as a dedicated Removals Trading System (RTS), would be most appropriate for meeting these goals. In general, Carbon Gap finds that a compliance mechanism alone is unlikely to deliver sufficient volumes of high-quality GGR at pace, requiring consideration of additional policy interventions such as government procurement of GGR.

Discussions on ETS integration remain at an early stage and our response to this consultation represents an initial position and a basis for discussion, building on our core principles – high integrity climate action, durable net zero, limiting mitigation deterrence, and maximising the scale-up opportunity for CDR.

Key strengths of the UK government's proposal include:

- **Cap Option 2.** The minded-to position to pursue cap Option 2, at least initially, is an effective way of managing certain sources of mitigation deterrence (assuming the price of GGRs remains sufficiently high). GGR integration should not be used to increase the overall cap, as in Option 1, as this would undermine the carbon price signal of the ETS. We recognise certain benefits of Option 3, which can ensure an ongoing market for GGRs and potentially facilitate an eventual negative cap, but also the uncertainty it may introduce to overall allowance supply. Carbon Gap is exploring how these objectives could be achieved outside the ETS, for instance as part of an RTS dedicated to GGR. Adopting Option 2 in the near term can provide much-needed demand-pull for GGRs and bring down net emissions on the journey to net zero, while targeting a negative cap in the long term.
- **Ex-post restriction.** The minded-to position to focus on ex-post units will ensure more accurate accounting and further limit mitigation deterrence.
- **Focus on UK GGRs (partial support).** A focus on UK GGRs will enable greater oversight of projects and allow high standards to be enforced. However, eventually establishing linkages to the EU ETS, or other ETSS or GGR sources, as long as these meet the same high standards, would add liquidity to the GGR supply and allow UK-based GGRs to find a wider array of compliance buyers.

Carbon Gap also has some serious concerns with the proposal. These include:

- **Woodland integration.** Carbon Gap is deeply concerned with the proposal to integrate “high quality nature-based GGRs”, starting with GGRs from UK woodland, into the UK ETS. To reach a durable state of net zero, only removal methods that can provide high durability, low risk of reversal, and precisely measurable carbon dioxide storage would be appropriate for matching against the fossil emissions that are priced under the UK ETS. A growing body of literature is evidencing the fragility of natural sinks to increased natural disturbances (due to climate change) across the globe and in Europe. Carbon Gap believes that the proposed permanence framework, particularly the use of fungibility measures, cannot deliver the climate impact guaranteed by more permanent removals. For this reason, it is not advisable to include woodland units into the UK ETS. A strong permanence threshold of centuries to millennia at minimum, combined with strong liability measures in case of reversal, should be adequate to manage permanence, reducing the need for fungibility measures that involve risky value judgements about storage and intergenerational burdens.
- **Inadequate market size.** As presented, the proposal is not likely to deliver the consistent and high-confidence price signal necessary to drive substantial volumes of higher-durability carbon removal in the requisite timeframe. There is no incentive for buyers to purchase GGR over other types of units, and the likelihood of buyers doing so voluntarily is overestimated (due to knowledge gaps as well as uncertainty about the impacts and costs of different GGRs). The cited example of Frontier purchases does not represent market behaviour at large, and ETS entities differ from voluntary market buyers in crucial ways. If GGRs are to be differentiated from UKAs, we do not expect that compliance buyers at large would voluntarily invest additional effort to navigate the GGR market to meet their obligations.

Carbon Gap’s proposals to enhance the opportunity for GGR while securing climate integrity include the following:

- **A GGR incentive or sub-mandate** – The government should consider a mandatory requirement for ETS participants to use GGR to cover an increasing share of their ETS obligations, starting as a small share of obligations and increasing over time. This is especially needed if GGRs are to be differentiated from UKAs, as it would allow a clearer price signal to emerge in the GGR market.
- **Carbon Clearing House** – Carbon Gap calls for an intermediary institution such as a Carbon Clearing House, to streamline the market for suppliers and buyers, and provide greater control over the portfolio and scale of GGR coming forward in the UK. The Clearing House could be based on, and preceded by, a shorter-term pilot programme to procure GGR that would help establish good practices.
- **Measures to increase market size** – A long-term negative cap and expansion to a wider array of sectors would enhance the market opportunity for GGR. This could also be achieved with a complementary mechanism (e.g. RTS) if evolving the ETS into a generalized GGR market proves too complex or risky.

- **Interventions to address the surplus** and maximise the ETS price are needed, to reduce the discrepancy with EU ETS prices and maintain a strong decarbonisation signal.
- **Certainty about the future** – GGR operators looking to sell into the ETS need certainty about their future eligibility for the scheme. A mechanism to approve projects for the ETS well in advance would ensure new sources of supply are brought forward. Investors in GGR projects and GGR off takers (including those currently outside the ETS) would also benefit from certainty about the units' eligibility for the ETS.
- **Certification mechanism** – The lack of certification mechanism planned for UK GGR places an over-emphasis on the ETS as the only market where units become certified. An underpinning certification that can be applied across compliance and voluntary markets, and indeed in other contexts (such as public procurement), could ensure integration in the UK ETS is no longer a dependency for GGRs to find a market in the UK.
- **Complementary policies** – Recognising the limitations of the ETS, the UK should establish additional voluntary and compliance mechanisms to bring forward UK GGR, such as a regulated corporate standard and a GGR public procurement programme. The ETS "cannot do it all" for GGR. Carbon Gap encourages the UK to broaden its policy mix to effectively address the needs of this new sector and position itself as a global leader on GGR.

CARBON GAP'S RESPONSE

1. Do you agree with the Authority's principles for policy design? (Yes/no – Please give further details to support your answer)

Yes, Carbon Gap generally agrees with the principles laid out in the document whilst making the following important additions and amendments.

- **The need for durable net zero:**¹ Any residual fossil fuel emissions, like those covered by the UK ETS, need to be balanced out by GGRs that store GHGs away from the atmosphere for sufficient timescales – at least as long as the fossil carbon would have remained out of the atmosphere without human intervention (i.e. without anthropogenic extraction and combustion/release of carbon of fossil fuels into the atmosphere).
- **Like-for-like:** Wherever GGR is used to compensate emissions, policies must differentiate between carbon from the long carbon cycle (e.g. from geological stores) and from the short carbon cycle (e.g. biomass, soils). Policies must ensure that any release of fossil GHG emissions is matched by equivalent return of carbon back to the geosphere. This will ensure we do not overburden, or place overly high expectations on, shorter-term carbon stores like living biomass and soils, whose carbon uptake capability may become more vulnerable as climate change progresses (e.g. due to wildfires, pests, droughts) and is already disrupted at large scale by human intervention.
- **Environmental integrity & sustainability:** We suggest that the principle for 'environmental integrity' be renamed to include 'environmental sustainability'. Environmental sustainability must be added as an overall concern and principle, to ensure the interference with the natural environment (e.g. via biomass harvesting) does not obstruct other environmental objectives such as biodiversity. The principle for environmental integrity is seemingly focused on GHGs, with no mention of other essential environmental considerations, such as effects of GGR integration on biodiversity, resources (water, land, biomass), potential pollution, and effects on human health (e.g. due to air pollution).
- **Demand-side policy options beyond the ETS:** A suite of policies is needed to drive GGR deployment. The ETS alone cannot deliver the urgent demand pull needed to

¹ Fankhauser, S. et al. (2021). The meaning of net zero and how to get it right. *Nature Climate Change*, 12, pp. 15–21. <https://doi.org/10.1038/s41558-021-01245-w>

scale the GGR market in the manner that is needed. Given that the UK is targeting 5 Mt/year of engineered removals by 2030 and scaling to 23 Mt/year by 2035, other interventions are needed, such as a public procurement programme, and GGR integration in other policy areas (low-carbon mandates for the built environment, for example). Carbon Gap would suggest, as an additional principle, the recognition that GGR cannot rely solely on the ETS to meet its demand-pull needs (and other policy needs).

- **Need for a portfolio of GGRs:** Each GGR method faces physical limits to its development, as well as uncertainties regarding its potential to scale. To mitigate the risk of failure and distribute the burden on resources, Carbon Gap advocates for proactively developing the diversity of available GGR methods through policy. This requires going beyond a cost-driven approach and creating mechanisms that guarantee access to demand for all GGR methods.

2. Do you agree the Authority should maintain the gross cap for initial integration of GGRs in the UK ETS (Option 2)? Please explain your answer.

Maintaining the gross cap (Option 2) is preferable in the near to medium term, given its higher climate change mitigation ambition and lower risk of mitigation deterrence, by not allowing GGR integration to increase the overall cap. The choice of cap should take into account the following:

- **Comprehensive mitigation deterrence measures:** Measures need to be taken to address all sources of mitigation deterrence under any cap option. Namely, as well as not increasing the cap, the trajectory for gross emissions reduction needs to be upheld or increased in ambition, and a strict focus should be placed on permanent removals to avoid the risk of 'substitution and failure'.²
- **Certainty about GGR demand:** Design improvements are needed to give covered ETS entities and GGR suppliers certainty regarding the demand for GGR, especially under

² This refers to the typology developed by McLaren (2020) and referenced by Carbon Gap. 'Substitution and failure' is where CDR pathways fail to deliver the expected removed tonnes required to replace emissions reductions – this could be due to lower technical performances, higher reversal rates, or CDRs having higher cost than expected. In addition, the papers note two other types of mitigation deterrence. 'Rebounds' refers to 'indirect and typically unintended effects in which GGR [Greenhouse Gas Removal] might trigger additional emissions'. 'Mitigation foregone' refers to the indirect reassurance effect that CDR may create, resulting in actors lowering their engagement on emissions reductions, even unconsciously. See McLaren, D. (2020). Quantifying the potential scale of mitigation deterrence from greenhouse gas removal techniques. *Climatic Change*, 162, pp. 2411–2428 and Carbon Gap (2023). [Discussion paper: How to avoid carbon removal delaying emissions reductions](#).

Option 2 where the amount of GGRs to be integrated is uncertain. This could include a GGR obligation within the ETS, as well as visibility of an eventual transition to Option 3 and the introduction of a negative cap.

Carbon Gap recognises two important benefits of the Option 3 cap. Firstly, Option 3 can constitute higher ambition towards reaching net zero by lowering the net cap on emissions to account for the introduction of GGRs. This could be preferable in the long term once a more predictable supply of GGR is available. Yet as long as GGR is still scaling, Option 3 introduces the risk that sufficient allowances are not available if expected levels of GGR do not materialise, driving up prices unpredictably, as well as the possibility of over-delivery of GGR, weakening the carbon price signal. The timing for adoption of Option 3 is therefore critical, and is dependent on both how quickly GGR can be scaled and the decarbonisation potential of covered entities to meet the new cap.

The second benefit of Option 3 is that it does not lead to a decline in market size. While under Option 2 the cap declines over time, reducing the volume of traded allowances (including GGR), under Option 3 the traded volumes of GGRs are theoretically uncapped. This is a benefit for GGR market development but also a risk for sustainable climate action. The potential for high variability in the volume of gross emissions and gross removals taking place outside the cap could lead to environmental and social sustainability issues (if unsustainable levels of GGRs are needed to compensate high levels of emissions) and also mitigation deterrence.

Overall, Carbon Gap would advocate for the initial use of Option 2. A transition to Option 3 could be considered at an appropriate time, which could be helpful to create the possibility of a negative cap, as explained in our response to Question 3, and to produce sustained demand for GGRs in the long term.

In addition, the choice of cap and other design decisions must recognise that current UKA prices are too low. This limits the ability of the ETS to (1) drive emissions reductions, (2) enable the integration of high-quality permanent CDR credits (potentially failing to incentivise permanent CDR), and (3) also undermines the potential to link with other markets such as the EU ETS.

Carbon Gap strongly opposes the use of the Option 1 cap, given that it waters down mitigation ambition by increasing the supply of allowances available in the ETS. Using GGRs to increase the overall cap constitutes a key potential source of mitigation deterrence.

3. How can the UK ETS sustain demand for GGRs in the long-term, taking into account the consideration of setting a new cap (Option 3)?

Carbon Gap sees a critical need for a compliance mechanism for GGR, to support the scale-up of different GGR methods while setting rules for suppliers and users of GGR. Carbon Gap is

still undertaking research to examine if ETS integration, or an alternative mechanism such as a dedicated Removals Trading System, would be most appropriate.

If the UK ETS indeed becomes a primary long-term market for UK GGR, several key design aspects are needed. The new cap would need to become gradually net negative, and processes such as a market stability reserve would need to be put in place to increase the price signal and its stability and predictability. This is most compatible with the Option 3 cap – hence, it may be helpful to transition to this option in the longer term in the absence of any other compliance policy measures for net negativity.

Together with a new net negative cap, extending the coverage of the ETS to more sectors and entities is an attractive option:

- to speed up the decarbonisation of additional sectors,
- to expand the pool of demand for GGR,
- to create a fairer distribution of the effort to deliver the GGR volumes required to go net negative.

Carbon Gap would stress that the UK ETS, as currently designed, can only do so much to support the longer-term growth of UK GGR capacity. The volumes traded under the ETS are intended to decrease over time and the low predictability of UKA prices (with significant ups and downs within a year) makes it an unreliable revenue source for project investors. Furthermore, only specific GGR methods will be able to meet the permanence criteria required to enter the UK ETS, leaving the other methods unattended.

As well as the integration of GGRs into the UK ETS, Carbon Gap supports a more diverse approach where additional measures are taken to sustain demand for GGRs. These could include a mandate for generating or purchasing sufficient amounts of a specific quality of GGR, a procurement programme, or a Carbon Clearing-house (see response to Question 4). The exact choice of supporting measures will depend on the cap option and other integration design options chosen and implemented. These measures can be taken alongside, and in support of, GGR integration in the ETS – to enable GGRs to flow into the ETS under the Option 2 cap and to make Option 3 possible in the longer term.

4. Do you agree that GGR allowances in the UK ETS should be issued ex-post (i.e. after the removal has taken place and been verified)? Please explain your answer.

Carbon Gap agrees that GGR allowances need to be issued ex-post.

- Ex-post issuance should ensure that only actually removed quantities of GHG receive allowances, allowing for higher certainty of net removals (and thus the climate change mitigation achieved by the ETS).

- An ex-post restriction provides a crucial safeguard against mitigation deterrence of the 'Substitution and failure' type – whereby GGR pathways fail to deliver the expected removed tonnes required to replace emissions reductions.² The ex-post requirement limits the risk that CDR fails to arise, for reasons which may include cost, technical performance, or reversals.
- To be truly effective in limiting mitigation deterrence, this restriction should be accompanied by strong permanence/durability rules and the use of the like-for-like principle, defined in the Race to Zero lexicon as : 'when a source of emissions and an emissions sink correspond in terms of their warming impact, and in terms of the timescale and durability of carbon storage'.³

At the same time, Carbon Gap recognises that a restriction to ex-post issuances introduces uncertainty for developers, who will want confirmation that their units will be tradeable in the ETS before they decide to bring projects forward. Hence any ex-post restriction must be accompanied by a clear process to determine eligibility for the ETS in advance.

The limitation to ex-post removals must also be accompanied by measures to stimulate advance purchases of GGRs that have not yet taken place, which are vital to developing the market. These measures should be both within and beyond the ETS. See Q5 for more detail.

5. Does the Authority need to consider any additional measures for the UK ETS to ensure GGR operators are able to arrange offtake agreements? If yes, please provide specific details of which measures should be considered.

Yes, additional measures must be considered. There is a lack of clarity in the current proposal as to what would incentivise buyers to buy GGRs at scale through offtake agreements. In suggesting this is something that should take place outside the ETS (pg 23), the consultation document underplays the critical role the UK ETS could play in driving advance purchases of GGR. This leaves in place only voluntary actions to finance early-stage projects that bring forward GGRs at scale. The proposal in its current state would therefore not be effective in delivering the stated aim to address the market failure associated with the lack of demand for GGRs.

The consultation document presents offtakes as an option to finance earlier-stage GGRs by 'providing revenue in advance to support initial costs' even under the proposed condition that ETS GGR units are ex-post (pg 23). These types of advance agreements are hugely important in providing the certainty needed to set up GGR operations. Lead times for early

³ UN Race to Zero (2021). [Race to Zero Lexicon](#).

engineered projects can be half a decade or more (e.g. 1.5–6.5 years for BECCS⁴ and 2–6 years for DACCS⁵), making early demand crucial for ensuring timely deployment.

However, despite advance purchases being undertaken by the likes of Microsoft,⁶ the Frontier coalition,⁷ the NextGen CDR Facility⁸ and others, relying on voluntary agreements by firms is not adequate to drive a GGR market at scale. Adoption of voluntary offtake agreements for durable GGR is not diffusing widely, and GGR operators have no certainty about how many other firms might take similar action and when. Tracking database CDR.fyi lists purchases of durable carbon dioxide removal, and finds only 404 buyers and 400 suppliers globally, with only 3 buyers responsible for >80% of the purchased volumes.⁹ The 2024 State of CDR report finds that only 1% of companies with a science-based target have bought novel CDR.¹⁰

Carbon Gap sees two key measures to promote the adoption of offtake agreements. These recognise the direct benefits of increasing the compliance demand (to increase financing by ETS participants), and the indirect benefits of making GGR more investible (to increase financing by non-ETS participants).

Introduce measures within the ETS to boost GGR demand

Offtakes are time- and resource-intensive to establish, undermining the already minimal incentive to use them. To deliver a supply of GGRs to the UK ETS, there is a need for additional incentive(s) or requirements to stimulate these advance purchases. This should involve a mandatory requirement for ETS participants to use GGR to cover an increasing share of their ETS obligations. This could start small but increase over time.

In addition, the ETS should set strong rules on GGR durability (e.g. excluding woodland units and setting a high permanence threshold).

Both these measures could encourage offtakes by ETS participants as part of their compliance planning, recognising the limited volume of eligible GGRs in the market today and the need to bring these forward through advance agreements.

Indeed, by setting strong rules necessitating durable GGR in compliance markets, this could also influence voluntary practices. By signalling the need for GGRs that are not yet mature, ETS and non-ETS firms could be encouraged to engage in offtakes as a corporate sustainability measure (e.g. as part of 'beyond value chain mitigation' measures, promoted

⁴ IEA (2024). [Bioenergy with Carbon Capture and Storage](#). (Accessed: 14 August 2024)

⁵ IEA (2024). [Direct Air Capture](#). (Accessed: 14 August 2024)

⁶ Microsoft CSR (2024). [Carbon Removal Program](#). (Accessed: 14 August 2024)

⁷ Frontier (n.d.). [An advance market commitment to accelerate carbon removal](#). (Accessed: 14 August 2024)

⁸ NextGen (n.d.). [NextGen: The future of carbon removal... today!](#) (Accessed: 14 August 2024)

⁹ CDR.fyi (2024). [We bring transparency and accountability to the carbon removal market](#). (Accessed: 14 August 2024)

¹⁰ Smith, S.M. et al. (2024). The State of Carbon Dioxide Removal 2024 – 2nd Edition. DOI 10.17605/OSF.IO/F85QJ

by the Science Based Targets Initiative¹¹ and Voluntary Carbon Markets Integrity Initiative¹²) or even as a potential financial investment.

To further stimulate offtake agreements, government must clarify the routes to market for GGR allowances. ETS participants will want to know if any offtakes they engage in will yield compliance units further down the line, while non-ETS firms may be encouraged to invest in GGRs through offtakes if they know they will be able to sell allowances into the compliance market in future. Clarity is thus needed as soon as possible, ideally well in advance of GGR integration, regarding how GGRs will be integrated into the ETS, which facilities will qualify, and what the standards will be.

Introduce measures outside the ETS to boost GGR demand

The UK should consider introducing additional measures to support GGR demand outside the ETS. This could include a pilot procurement scheme to help catalyse the development of GGR markets and demonstrate rigorous MRV practices for high-quality credits, similar to the U.S. Department of Energy's Carbon Dioxide Removal Purchase Pilot Prize. Such a scheme could bring forward a portfolio of CDR methods spanning a wide range of high-durability CDR solutions. The focus should be on modelling good behaviour, kickstarting the supply of a variety of higher-durability CDR methods by introducing predictable demand.

The procurement programme should proceed in two phases:

- Pilot phase – a modest volume of higher-durability removals would be purchased across a representative array of methods, to reveal 'first of a kind' costs, set standards and gain experience with the unique features of each method.
- Second wave – a second wave of procurement, this time mixing public and private funding to scale up CDR supply and to leverage private investment. This phase would focus on revealing 'next of a kind' project costs, to gauge how quickly costs are likely to decline and inform onward investment priorities.

In addition, clear rules on climate-related claims would further support the use of offtake agreements by companies. A regulated corporate climate standard or label – setting out rules for the treatment of residual emissions with GGR at organisational, product, or value chain level, for example – would reduce the risk of engagement with GGR and add a reputational incentive, and encourage ETS and non-ETS firms to make decisions about their GGR needs.

Finally, Carbon Gap recognises that engaging with offtakes is likely to be time- and resource-intensive for firms (covered or not covered by the ETS), who may not have the capacity to

¹¹ SBTi (2024). [ABOVE AND BEYOND: AN SBTI REPORT ON THE DESIGN AND IMPLEMENTATION OF BEYOND VALUE CHAIN MITIGATION \(BVCM\)](#).

¹² VCMi (2023). [Claims Code of Practice: Building integrity in voluntary carbon markets](#).

participate effectively. We see a need for an intermediary institution, a Carbon Clearing-house, which would simplify the CDR market for both buyers and suppliers. The box below provides more detail on this concept.

Carbon Clearing-house

- A Carbon Clearing-house, acting as a clearing house and facilitator for the sale and purchase of carbon removal credits, could help ensure that a functioning industry and bankable set of GGR projects can emerge in the UK. As the GGR market matures, the priority is to aggregate funds to purchase GGR at scale and to increase the supply of GGR units, to satisfy demand both within and beyond the ETS. A government-administered Clearing-house could manage the procurement and disbursement of certified carbon removal at the necessary scale by pooling funds from a variety of sources.
- We use the term 'Clearinghouse' to encompass any centralised entity performing these functions, since there may be many means of creating, hosting and empowering such an entity, ranging from fully government-controlled, to a public-private partnership, to a tendered third party operator.
- Whilst the Clearing-house might initially be used to boost demand for GGR, in the longer term it could conceivably allow any policy to delegate execution of carbon removal purchasing to the Clearing-house. Private stakeholders, such as corporate purchasers or ETS-regulated emitters could also seek approval to channel their funds via the Clearing-house, specifying the removals they require or contributing to a central portfolio. On the supply side, GGR suppliers would benefit from a highly creditworthy counterparty, enabling them to finance projects with debt. Eventually, we envision the Clearing-house operationalising delivery on binding carbon removal targets at national level.
- While ensuring the independence of the Clearing-house from the Authority itself is a key challenge, it is not insurmountable and could follow the example of established central banks.
- The Clearinghouse would substantially enhance visibility and certainty about the UK's ability to reach its GGR and climate targets, and would see the government spearhead the scaling of a potentially huge industry in the UK. The UK may also be able to reap benefits from this activity: any surplus GGR units delivered through the Clearinghouse would continue to be useful outside the ETS to achieve national climate targets, or could contribute to a reserve of high quality units that could be phased into the ETS over time.

- The need for a carbon central bank or a clearing-house has been examined across the literature.^{13,14,15,16,17,18} Cited benefits include stabilising carbon prices, improving buyer confidence by reducing counterparty risk, supporting cost reduction, managing reversal events, enabling a wider range of GGRs to participate. Such an institution would also be mindful of sectoral residual emissions and managing GGR supply to meet these.

6. Does the Authority need to consider any specific measures for smaller scale GGR operators, including smaller scale landowners if woodland is included in the scheme? If yes, please provide specific details of which measures should be considered.

See answer to Question 26.

7. Who should receive the GGR allowance? Please consider whether this would also apply for GGRs that involve multiple actors in the value chain and provide examples.

Carbon Gap is primarily concerned with the risks related to double-counting on the side of the user or buyer of the GGR allowance. The integration into the UK ETS needs to ensure that only one end-user receive a given GGR allowance, and that no double counting of the climate benefits achieved by GGRs takes place. Carbon Gap recommends a public certification mechanism and public registry to manage the risk of overallocation or double counting.

Public certification mechanism and common registry

DESNZ has indicated its intention to define its own methodologies for GGR projects, which will underpin policies like the GGR Business Model and GGR integration to the UK ETS.¹⁹ As part of this effort, government may develop a public certification system and registry for the UK GGR

¹³ Rickels, W. et al. (2024). Build carbon removal reserve to secure future of EU emissions trading. Kiel Policy Brief, No. 175. Kiel Institute for the World Economy.

¹⁴ Rickels, W. et al. (2022). Procure, Bank, Release: Carbon Removal Certificate Reserves to Manage Carbon Prices on the Path to Net-Zero. *Energy Research & Social Science*, 94, 102858.

¹⁵ Edenhofer, O. et al. (2023). On the Governance of Carbon Dioxide Removal – A Public Economics Perspective. CESifo Working Paper, No. 10370. Center for Economic Studies and ifo Institute.

¹⁶ Bednar, J. et al. (2021). Operationalizing the net-negative carbon economy. *Nature*, 596, 377–383.

¹⁷ Coffman, D. & Lockley, A. (2017). Carbon dioxide removal and the futures market. *Environmental Research Letters*, 12, 015003.

¹⁸ Burke, J. & Schenuit, F. (2023). Governing permanence of Carbon Dioxide Removal: a typology of policy measures. CO2RE – The Greenhouse Gas Removal Hub.

¹⁹ Department for Energy Security and Net Zero (2023). [Greenhouse Gas Removals: Update on the design of the Greenhouse Gas Removals \(GGR\) Business Model and Power Bioenergy with Carbon Capture and Storage \(Power BECCS\) Business Model](#).

market (though it has not indicated plans to as yet). In the context of avoiding double counting and establishing a robust system for allocating and transferring GGR allowances, Carbon Gap advocates for a transparent, publicly available registry to underpin any UK GGR market. The registry should involve disclosure of essential information regarding the GGRs used – for example, the status of certified units (issued/retired/expired), the ownership of the units, expected duration of carbon storage. The registry should also contain information related to liability for GGR reversals, and be used to ensure that buyers who retire GGR units remain responsible for ensuring accurate accounting if reversals occur. This means taking appropriate measures if carbon is released – by purchasing a replacement unit where necessary to uphold any claim, or making appropriate disclosures or updates to GHG inventories to reflect changes that have taken place.

8. Should allowances from GGRs be differentiated from UKAs and, if so, how?

Overall, Carbon Gap supports a limited amount of differentiation between UKAs and GGRs, to support price discovery and recognise the different physical properties behind different units. However, differentiation risks creating a fragmented market and driving price uncertainty, making GGR a voluntary option for satisfying ETS obligations. This would undermine GGR market development in the UK. Hence, any differentiation should involve additional incentives or requirements that encourage participants to buy GGRs, such as an obligation to supply or buy GGRs.

In principle, Carbon Gap supports differentiation between UKAs and GGRs, on the basis that:

- A separate and higher price for GGRs compared with UKAs is a useful safeguard against mitigation deterrence (even if this is already substantially achieved through the choice of cap);
- Differentiation is logically appropriate considering the different content and value of a GGR allowance compared with a UKA;
- Differentiation will enable price discovery and better information about GGR market development, to inform operators, financiers, and policymakers.

At the same time, Carbon Gap recognises that in the near term, linking UKA and GGR markets could support the price of GGRs, in the absence of other mechanisms to drive GGR demand. In a scenario of no differentiation, where GGRs are sold alongside UKAs, GGR prices would be driven by the prevailing UKA price (under cap Option 2) and topped up by the business model, giving certainty to GGR operators. Modelling by DESNZ indicates these prices could be somewhat attractive for GGR developers in the near term, ranging from £90/ton to over £120/ton from 2025–2037 in an Option 2 scenario (per Figure 3, Analytical Annex). (Carbon Gap additionally supports market stability measures to drive up the UKA price, which is currently too low.)

Where GGRs are generically differentiated from UKAs, GGR prices will be more uncertain because there is no (currently proposed) requirement to buy GGRs, and UKAs will continue to be available in significant quantity. Prevailing VCM prices may be some indication of GGR price in this scenario. Where GGRs are further separated into technology groupings, price uncertainty increases even further. Even with the business model policy in place, such a fragmented market could be highly problematic for the development of durable GGR, as uncertain market sizes could deter operators from setting up new projects.

With respect to further differentiation between GGR technology types, Carbon Gap would see this as unnecessary if the ETS contains strict criteria on permanence (based on permanence in physical storage, not contractual/policy-based permanence) for GGRs in the ETS.

Overall, Carbon Gap supports:

- The exclusion of woodland units from the ETS and strict permanence criteria,
- A limited degree of differentiation (e.g. differentiating UKAs and generic GGRs), combined with an obligation mechanism to support the price of GGRs, where covered entities must cover an increasing share of their compliance obligation with GGRs rather than UKAs.

In addition, a public certification mechanism for GGRs can fulfil the role of distinguishing between types of units, while an associated public registry can generate market data about flows of units of different types. This does not need to happen through differentiation within the structural design of the ETS. Providing the 'holder of the allowance with more information on how [a GGR unit] originally entered the market' can take place through the certification mechanism (which DESNZ has indicated it plans to develop), and not through differentiation within the ETS.

9. Do you think that differentiated GGR allowances would attract a higher price than existing emissions allowances and why? To what extent does this depend on the degree of differentiation (e.g. a generic GGR allowance versus a technology specific GGR allowance)?

GGR allowances are unlikely to naturally attract a stable higher price in the compliance market without other interventions targeting demand. Voluntary purchases at high prices, as cited in the consultation, are currently few – only 1% of companies with a science-based target have bought novel CDR¹⁰ – and are often undertaken by a small number of often highly

profitable companies with comparatively low emissions, for reputational gain.²⁰ In the context of higher-emitting industrial firms within the compliance regime, the ability and incentive to pay for durable GGR is much lower.

The price of GGR units will be sensitive to the degree of differentiation. As mentioned in our response to Question 8, full grouping of GGRs with UKAs would link their prices together, providing greater price certainty and stability (as long as the cap is maintained and efforts are undertaken to address any UKA surplus). But a separate market for GGRs, with no requirement under the ETS to purchase them, would have a highly uncertain price.

Indeed, the introduction of a Carbon Clearinghouse, outlined as part of our response to Question 5, would allow a more tailored approach to buying GGRs, where prices could be more reflective of the different costs of supplying removals.

Some additional compliance value must be attached to encourage ETS firms to buy GGRs in predictable volumes and move towards a more predictable and higher price signal for GGRs. Today, UKAs fetch a substantially higher price than average VCM prices for Woodland Carbon Units,²¹ even when WCUs are in reasonably short supply. This evidences the impact of a compliance requirement on price. In a scenario where participants are specifically required or incentivised to purchase GGRs, prices are more likely to rise to reflect their real costs. The level and timing of such a requirement would then require great care, to ensure mandated volumes are indeed available and buyers have latitude to bid at prices they can afford.

10. Will differentiated GGR allowances encourage non-compliance or non-trading entities to purchase these allowances?

It is important not to conflate the rules and purpose of the compliance system with those of a certification mechanism. While a certification mechanism provides certified information about the units being traded, and can be used across the ETS and voluntary markets, the rules in the compliance market regarding differentiation and other aspects should be designed to fulfil the objectives of the ETS alone.

DESNZ has indicated that it intends to define its own methodologies for GGR projects,¹⁹ which will underpin policies like the GGR Business Model and GGR integration to the UK ETS. As part

²⁰ Analysis by Carbon Gap of a sample of 179 companies' scope 1-3 emissions found that firms in industries like banking, insurance, and software generate very high profits per ton of CO₂ emitted (>1000 USD/ton), while in industries like automakers, utilities and mining, emissions are much greater compared with profits (<100 USD/ton). Of the companies in the dataset, 85% of profits came from companies with less than 15% of emissions. There is thus a large discrepancy in ability to pay for durable GGRs. Separately, analysis of real-life spending on carbon credits found that large buyers like Microsoft, Google and Disney are spending less than 0.02% of revenue and 1% of profits on their credits. See: Carbon Gap (2022). [Bridging the Ambition Gap: A framework for scaling corporate funds for carbon removal and wider climate action](#).

²¹ According to the consultation document, the average UK ETS price for 2021-2023 was £64, yet the average price for Woodland Carbon Units in 2023 was £25.

of this effort, government may wish to develop a public certification system and registry for the UK GGR market, as has been done in the EU with the Carbon Removal Certification Framework – though it has not indicated plans to do this as yet.

Such a certification mechanism will fill the role of distinguishing between types of units, while the registry associated with this mechanism (which Carbon Gap argues should be publicly owned, transparent, and common to all GGR buyers) will generate useful data about GGR demand, transaction volumes, and ownership. The ETS does not need to fulfil this role by differentiating units at a granular level within its structural design. Carbon Gap does not advocate for a granular level of differentiation, as this will create a fragmented market.

What is more, a certification mechanism would crucially enable a GGR market(s) beyond the ETS. By framing the UK ETS as the primary GGR market and the main arena in which UK GGR units become validated and certified, the scope of GGR trading in the UK is narrowed. By creating an underpinning certification that can be applied across compliance and voluntary markets, and indeed in other contexts (such as public procurement), integration in the UK ETS is no longer a dependency for GGRs to find a market in the UK. On the other hand, were the UK ETS to be the main market, there is a risk of increased price volatility due to speculation by outside buyers.

11. What should the Authority's role be in facilitating a route to market for allowances from GGRs?

Carbon Gap supports the Authority's or another institution's involvement in auctioning GGR allowances. This links to our support for a 'Carbon Clearing-house' or carbon central bank, which involves an intermediary institution taking on a crucial role in both procuring CDR and auctioning credits while navigating the emergence of a new market.

Carbon Gap would not be in favour of allowances being automatically issued to GGR operators based on eligibility criteria. This limits the ability to manage supply (volume and type) of GGRs into the market; collect market data; and track and exercise scrutiny over operators; as well as to deliver the other proactive roles we believe a Clearing-house could play like aggregating demand, stabilising prices, and supporting a portfolio of GGRs to come forward.

In line with the discussion above on differentiation, the Authority's or Clearing-house's involvement would take place through separate auctions for GGRs.

12. Do you agree that allowances should only be awarded to UK-based GGRs? We welcome views from all stakeholders including sector-specific considerations. Please explain your answer.

No, a UK-only restriction implemented over the long term would likely undermine liquidity in both supply and demand. The UK ETS should be kept open to the possible eventual inclusion of non-UK GGRs, but only those that meet the high standards that the UK should impose on itself. The UK should also keep open the possibility of eventually linking to other aligned ETSs which can also allow UK-based GGR operators to find a wider array of buyers, further driving innovation and scale-up in GGR.

However, Carbon Gap sees various potential benefits to a restriction to UK GGRs, particularly in the near term. It provides a helpful safeguard against potential overreliance on third countries to supply GGRs which could lead to exploitative effects (e.g. on local land use) as well as undermining UK self-sufficiency. It concentrates finance in a local market creating benefits for UK operators and more certainty about how supply is developing. Noting the UK's openness to potential linkages with other emissions trading systems,²² the UK should have regard to EU GGR standards under the Carbon Removal Certification Framework and assess potential areas of divergence in standards that may limit the ability to link systems.

A restriction to UK-based GGRs also enables a country-level approach to GHG accounting, which can better reflect the full supply chain of activities and avoids offshoring supply chain emissions to other countries with potentially less stringent emissions targets or climate governance. This could be helpful until international regulatory governance and GHG accounting practices are strengthened. In the meantime, the UK should require a sufficient and direct level of scrutiny to be exercised over projects, ensuring operators and GGR units meet common standards which can be enforced.

A crucial aspect to resolve is how the locations of supply chain components feature in this context – most notably, the sourcing of biomass for BECCS. If BECCS is to feature in the ETS, government must ensure sustainable biomass supply can be delivered (either domestically or internationally) and introduce measures to ensure oversupply of biomass does not take place. Government must ensure that any biomass supplied from outside the UK meets UK biomass sustainability standards, even if local standards are lower. A comprehensive approach to lifecycle assessment must be taken in which biomass transportation emissions are fully accounted for. Carbon Gap also strongly advocates for a clear role for the waste hierarchy in any sustainable biomass requirements and when considering the eligibility of BECCS for the UK ETS.

13. Do you agree with the proposed permanence framework of both a minimum storage period, a liability measure and a fungibility measure? Please explain your answer.

A minimum storage period of several centuries to millennia, and a liability framework which is comparable in stringency to requirements currently in place for the geological storage of

²² Secretary of State for Business, Energy, and Industrial Strategy (2022). [United Kingdom of Great Britain and Northern Ireland's Nationally Determined Contribution](#).

CO₂ in the UK and EU (e.g. in the CCS Directive), are essential. With regards to fungibility measures, there is high uncertainty on the relationship between ongoing climate and environmental changes and their effects on carbon storage. It is therefore advisable to not rely on fungibility measures within the ETS and instead limit the types of storage permitted. Only GGR methods which use geological storage, or meet the same storage durability, measurability and risk of reversal as methods using geological storage, should be considered eligible for inclusion in the UK ETS.

14. What minimum storage period duration should the Authority set for GGRs entering the UK ETS? Please explain your answer.

In accordance with the concept of durable or geological net zero, the appropriate minimum storage duration for GGR (where it is used in addressing residual fossil GHG emissions) should be in the realm of several centuries (as generally provided by geological storage) to millennia.²³ Because this is a timeframe hard to manage on human governance or corporation lifecycles, the Authority should prioritize GGR that stores carbon through chemically resilient processes, thereby limiting the reliance on uncertain human governance at such timescales.

15. How should the Authority manage potential reversal events from GGRs? Please consider the liability options outlined above, whether any options exist that have not been considered, and how the potential liability options could be used together or in sequence.

Reversal events must be managed through stringent requirements regarding the types of storage allowed in the ETS (outlined in responses to the previous questions) and the liability assigned to operators of GGR storage. Liable parties and appropriate tools for managing potential reversals need to be clearly defined based on best practices and potentially refined over time as these evolve. The design of appropriate tools to tackle reversal events should be driven by risk aversion, given the uncertainties about the security of tools such as buffer pools. The Authority should ensure minimum liability periods for project developers, impose strong monitoring and liability requirements during the project lifetime, and uphold a comprehensive liability regime, in which liability for monitoring and maintaining storage is eventually handed over to the state for long-term management once certain conditions are met.

²³ Babiker, M., et al. (2022). Cross-sectoral perspectives. In IPCC (2022). Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.005

16. Where should the liability for any re-release of stored emissions apply if there are multiple actors in the GGR value chain?

The liability for any re-release should apply to the actor responsible for the storage of CO₂ at that point in time. This may be the storage operator or perhaps the state, as provisions should be in place to transfer liability for storage sites to the site after closure (once appropriate conditions have been met).

Backstop liability measures must be introduced to address the risk of, for example, insolvency of storage operators. This could involve a secondary responsible party, like the ETS authority or a similar governmental entity, being tasked with ensuring that carbon remains stored over sufficiently long periods of time. The liability regime should ensure any potential re-release is addressed immediately with GGR of similar or higher quality character (in case carbon storage in biogenic sinks is included).

To improve transparency and accountability, Carbon Gap supports the disclosure of liable parties and backstop liable parties in a common and transparent registry.

Provisions are also needed on the buyer side to address re-release. For example, a government-developed corporate climate standard (as proposed elsewhere in this response) should require that, in the event of reversals, associated claims and GHG accounting are updated to reflect the changes.

17. Should the liability measure differ if the GGR is also subject to a fungibility measure? For example, if the reversal event was avoidable (i.e. within the control of the GGR operator) or unavoidable (i.e. due to factors outside of control of GGR operator).

Any UK ETS integration of GGR should provide the highest certainty that carbon is highly-durably and securely stored, with only storage of several centuries or more eligible for the ETS. With these parameters in place, it will not be required to implement fungibility measures.

18. Should the Authority use a buffer pool or equivalence ratio?

Carbon Gap advocates for the UK ETS to follow the concept of durable net zero and the like-for-like principle when considering the integration of GGR into the UK ETS. While buffer pools or equivalence ratios may also be created for GGR with highly durable geological storage, the creation of the buffer pools may not be necessary if sufficient liability measures are in place, as the risk of rerelease on relevant timescales is very low. Buffer pools should not be used to enable the integration of woodland or other low-durability GGRs. Both buffer pools and equivalence ratios would need to be flexible to regular adjustments as scientific evidence regarding storage durability and risks of rerelease evolve.

19. How could the Authority set the contribution rate for a buffer pool? Should this be a flat rate contribution across all applicable projects, or should this vary per project?

See answer to Question 18.

20. Which factors should be considered when determining the appropriate contribution rate for a buffer pool?

See answer to Question 18.

21. How should the Authority decide which GGRs would be required to contribute to a buffer pool and at what level any threshold should be set for contributions?

See answer to Question 18.

22. Should buffer pool contribution rates remain fixed over time or could they vary? If they vary how should this be assessed? For example, the Authority could require projects to contribute depending on an assessment of risk at each verification period, and this could change over time.

See answer to Question 18.

23. How could the Authority design equivalence ratios?

Only GGR methods which use geological storage, or meet the same storage durability, measurability and risk of reversal as methods using geological storage, should be considered eligible for inclusion in the UK ETS.

It is advisable to avoid the need for equivalence ratios altogether by limiting the ETS to permanent geological storage, or any other methods that can determine precisely measurable carbon dioxide storage for several centuries to millennia.

The future should not be overly discounted as this places larger weight on potential future technologies and welfare that may not arise to the foreseen extent. Future generations already carry the largest burden of climate change remediation measures to address climate change caused by current behaviours and political decisions.

Any equivalence ratio would need to be regularly reviewed and amended in line with the latest scientific observations and findings.

24. Which inputs should be used in determining the appropriate equivalence ratios?

See answer to Question 23.

25. Should these equivalence ratios be fixed over time or regularly reviewed and amended?

See answer to Question 23.

26. Should new ex-post woodland units generated in line with UK Woodland Carbon Code standards be considered for inclusion in the UK ETS? Please base your response on the evidence outlined around permanence, costs and wider land management impacts, and on the policy options outlined in the rest of this consultation.

Woodland units should not be considered for inclusion in the ETS, since their inclusion under a permanence threshold of several hundreds of years of secure physical storage is unjustifiable. A sustainable, durable net zero requires recognition that biological storage is limited in capacity and shorter-lived than geological storage.¹ There is a growing body of evidence highlighting the decline in the capacity of forests to absorb and store carbon dioxide under projected climate change conditions.^{24,25,26,27} Woodland units should thus be excluded, in order to protect the UK ETS' integrity as a robust decarbonisation tool for its current sectors: energy intensive industries, the power generation sector and aviation. The vast majority of emissions within the ETS come from fossil sources. It will not be sustainable for biological carbon sinks, such as woodlands, to be permitted to compensate for fossil emissions, given growing uncertainties in scientific literature of the security of storage and reversal risks of biological carbon sinks.

The National Energy Climate-Plan (NECP) of France has projected a decreasing sink capacity for natural forests in spite of projections and plans to increase forest surface area. The NECP reads: 'In a context where forests are already severely affected by the impacts of global warming, with the impacts of climate change accelerating and amplifying the impacts of climate change compared to what was anticipated in previous studies, the new estimates of changes in the forest sink show a risk of a natural carbon sink deficit'.²⁸

29. Do you agree with the Authority's assessment of peatland restoration?

²⁴ Van der Woude, A. et al. (2023). Temperature extremes of 2022 reduced carbon uptake by forests in Europe. *Nature Communications*, 14(1), pp. 6218.

²⁵ Pilli, R. et al. (2022). The European forest carbon budget under future climate conditions and current management practices. *Biogeosciences*, 19, pp. 2363-3284.

²⁶ Büntgen, U. et al. (2019). Limited capacity of tree growth to mitigate the global greenhouse effect under predicted warming. *Nature Communications*, 10(1), pp. 2171.

²⁷ Ke, P. et al. (2024). [Low latency carbon budget analysis reveals a large decline of the land carbon sink in 2023](#).

²⁸ EU Directorate-General for Communication (2024). [FRANCE – FINAL UPDATED NECP 2021-2030](#).

Yes, Carbon Gap agrees with the assessment of the authority that peatland restoration should not be included in the UK ETS, given that peatland restoration primarily represents emission reductions/ avoided emissions, and given that, alongside the exclusion of woodland units, this would further support the like-for-like principle and durable net zero.

30. Do you agree with the Authority's assessment that, by maintaining the gross cap on emissions, additional controls could be used to target wider impacts but not mitigation deterrence?

Carbon Gap supports maintaining the gross cap to manage mitigation deterrence, however we recognise the need for additional controls to further safeguard against other sources of mitigation deterrence. Referring to the mitigation deterrence typology developed by McLaren²⁹ (and referenced in Carbon Gap's mitigation deterrence paper³⁰), we believe that the Option 2 cap works to tackle the (1) 'Mitigation foregone' type of deterrence, by capping the total allowances and removing UKAs in proportion to the GGRs that enter. 'Mitigation foregone' refers to the indirect reassurance effect that CDR may create, resulting in actors lowering their engagement on emissions reductions, even unconsciously. However, Option 2 may still allow the (2) 'Substitution and failure' and (3) 'Rebounds or side effects' types of deterrence.³¹

To address type (2), Carbon Gap supports additional controls including strong rules on GGR durability and the exclusion of woodland units from the ETS. Addressing type (3) requires strong MRV and certification protocols with a highly conservative approach to land use change, project boundary setting, and leakage.

In the longer term, a move towards Option 3 would require new approaches to deal with mitigation deterrence. Given the risk of increased gross emissions as outlined in the Analytical Annex, government must adopt a conservative and risk-averse approach to deciding how the cap on UKAs is lowered and potentially introduce a supply control mechanism to address any GGR oversupply.

²⁹ McLaren, D. (2020). *Quantifying the potential scale of mitigation deterrence from greenhouse gas removal techniques*. Climatic Change, 162, 2411–2428.

³⁰ Carbon Gap (2023). *Discussion paper: How to avoid carbon removal delaying emissions reductions*. Carbon Gap.

³¹ This refers to the typology developed by McLaren (2020) and referenced in Carbon Gap's [mitigation deterrence paper](#). 'Substitution and failure' is where CDR pathways fail to deliver the expected removed tonnes required to replace emissions reductions – this could be due to lower technical performances, higher reversal rates, or CDRs having higher cost than expected. In addition, the papers note two other types of mitigation deterrence. 'Rebounds' refers to 'indirect and typically unintended effects in which GGR [Greenhouse Gas Removal] might trigger additional emissions'. 'Mitigation foregone' refers to the indirect reassurance effect that CDR may create, resulting in actors lowering their engagement on emissions reductions, even unconsciously.

Under each option, banking of surplus allowances could also deter mitigation at a later stage, and thus the Authority should undertake efforts to limit the ETS surplus and constrain free allocation as much as possible.

Carbon Gap would be strongly opposed to an ETS that does not cap the use of GGRs in the long term. As the ETS moves towards its end-state, while residual emissions may not be easy to predict with a high level of accuracy, this should not mean the unfettered use of GGRs, as the proposed Option 3 may involve. Net zero should represent a state of increasing decarbonisation ambition, not one in which a mature GGR market comes to be used as an avoidance tactic for further decarbonisation.

31. To what extent will GGR operators seek to sell into voluntary markets and will this provide a control on GGR supply entering the UK ETS?

This will heavily depend on how GGR rules in the ETS emerge. If the ETS can be designed to work effectively with the GGR Business Model to cover costs and provide a return on investment for GGR operators, by creating a reliable price signal and galvanising compliance demand at scale, we can foresee wide use of this market by GGR operators.

As outlined elsewhere in this response, this will require demand-side interventions within the ETS to give certainty to developers about volumes and prices over time, and allow them to unlock business model support. Proposed mechanisms for this include measures within the ETS – such as a GGR obligation that increases over time, introducing strong permanence requirements (excluding less durable GGRs), setting a negative cap, transitioning to Option 3 over time, and expanding the ETS sectoral scope – as well as measures outside the ETS, like a regulated corporate climate standard setting rules on GGR use, which would broaden the demand pool for GGR.

On the other hand, if the ETS does not present a promising near-term market for GGRs, voluntary markets may seem much more attractive for operators of existing or already-in-development projects. But it is important to recognise the interdependence between the compliance and voluntary systems. Voluntary demand for durable GGR today is inadequate compared to what is needed for net zero by 2050. Without the strong signal from a robust compliance market, this may remain so.

32. Should the Authority consider the use of demand controls to target any impacts other than mitigation deterrence?

In the near to medium term, a key objective for the ETS is creating a stable compliance demand that supports market development for engineered GGRs in the UK. Over this timeframe, we assume the supply of GGRs into the ETS will be limited, and thus restrictions on demand are not likely to be helpful, especially when the Option 2 cap is employed, restricting mitigation deterrence.

However, there are some key considerations whereby in the longer term, as the GGR market within the ETS scales up, some controls on demand may apply:

- In the context of net zero, residual emissions should be proactively and dynamically defined, and GGR should not be used to allow unfettered gross emissions at the net zero date. (Such definition of residual emissions should follow a clear methodology that can allow industries to understand decarbonisation expectations and plan for necessary GGR volumes.)
- Depending on the Authority's approach to supply controls and eligibility criteria, there may also be a need for controls on demand for biomass-based GGR, recognising the potential sustainability risks associated with these. This will be influenced by the emergent portfolio of UK GGRs and their relative prices, which Carbon Gap proposes to manage through a Carbon Clearinghouse or similar intermediary.

With this said, in the near to medium term Carbon Gap supports interventions that establish a minimum level of demand for GGRs, ensuring that the compliance market is effective in mobilising demand for GGR. This could take place through a GGR obligation (ramping up over time), or a voluntary but regulated corporate climate standard/label setting rules on how GGR should be used to treat residual emissions over time.

33. Do you agree with the Authority's minded to position to adopt supply controls to target other objectives, such as phasing GGR integration or addressing market impacts? Please consider how supply controls can be used in a way that is compatible with providing a strong demand signal for GGRs.

Yes, supply controls will be helpful in the transition to GGR integration. Carbon Gap supports a phased integration approach, through a pilot phase with a low initial GGR cap to test the impacts of GGR integration.

Carbon Gap agrees with the need to limit impacts of different GGRs if necessary. High quality and more sustainable GGRs need to be brought forward through investment, as well as limiting the flow of lower quality or overrepresented GGRs from the market. A Carbon Clearinghouse could be introduced to help crowd in private funding towards a balanced portfolio of GGR projects, which could in turn be released as GGRs into the UK ETS. The Carbon Clearinghouse would thereby act as a control to manage both supply and demand.

34. What would be the optimal timing for GGRs to be integrated into the UK ETS, taking into account the considerations set out above? Please explain your answer with reference to impacts on both the UK ETS and GGR deployment.

Carbon Gap sees a critical need for compliance markets to scale GGR, and would like to see some form of compliance mechanism for GGR adopted as soon as possible, ideally before

2030. Carbon Gap is still undertaking research to examine if ETS integration, or an alternative mechanism such as a dedicated Removals Trading System, would be most appropriate.

Any timeline for GGRs to be integrated into the UK ETS is fully conditional on the establishment of appropriate standards/MRV.

Carbon Gap supports a phased integration approach, through a pilot phase with a low initial GGR cap to test the impacts of GGR integration.

CONTACT

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