REA Consultation Response: Greenhouse gas removals (GGR) business models

The Association for Renewable Energy & Clean Technology (REA) is pleased to submit this response to the above consultation. The REA represents a wide variety of organisations, including generators, project developers, fuel and power suppliers, investors, equipment producers and service providers. Members range in size from major multinationals to sole traders. There are over 500 corporate members of the REA, making it the largest renewable energy trade association in the UK.

Of further relevance to this consultation, the REA has a large number of bioenergy industry stakeholders as part of its membership in the UK, with member forums directly involved in biomass heat, biomass power, energy from waste, green gasses, advanced conversion technologies, hydrogen and renewable transport fuels.

Section 1: Rationale for developing business models for GGRs

Question 1: Do you agree that the Government should develop a GGR business model to enable a diverse portfolio of GGR technologies to deploy at scale in the next decade?

Yes.

The Climate Change Committee, within the sixth carbon budget, has made clear that under a balanced net zero pathway an estimated 58MtCO2/year of engineered carbon removals will be needed by 2050. CCC scenarios are focused on the delivery of the most developed forms of carbon removals being DACCs and BECCS, although stress that these will still need direct government support to get the sectors going to establish a vibrant negative emission market.

They also suggest that other removal technologies like biochar, carbon-negative cement and enhanced weathering should be pursued to allow them to enable a diverse source for negative emissions and provide net-negative options for hard-to-treat sectors.

It is recognised that Government has put forward several more focused carbon capture business models which are also very welcome. However, the REA believe it important for there to be a broader capture business model available, applicable to technologies either not catered for by other models or restricted due to current eligibility criteria. This will enable the UK to see the development of a diverse set of sectors and help establish the UK as a global leader in their delivery.

Direct Government support through this business model is also seen as crucial for furthering the establishment of negative emission markets. While negative emission prices and standards are starting to be explored in both the voluntary and obligated carbon markets, it is recognised that there remains a long way to go before such markets could support such technologies, given the barriers correctly identified within the consultation document. Initial support through a GGR Business Model can be expected to drive innovation in technologies, help negative emission price discovery and further the development of strong negative emission standards. All of which will help speed up the delivery of a sector that can operate purely via the market, rather than additional government support.

As a way of demonstrating the current diversity in possible carbon capture sectors, the REA has members interested in developing the following technologies which could benefit from the GGR Business Model:

- Hydrogen BECCS
- Biomethane with BECCS
- Energy form Waste applications that fall outside of the ICC.
- Biomass Power projects, which do not meet the eligibility 100 MW threshold within the Power BECCS cluster sequence process to apply for the Power BECCS business model.
- Renewable Transport Fuel Refinery with BECCS, including SAF BECCS
- Biochar developments (while it is recognised that GGR business model proposals do not currently cover biochar, the REA would support its inclusion following further anlysis of the sector by BEIS)

[1] CCC (2021) Sixth Carbon Budget https://www.theccc.org.uk/publication/sixth-carbon-budget/

Question 2: To support a portfolio approach to GGR deployment, do you agree that Government policy for incentivising negative emissions should be technology-neutral as far as possible?

Yes, but this does not mean only competing on price.

Technology neutrality is a good long-term principle; however, technologies must be given the opportunity to fairly establish themselves to similar readiness levels before being required to compete against cost. The policy intent of the GGR Business Model should be to support diversity of carbon capture options.

Technology neutrality should not be seen as the same thing as purely price-driven competition. With such a diverse set of technologies, a design based on price would mean actively picking winners, while undermining the policy intent of delivering a diverse market.

As such, in the allocation of business model contracts, consideration will need to be given to ensure there is diversity in the types of projects supported. When f moving towards competitive auctions, it will be important to consider how technologies at similar technology readiness levels are grouped and separate competitions run to ensure diversity in what is supported.

Section 2: A contract-based business model for negative emissions

Question 3: Do you agree with the Government's principles for policy design?

Yes

The REA is broadly supportive of the design principles highlighted in the consultation. We would, however, raise the following points:

- The Competition Principle should be a medium-term policy aim, recognising that initially, the policy intent is to deliver a wide range of GGR technologies.

- Competition, Value for money and Technology Neutrality are all important principles but competing for the lowest cost should not be confused with delivering value for money when the aim is to deliver a range of carbon capture technologies.

- The Market Development principle should refer to aiming to get to a situation where both obligated and voluntary carbon markets can support projects.

- Ensuring a 'High Standard of Negative Emissions' should also be included as a principle in design, reflecting the need for the establishment of strong monitoring, verification and reporting mechanism that delivers negative emissions aligned with a strong permanence definition. This is crucial to developing public confidence in the sector.

- A principle of 'complementing emission reductions' and not replacing them should also be considered. It is important that the delivery of negative emissions is seen in addition to carbon emission reduction activities, as part of a pathway to net zero, not as an accounting trick to not have to do emission reductions in the first place. This is, again, important for building public confidence in the sector.

Question 4: Do you agree with our overall approach to introduce a contract-based business model for GGRs to provide revenue support for negative emissions?

Yes.

The REA believe a contract-based approach to be the most suitable way to address the initial barriers to the market for these technologies, helping to provide revenue certainty against which investment decisions can be made.

However, we would also stress, that additional innovation funding, in the form of grants may still be required in some cases where GGR technologies may not yet be at the technology readiness level to do so.

Equally, contractual support also needs to be accompanied by the development of a strong MRV negative emission standard. Governmental accreditation of negative emission standards will go a significant way to help the development of private markets for negative emissions, lowering the overall contractual price needed at this stage and expediting the establishment of sectors no longer reliant on government support.

Question 5: What is your preferred contract scheme of those outlined in the consultation? Please provide arguments to support your view.

REA members have expressed a preference for both a Negative Emission Payment (NEP) and a CfD approach. The NEP is seen as giving high levels of early confidence for investors and predictable revenue streams, while easily complementing another support mechanisms such as the RO, power CfDs and the RTFO. At the same time, the claw back mechanism provides a low-risk price discovery mechanism for the sector, with revenues also coming to Government.

Equally, it is recognised that the CfD mechanism is well understood by developers and investors. It is also recognised as a favoured mechanism of government as the basis of the ICC, Power BECCS and Hydrogen Business Models. However, in this case, the concern is raised that for early projects there is little data on which to easily base a market reference price, especially when considering such a diverse range of GGR technologies that could be supported. This makes the CfD difficult to model for early projects applying to the scheme and may result in a higher cost of capital for initial projects than a NEP approach. To combat this, early projects would need to be compensated at full sales cost, with a return on investment, effectively setting a reference price of zero.

Given the above, the REA propose a Three-Phase approach to contractual arrangements, utilising the strengths of both NEP and CfD arrangements. The first few GGR Business Models should be based on a NEP (Phase 1). This will provide a high level of confidence and be the easiest to apply to a range of GGR technologies. It will also assist in price discovery that can then form the basis of the design of a CfD contract and enable the development of an independent market. The GGR Business Model could then move over to a CfD arrangement after the first few NEPs have been awarded and further price evidence gathered (Phase 2). We believe this would help meet both policy objectives and be the fastest way to establish a vibrant GGR sector, as well as being an effective way of driving down prices after the first few projects are proven successful. Following the move to CfDs, and the establishment of realistic reference and strike prices, Government and industry could then consider when best to move to competitive auctions (Phase 3).

This also provides a transition pathway to the establishment of a strong negative emission market, which will enable the sector to move away from government support quickly.

Some members did also show support for a Negative Emission Guarantee, primarily because it allows the easiest route to developers being able to benefit from selling credits direct to the voluntary market. However, ultimately it is not stated as our preferred position due to the proposal in the consultation stating there will be payments only once every three years. This is not a bankable timescale for financiers. If this proves to be Government's preferred model, it must have at least annual payments in order to make it viable.

Question 6: When might it be feasible to introduce an auction mechanism for GGR contracts, and what criteria should the Government consider when developing its allocation process?

While the REA are supportive of seeing competitive auctions delivered, it should be recognised that it could take some time before it is realistic to move to competitive auctions given the range of technologies expected to be supported by the GGR business model and the complicated market dynamics that will likely lead to a significant range in price levels.

Local conditions can be expected to have a significant influence on prices, for example, the proximity to a CCS pipeline or relevant carbon off-taker could have a significant influence on transport and storage prices. The costs of retrofitting carbon capture on existing processes, versus building new, ones will also have an impact. Equally, different technologies may also benefit from a range of stackable revenue streams that other strategically important technologies might not have access to, including other government subsidies for renewable power or fuel production. All these factors mean it is unlikely that there will be a point where all technologies eligible under the GGR Business Model can be considered to operate on a level playing field.

To address this issue, it is likely that some form of pot arrangements will be required, as is the case with the current electricity CfD. However, determining how best to divide these pots will require evidence to be gathered from the performance of the bi-laterally agreed CfDs first and will take time to review.

As such, Government should focus on ensuring they are achieving both transparent price discovery and value for money through bilateral contracts in the first instance, before then

further trying to drive prices down through competitive auctions. In considering value for money, Government can also consider a wider set of criteria including decarbonisation impact, deliverability, regional economic benefits, and encouraging new technologies and investment.

Question 7: How can the Government most effectively reward innovation and cost reduction in early GGR contracts?

It will be important that government considers projects against a wider site of criteria than just wishing to contract the cheapest form of engineered removals. It will be important that Government consciously seeks a diverse range of projects from multiple sectors, and see projects produced at different scales so that both new build and retrofit applications are considered.

As such, it will be important for Government to take a principle-based approach when assessing projects. Government should be clear in setting out these principles in advance, making explicit what they wish the GGR business model to achieve. Different GGR technologies will then be able to respond to these principles and innovate accordingly.

Question 8: If the Government pursues a Negative Emissions Contract for Difference, what is the most appropriate basis for setting the reference price for initial contracts? Please provide arguments to support your view.

It is recognised that the negative emission market is currently immature, with only some limited developments and price signals starting to be seen in voluntary carbon markets. It is unlikely that this limited value will be enough to set a sufficient reference price, or one that will accurately capture different premiums of types of carbon capture in terms of permanence, volume or environmental benefits. This will be especially critical to the GGR business model where different capture technologies are seeking support.

As described, in question 5, Government could help facilitate price discovery by rewarding the first GGR business models through a straight Negative Emission Payment. This would avoid having to see a price set by an immature market and be better matched to bilateral discussions on intial costs of project development. These early projects will in turn help to establish the market against which the CfD refence price could then be set in Phase two.

If Government choose not to do a NEP first, then intial contracts will need to be linked to the actual sales price achieved, with an element of additional return. While likely initially expensive, this will help to quickly establish the negative emission market and lead to price discovery which can be used in later CfD contracts, driving down development costs and creating a basis of negative emission demand.

Government should also be mindful of what is happening in other Carbon Capture Business Models, such as the ICC, or indeed the voluntary carbon markets, as these developments may also start to help set reference prices which intial GGR Business models will need to be mindful of.

9: What mechanism could the Government introduce to ensure that project developers achieve the highest possible sales price for negative emissions credits on the market?

While it will take time to implement, providing a strong trajectory and pathway for the inclusion of negative emissions into the UK ETS will help stimulate both demand and attention for negative

emissions. Linking the possibility of negative emissions to UK ETS parties and meeting their obligations through the purchase of negative emissions will help to drive up their value. A similar result could also be achieved in the voluntary markets if some form of gain share mechanism could be adopted for negative emission over regular carbon credits.

Finally, Government should also recognise the value that could also be applied to GGRs that are accredited under government-backed accreditation. If done transparently, and to a high standard, It is likely that this form of accreditation will carry an additional premium to negative emissions accredited through industry-based voluntary markets, being seen as a more rigorous and transparent standard.

Question 10: What do you think is the most appropriate option for setting the length of GGR contracts? Please explain your rationale.

The GGR business model will need to consider the range of technologies to be supported, recognising that different technologies may well need different lengths of contract to be able to attract investment and reach deployment. This will mean a level of bilateral negotiation on a project-by-project basis is going to be needed for setting realistic and investable contract lengths. A sensible length of contract is going to be needed to reassure investors of consistent returns for as long as it takes for a mature negative emission market to be fully established.

While we recognise the Element Energy Analysis highlighted in the consultation, we would also stress that the CfD is not only there to provide investment returns on Capex, but to provide Opex support as the negative emission market is established and price discovery is realised. This must be considered in the setting of initial contract length.

This is a point recognised in the Dispatchable Power Agreement (DPA) and the Industrial Carbon Capture Contract Business Models (ICC), where there are options for being flexible on contract length.

Within the DPA initial projects, regardless of whether they are new build or retrofit, can choose an appropriate term length between 10 and 15 years.

Similarly, the ICC allows for 10 years with the option of a 5-year extension if specific market conditions are met.

Both these arrangements recognise that different sites, and financiers, are likely to have different appetites for contract length, especially with an initial first-of-a-kind project. Further discussion should be had with individual GGR technologies to understand what is a sensible length for them.

Question 11: Would it be desirable to include a review mechanism in early GGR contracts? If no, please outline your reasons. If yes, please give your views on how a review mechanism might be designed.

It should be recognised that such a review mechanism itself could create an additional level of risk for developers and investors considering the contractual arrangement, which in turn could push up the initial cost of capital and contractual prices. As such, further consultation is likely needed to properly consider how such a review mechanism would be designed and whether it is necessary.

We would also reiterate that if choosing a CfD model then it is likely the chances of overcompensation are well mitigated by the mechanism itself, which sees participants pay back if the wholesale market price is over the strike price. Again, this demonstrates why initially using a NEP for price discovery, but then using the learnings of that process to move to a CfD structure, based on real-world performance, will help set the correct strike price and mitigate concerns of over subsidy.

Question 12: Should the Government allow project developers to combine negative emissions support under a GGR business model with other support mechanisms for co-products? Please provide arguments to support your view on whether this could be an effective route to supporting multi-product GGR projects.

Yes, it is essential.

With the notable exceptions of DACCs, all other forms of GGR are likely to see negative emissions as a co-product, or additional service, to the primary site function - be that power production, waste management, SAF production or something else.

Where these processes are also aligned to net zero aims, actively helping decarbonisation, and require some form of support to help de-risk investment returns, it is entirely appropriate that they be able to stack revenue streams as long as it is clear what each form of support is paying for. In many cases, it will be the ability to stack revenue streams that make such innovative projects financeable and deliverable.

The stacking of mechanisms will also actively help to keep the GGR support price lower, as there will be confidence provided in multiple revenue streams, rather than relying on one. Without this, it is unlikely that such GGR projects will be investable.

In addition, where GGR is being retrofitted, it will be essential to current business models are not disrupted. Failure to realise the level of returns on the initial investment, because the initial support is withdrawn, will make it much harder for financiers to consider further investment on a site, especially when considering innovative GGR technologies.

The GGR Business model must be able to operate in conjunction with existing CfDs, the RO, the RTFO, FiTs, Green Gas Support Scheme, Hydrogen Business Model and the RHI - to highlight those of relevance in the energy sector.

Question 13: Do you believe that capital support instruments are necessary to complement GGR business models? If so, please outline your reasons and your preferred type of capex support mechanism.

Yes.

GGR Technologies are at different stages of development, while some may already be at the stage of being able to deploy commercially under government contracted arrangements, some still need innovation and demonstration funding.

It remains appropriate that capital grants be offered, considering innovation potential and the strategic need for a range of negative emissions sources to meet our net zero goals. Capital support mechanisms should be considered a further helpful tool where it is important to see innovative GGR technologies brought forward

Question 14: What other issues should the Government consider when progressing work on the design of a GGR business model? Please focus your response on issues that are not directly considered through this consultation.

Several further issues have been raised by members:

- Explicit reference should be made to further technologies that may find it possible to apply to the GGR Business Model. In particular, this includes technologies currently excluded from current ICC or Power BECCS cluster sequencing allocation processes, due to current eligibility threshold criteria. For example, the lack of inclusion of small-scale power BECCS projects in the current allocation round has created a high level of uncertainty for projects below 100 MW and their ability to apply for funding. Making clear that such projects could still apply to the GGR Business Model would help deliver a level of certainty that there is a route to market available for such projects.

- Similarly, the Hydrogen Business Model allocation process also currently excludes biohydrogen production routes, despite being allowed as part of the hydrogen standard. Such projects should still be able to apply to the GGR business model if also captureing carbon.

- Members are keen to explore the inclusion of Biochar into the GGR Business model, while it is currently excluded. We recognise Government has stated a need to further review the evidence on its inclusion, however, there is no reference to the process or timetable for doing such a review. This should be made explicit with a clear route to industry engagement on the issue.

- The consultation is relatively light on stating considerations around Government accreditation of negative emissions. This will be an important factor in developing both the business model and a negative emission market. Making clear the Government's accepted accreditation will provide robustness and confidence in the sector, which in turn will help drive strong standards. This is a key element to consider in the development of the GGR business model, as well as expediate the evolution of the UK ETS to accept negative emissions.

- Further clarity is also required around how transportation, shipping and storage costs will be considered in setting the contracted price of the GGR Business model, which may well need to be supported as a separate payment.

Section 3: Building a market for negative emissions

Question 15: What do you believe is the most appropriate market framework for supporting initial GGR projects over the next decade, and how might this framework evolve over time? In your answer please consider the market options outlined in Section 3, indicating which option or combination of options would be preferable to achieve our objectives.

As described in the REA's response to the Governments consultation earlier in the year, the REA are in favour of seeing the inclusion of GGR Units within the UK ETS as the main market framework for establishing a negative emission market [1]. This, in the longer term, should be able to support GGR development, reducing the need for Government based support mechanisms.

A good foundation for UK ETS design consideration can be found in a report published by Oxera [2] in which they propose three models of greater or lesser integration of a GGR unit into an emission trading scheme. However, they note that all require a reduction in the number of emission allowances to apply pressure on market participants to continue to decarbonise rather than rely solely on removals. These designs include:

1. Separate Markets for EA's and GGR units, with the Government acting as broker to control numbers of EAs and GGRs, affecting both their price and availability to drive market participant behaviours.
2. Separate markets, but with a price cap for GGR units, so that GGRs do not become more valuable than EA's.
3. Fully integrated markets whereby EAs and GGRs are auctioned together assuming the cost convergence of the two units within a mature market scenario.

It is possible these three models likely reflect transitional steps Government may wish to consider in the introduction of GGRs. Option one provides the most control, as the GGR market is established, and participant behaviours can be monitored. Whereas option three reflects a long-term aim whereby the market is operating with limited government intervention. As such these steps could be considered the transitional pathway for how the framework could develop over the next decade.

The establishment of a GGR unit in the UK ETS would also necessitate a government-backed accreditation for negative emissions. It is appropriate then for there to be opportunities for market participants to interact both with the voluntary market and for those sites developing GGRs outside of the UK ETS to also have the option to be able to provide credits into the ETS. This of course will need careful accounting and likely require the establishment of suitable registers of credits to ensure that there is no double counting between markets. The design of GGRs within the UK ETS should set the expectation from the start that in the medium to long term it aims to interact with other GGR markets. Confirmation of those linkages can then be confirmed once robust processes are in place.

[1] The REA's response to the consultation on Developing the UK Emission Trading Scheme can be read here: https://www.r-e-a.net/resources/rea-draft-response-to-developing-the-uk-emissions-trading-scheme-call-for-evidence/

[2] Market design for negative emissions in the UK ETS, Oxera, April 2022. https://www.oxera.com/insights/reports/market-design-for-negative-emissions-in-the-uk-ets/

Question 16: What steps should the Government take to stimulate voluntary corporate demand for negative emissions credits?

Develop and publish a clear pathway for the development of a government-endorsed accreditation for negative emissions, including clear ambitions for their inclusion in the UK ETS and support for the development of their use in voluntary carbon markets. Providing such government endorsement will send a clear market signal that GGR credits can be considered for use in corporate decarbonisation strategies and encourage demand.

Question 17: To maximise voluntary private investment in negative emissions credits, would it be preferable for the Government to (i) establish a regulated market for engineered GGRs or (ii) directly endorse voluntary carbon market bodies that meet high integrity and verification standards? Please outline your view of the main benefits and challenges of each approach.

Government should be aiming to utilise the work that is being done in both academia and the voluntary markets to establish their own government-backed accreditation for negative emissions. This can form the basis of their inclusion in a regulated market as part of the UK ETS, as described in question 15. This will set a strong benchmark for which voluntary private investors consider different credits in the market, as well as provide a strong signal for continued investment in the sector. A clear transitional pathway to GGR unit inclusion in the UK ETS should be developed, further demonstrating the government's intentions and driving confidence in the sector.

Question 18: Would it be desirable for the Government to establish a regulated market for engineered GGRs to allow for future integration with the UK ETS and/or provide the foundation for a GGR obligation scheme? If so, how could this be achieved?

Yes.

This is since the majority of industries likely interested in utilising such credits are, or will be, captured within the UK ETS obligations.

As described in Question 15, the REA are in favour of seeing the inclusion of GGR Units within the UK ETS as the main market framework for establishing a negative emission market. This, in the longer term, should be able to support GGR development, reducing the need for Government based support mechanisms. The process for developing a regulated market should be focused on:

- Setting out the transition pathway for the inclusion of GGR Units within UK ETS, possibly using the steps described in question 15 aligned with the OXERA report.
- Providing confidence to the market by establishing a government-backed accreditation standard that demonstrates clear support for and scrutiny of negative emission credits to drive confidence in the market.

Section 4: Accounting and sustainability frameworks

Question 19: Do you agree with the government's immediate priority for MRV, including a review of standards that could underpin business model support for initial GGR projects? Please share any views or suggestions that could help to inform our approach.

The REA agrees with the proposed approach of reviewing the existing landscape of MRV developments, which should be considered alongside the recommendations of the Government's own MRV Task and Finish Group and in further consultation with the industry. This will form a strong basis for developing government-backed MRV protocols for negative emissions, both setting a recognisable standard and, due to building on existing work, likely be compatible with MRV developments in voluntary carbon markets, which should also be an important aim.

Given the identification of BECCS of strategic importance in the consultation, we would also stress the importance of building upon existing biomass and energy from waste sustainability governance arrangements. Both include existing monitoring, reporting and verification protocols upon which negative emission protocols can be based. Starting from scratch, without due regard for existing protocols risks unnecessarily complicating the market, leading to unintended consequences.

Finally, Government should also be aware that due to the diverse number of technologies that could be supported by the GGR Business model it is unlikely that one set of MRV protocols is likely to be applicable to all technologies. A principle-based approach of what is to be achieved by a MRV process might need to be established to ensure similar outcomes across protocols.

Question 20: Beyond ensuring the legitimacy of initial projects, what is the appropriate role for the government in developing a robust and enduring framework for negative emissions MRV, compared to the role of other bodies such as those outlined in Figure 1?

The government's role differs from that of other bodies in that it is setting a national standard and MRV protocol against which to run its own obligated regulated carbon market. This carries with it a level of further authority and scrutiny. For similar reasons, it would not be appropriate for government to just endorse other bodies' standards, especially given differences in methodology assumptions and the potential for contradiction or scheme diversions. As such, it would be appropriate for Government to use other standards as a starting point, but to ultimately develop a UK-leading standard as the basis for GGR Units within the UK ETS.

A regulated market, and standard, will need the appointment of a regulator in order properly determine compliance with the negative emission standard and its use within a regulated market.

Question 21: Do you agree with our proposed principles for negative emissions legitimacy?

The listed principles are a good starting point. We believe they could be further strengthened by considering the Oxford Principles for Net Zero Aligned Carbon Offsetting [1], which provide further detail on how the suggested principles could be applied.

We welcome the 'principle-based' approach to considering the criteria for negative emissions legitimacy, recognising that different technologies are likely to achieve these principles differently and to different extents. As such, thought will have to be given to how delivering against these principles is rewarded, recognising that within a wide market of GGR technologies there is going to be a need to balance different outcomes. For example, nature-based carbon capture may perform very well in relation to CO2 source and net negativity but have a lower level of permanence than engineered solutions. As such, thresholds and rewards will need to be considered around how these principles are applied.

[1] Allen et al. (2020) The Oxford Principles for Net Zero Aligned Carbon Offsetting

Section 5: Applicability across different GGR technologies

Question 22: Are there specific policy requirements for initial DACCS projects that the Government should take into consideration? Please provide arguments to support your view.

The REA is not intending to respond to this question as we do not have members directly involved in DACCS developmnet

Question 23: Do you have views on the applicability of the GGR business model to BECCS projects that are not eligible for the Industrial Carbon Capture or Power BECCS business models?

It is important that the GGR Business Model becomes the umbrella mechanism by which projects that cannot get support through the Power BECCS, ICC or Hydrogen Business Models continue to have a route to market.

Importantly this must include applications that may technically be eligible for other business models but then become excluded through the chosen eligibility criteria within a specific allocation process. Most recently we have seen this be the case with the Power BECCS Cluster Sequencing Process, were within the current phase, projects less than 100 MW capacity are not able to apply. These eligibility restrictions immediately exclude ~1.3GW of operational biomass power plants with the potential to provide ~8.3Mtpa of carbon removals, without providing a clear indication of whether and when support to develop BECCS might be extended to this cohort of assets.

Similarly, this is the case for bioenergy base hydrogen BECCS production routes, that are eligible within the hydrogen standard but not yet supported in current hydrogen business model allocation processes.

Providing clarity that such projects could still apply to the GGR Business Model, and be supported, would provide confidence and a route to market for such projects. We are very concerned that without this. these projects could fall through the gap. Excluded from the GGR Business Model because there is technically another model available, but also excluded from that due to current allocation eligibility criteria.

The GGR Business Model must be as open as possible to all applications of BECCS and the different processes that could be developed. In line with the policy intent, it would be preferable that eligibility is based on demonstrating why another business model is not available for a project, rather than having a rigid set of exclusions that blocks opportunities for innovation and further investment.

Question 24: Do you have views on the applicability of the GGR business model to novel technologies excluding DACCS and BECCS? Please outline any specific policy requirements or other considerations we should take into account.

We have several members who would be keen to urgently engage with BEIS to see the inclusion of biochar within the GGR Business model. While we recognise BEIS's current position to further review evidence in relation to its inclusion, in designing the GGR business model BEIS should set out a timetable and process for conducting this review. The REA would be happy to help facilitate relevant industry roundtables and information gathering so that biochar is properly considered as a viable engineered removal pathway. Currently, there is a lack of route to market for this technology despite it being a valuable co-product of several biomass and waste treatment processes, such as gasification and pyrolysis.

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