# Version 3: Revised 01 February 2021:

# Revision to Q&A issued 1 February 2021

Questions 84 to 95 added.

# Correction to Q&A issued 8 December 2020

The answer to Question Number 38 has been edited, in that the words "or largely (>66%)" have been removed, to make it consistent with the answer to Question Number 29. This is the only change made to the Q&A issued 8 December 2020.

### Corrections to, and answers to questions asked on the procurement

#### Corrections

Following identification of issues with the documentation issued in November 2020, the following documents have been updated and reissued:

- Direct air capture and greenhouse gas removal programme: competition guidance notes
- Greenhouse gas removal (GGR) innovation programme phase 1: application form
- GGR Phase 1 Finance form
- GGR Workbook
- GDPR Declaration

Re-issued documents are clearly identified as such and are dated 8<sup>th</sup> December 2020. These can be found on Contracts Finder and also on the competition website - <u>https://www.gov.uk/government/publications/direct-air-capture-and-other-greenhouse-gas-removal-technologies-competition</u>

The details of changes to these documents are provide below

1.		
	Criterion 6 Guidance says:	
	This criterion will assess the:	

	<ul> <li>Robustness of the project costs estimate – i.e. whether the proposed eligible project costs are realistic &amp; justified in terms of the project plan and sufficient to yield the deliverables sought;</li> <li>Project cost.</li> </ul>	Commercial colleagues have informed us that SBRI competitions should not be scored on price. Therefore the "Project cost" element of Criterion 6 has been removed from the guidance, Criterion 6 re-weighted to 20% to reflect this change, Criterion 5 (Project Delivery) re-weighted to 25% and the Guidance re-issued. These updated criteria can be found on <b>pages 29 to 30</b> of the updated guidance note The application form has also been updated to reflect this change.
2.	On page 21 of the Guidance, the Guidance stated "Your total costs <i>including</i> VAT should not exceed the maximum allowable budget per project."	The guidance issued was incorrect. This should have read " <i>excluding</i> VAT". This has been corrected on <b>page 21</b> of the Guidance note and the Guidance note has been re-issued
3.	The guidance notes state that BEIS requires only a UK licence for non-commercial purposes, whereas the Ts & Cs stipulate a world-wide licence together with any background IP for any purpose.	An error was made in the drafting of the guidance. The guidance should have said "world-wide" license. This has been corrected and the guidance re-issued. The correction of on <b>page 34</b> of the re-issued guidance.
4.	The finance form published allowed applicants to add their own costs – not to be claimed from BEIS – towards project costs.	An error was made when generating the finance form. For SBRI competitions like this one <i>full project costs are covered by BEIS</i> , and we do not expect applicants to cover <i>any</i> eligible costs themselves. Applicants should take care to ensure that their proposed Phase 1 project can be delivered within the cost limit of £250k (excluding VAT). Projects outside this cost limit are not eligible for funding
5.	Some errors in the GGR Workbook were identified	The following cells have been updated, and the workbook reissued

	<ul> <li>Grey hydrogen has been removed as a fuel option due to inconsistent assumptions incompatible with Green Book data</li> <li>Streamlined fuel and electricity prices to write them with 1 decimal place</li> <li>Streamlined fuel and electricity emissions intensities to write them with 3 decimal places</li> <li>Changed grid electricity carbon intensities to match Green Book assumptions</li> </ul>
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## Answers to questions

ID	Question	Date Asked	Draft response
6.	on page 10 of the application form it says that:	10/11/2020	Biochar is in scope. The intent for that sentence was to remove from
	funding will not be provided for projects where the		the scope soil carbon sequestration which has been defined by the
	technology development focuses on: Projects		Royal Society and Royal Academy of Engineering as "Changing
	where the primary route to removal is through soil		agricultural practices such as tillage or crop rotations to increase the
	carbon sequestration. Does this mean that all		soil carbon content." (https://royalsociety.org/topics-
	biochar technologies are excluded?		policy/projects/greenhouse-gas-removal/).
7.	In GGR Workbook. Tab : Data	10/11/2020	The blue and green hydrogen data has not been mixed up, and the
	Are these data for Green H2 correct? it seemed		green hydrogen data is calculated as if grid electricity (with its
	to me maybe the Carbon intensity of blue and		current carbon intensity) has been used to power the electrolysers.
	green had been mixed up?		If applicants believe that their fuel or electricity source will have a
	2030		different carbon intensity or cost, they should use the optional boxes
			provided to input their figures, with justification for these figures
	Fuel sources £/MWh (tCO2/MWh)		provided in the application form.
	Biogas 76 0.08		
	Blue hydrogen 42.25 0.01345		
	Green hydrogen 117.1 0.158	10/11/0000	
8.	Secondly grid electricity for 2030 is noted as 0.215	10/11/2020	This should have been aligned with Green Book assumptions. The
	tCO2/MWh		workbook has been updated to reflect this. The workbook has been
	This is very high compared to BEIS green book		reissued.
	predictions any particular reason?	40/44/0000	
9.	Can we make it clear that the scope includes	10/11/2020	Any process which generates CO <sub>2</sub> from sustainable biological
	processes that do not include combustion (I am		sources, and separates this CO <sub>2</sub> so that it can them be permanently
	envisaging gasification that would give a gas with		stored, thus resulting in a net reduction of $CO_2$ in the atmosphere, is
	CO and H2, so there is not necessarily a		in scope.
	combustion step. Others may be envisaging		
	biological pathways (indeed the operational plants		
	in the US use fermentation and then CO2		
	separation so similarly do not use combustion)		

10.	Can we make it clear that the scope includes technologies that mean the CO2 could be sequestered or the carbon could be sequestered in another way e.g. production of materials or polymers rather than storage of the CO2?	10/11/2020	In line with Page 17 of the Guidance, which reads "The end point of the end-to-end process [for Greenhouse Gas Removal] is either (a) a stream of concentrated CO <sub>2</sub> which meets the specifications set out in Annex 4 or (b) <i>a product in which carbon is chemically fixed</i> <i>permanently, and a proposal for storing or using that product</i> " any form of permanent carbon or CO <sub>2</sub> storage is in scope, including incorporation of carbon captured into solid products such as polymers. In order for this approach to count as Greenhouse Gas Removal the carbon stored in this way must have been taken from the atmosphere or ocean, not sourced from fossil fuels.
11.	Could you just remind me what the rules are about companies being part of more than one consortium bid?	11/11/2020	No applicant can act as consortium lead for more than one bid. Applicants may be part of multiple consortia, for unique projects delivering different GGR solutions. BEIS reserves the right to assess the capability of the team to deliver multiple projects and whether the different projects are unique at the eligibility stage.
12.	We are wondering if there is an opportunity and/or willingness through this competition for a pre-feed study to be funded. The study would look to understand the viability of the project in the UK and opportunity for collaboration with the UK Government.	17/11/2020	<ul> <li>The express purpose of this competition is to design projects that could be funded within Phase 2. Phase 2 funding is likely to be up to £5m per project.</li> <li>Any design of any project that would be more costly than this would be out of scope. A project which required a further FEED study after Phase 1, but before construction, would be out of scope.</li> <li>With regard to "collaboration with the UK Government", this competition is the vehicle through which the Government aims to support Direct Air Capture and other GGR technologies. At present there are no other DAC or GGR activities planned.</li> </ul>
13.	My company is currently not incorporated yet. Is it possible to register without being incorporated, and then update this by the deadline of the application itself? Can I register as a person? Or	18/11/2020	We are willing to accept registrations from individuals at this time, so long as incorporation of a company is completed by the application deadline. No future calls for phase 1 are currently planned.

	are there any future calls for the same competition?		
14.	Can a non-UK entity apply to the competition?	19/11/2020	A non-UK entity can apply so long as at least 50% of the work is done in the UK
15.	If only UK-based entities are allowed to participate, it is sufficient for a overseas-based company to create a 100% owned UK-based subsidiary and apply using that entity?	19/11/2020	A non-UK entity can apply so long as at least 50% of the work is done in the UK
16.	Please confirm that beyond the 50.0% local content requirement (see Eligibility for Funding subparagraph on Project Location), there are no other in-country requirements (e.g., UK ownership requirements, UK intellectual property, etc.).	19/11/2020	There are no other requirements. The IP stipulations are laid out in the terms and conditions.
17.	Please confirm there is no financial cost matching requirements involved to Phase I. In US-based projects (e.g., APRA-e, DoE and DoD) there is often a requirement for the project sponsor to provide a percent match (e.g., 80% government and 20% from sponsor). Please confirm I have not missed this concept in the GGR Competition requirements.	19/11/2020	There is no financial cost matching required.
18.	In the Financial section, the document states participants must have the financial wherewithal. Is this because the reimbursement cycle is the participants pay the vendors and sub- contractors, then invoice and then are repaid over time? Essentially, I'm wondering if the financial wherewithal requirement is in place because participants are required to provide their own working capital.	19/11/2020	Our usual practice is to pay invoices quarterly, however if necessary for cashflow reasons, would be willing to consider monthly payments. We cannot make any payments in advance of need.

19.	The Ts & Cs linked to on the competition page appear to apply only for phase 1. It isn't clear what Ts & Cs will apply in phase 2. This concern is wider than IP, but it is especially important for IP because phase 2 is where the majority is likely to be created.	19/11/2020	The terms and conditions will be the same in Phase 2 as they are in Phase 1.
20.	<ul> <li>15% of the scoring is allocated on the basis of a simple ranking of Project Cost – without reference (for that calculation) to the scope or complexity of the project. This means of course that a project applying for £100K will score 9 points more overall than a £250K project -a very substantial difference.</li> <li>Whilst I understand of course the need for best value, I expected the project cost to be evaluated with reference to the scale / scope of the project. This mechanism will skew the allocation of funding to simpler projects. I would only expect to see a simple cost metric like this applied to compare projects that are like-for-like.</li> </ul>	20/11/2020	Given the correction at the top of this document (we will no longer be applying Project Cost to judge Criterion 6) this question no longer applies.
21.	When we register, do you need to know organisations also included as fund recipients in the Project?	23/11/2020	No, the name of the lead organisation is sufficient.
22.	Are we allowed to keep the project title, and change the lead organisation in the timespan before 5 February submission?	23/11/2020	Yes, that is allowed.
23.	There is no specified form for registration. Is a simple text within Email sufficient?	23/11/2020	Yes, that is correct.

24.	With reference to the live SBRI competition on Direct Air capture & GGR, can one organisation take the project role on multiple proposals?	26/11/2020	Yes one organisation may be involved in multiple consortia. However one organisation may not lead more than one application. If multiple similar bids are submitted with similar organisations involved and different leads only the first bid received will be accepted.
25.	Is it possible to express our interest and at the final registration ask our UK partners to take the role of lead project organisation?	26/11/2020	Yes that is allowed.
26.	Is BECCS limited to electricity production, or are other energy vectors such as Hydrogen eligible for this funding	27/11/2020	Other vectors are in scope.
27.	Are project development costs for the bioenergy component of BECCS, alongside CO2 capturing technology, eligible for this funding	27/11/2020	For an end-to-end project the start point of the process is (a) the input of sustainable biomass' into a process. Costs associated with innovation relating to the planting, growth, harvesting, transport and/or primary preparation of biomass are <i>not</i> within scope. Innovation relating to secondary processing of an established biomass feedstock (e.g. wood pellets already used in bioenergy) which is essential for the process is within scope, so long as it can be demonstrated that this secondary processing is <i>novel</i> and is an essential step, and the resultant material cannot already be purchased on the market. In Phase 2, the cost of purchasing biomass to be used to operate, test and refine the operation of any innovative pilot plant constructed would be considered an <i>eligible</i> cost. However you should not that it is not allowable for an SBRI project to run a profit, therefore any monies secured by sale of energy, fuels or other products resulting from the process would need to be netted off against input costs.

28.	Are other forms of BECCS, such as gasification, within the scope of this SBRI?	27/11/2020	Yes, so long as the CO <sub>2</sub> is separated and is either stored, or has the potential to be stored.
29.	Is waste an eligible feedstock for BECCS in this SBRI?	27/11/2020	Organic waste is an eligible feedstock, as is mixed waste with organic components. You must quantify the organic component to enable assessment of your proposal against Criterion 1, Criterion 2 and Criterion 3. Entirely inorganic wastes are out of scope, as they do not result in removal of GHGs from the atmosphere
30.	Would developing an existing GGR technology to become more energy efficient in its process be eligible for this SBRI?	27/11/2020	Yes
31.	Is the Full Economic Cost (FEC) for academic institutions considered the market rate and good Value For Money (VFM) by BEIS? The reason for asking is that institutions are rarely allowed to submit costs lower than FEC.	27/11/2020	Yes
32.	On page 6 of the Guidance; it states 'BECCS, where biomass combustion'. Can you explain why BECCS is defined as combustion? Combustion can only produce heat (and thus electricity at low-efficiency) whereas gasification or pyrolysis can produce energy vectors with greater de-carbonising offset. Does BEIS see these technologies and the production of H2 from Biomass as within scope?	27/11/2020	Gasification, pyrolysis and other processes which generate carbon or carbon dioxide which can later be stored permanently are all within scope.
33.	As defined on p32, 'Project Costs will be marked proportionately to the lowest cost bid.'. This wording would indicate that this calculation would be done across all bids (whether in Lot 1 or 2). Is that the case?	27/11/2020	Given the correction at the top of this document (we will no longer be applying Project Cost to judge Criterion 6) this question no longer applies.
34.	Page 9 'Proposed projects in Lot 2 will need to be able to demonstrate an end-to-end solution.'. However:	27/11/2020	The understanding is correct. Lot 2 Projects, where the intended storage of the captured carbon is as CO2 in a geological formation, must be able to produce CO2 is a

	P 27 If relevant, path to permanent Transport & Storage. Storage location does not need to be identified at this stage, but if geological storage of captured GHG is the end point of removal this will need to be stated and an explanation of how the GHG will be produced in a form suitable for geological storage will need to be provided. So are we correct in understanding that Lot2 projects (in their Phase 2) must demonstrate the solution only up to preparation of CO2 for transport then storage?		form suitable for storage in geological formation. However, given the establishment and operation of geological CO2 storage is outside the scope of this competition, achieving storage in this way is not a requirement of the competition.
35.	Given that then noting that 'Transport and storage estimates will not be used as part of this assessment process, but instead will allow us to understand more about how the process would operate on a larger scale as part of a nationwide GGR and CCS strategy', can you define what the state of the CO2 is considered as suitable for transportation? The specification in the Guidance document in Annex 4 does not define the pressure. There is a significant difference in cost between providing the CO2 at atmospheric pressure , or 20barg or 70 barg etc Thus the state of the CO2 at project boundary needs to be precisely defined in order to compare options.	27/11/2020	Pressure is left currently undefined as pressures and temperatures would vary depending on the route to storage (e.g. CO <sub>2</sub> requirements associated with the storage reservoir utilised). As long as the project teams can demonstrate that the CO2 that is produced by their projects could be stored or used, then their projects are eligible for funding.
36.	If one or more of the stage in a chain of stages required for a full solution have been identified as the weak-link: ie the stage at the lowest TRL; is it acceptable to propose a Phase 1 feasibility study focussed on that weak link in detail under Lot2 if the other stages can be identified as relatively mature ? Or do you expect that all Lot2 projects must consider in detail all aspects of the chain?	27/11/2020	We cannot fund projects at TRLs lower than 4 in this competition. Therefore the overall project must be at TRL4, and must demonstrate how TRLs of 6 or higher for lot 1, and 7 or higher for lot 2 will be achieved by end of Phase 2. Within a TRL4 (or higher) project, new elements at lower TRLs can be considered <i>within</i> the project, noting that the ultimate objective of <i>any</i> project in this competition is to demonstrate how the project as

			a whole will demonstrate TRL 6 or higher for Lot 1, or TRL 7 or higher for Lot 2, can be achieved by end of Phase 2.
37.	On p16 'For an end-to-end project the start point of the process is either (a) the input of sustainable biomass' into a process'. Are the steps required to prepare, transport, blend, store biomass considered as part of the BECCS process – as they are not in place now it could be considered that an 'end-to-end' solution must address these critical steps. Or are you expecting the project proposals to consider as their starting point the feeding in of biomass to the correct specification, at the BECCS plant? On p16 'For an end-to-end project the start point of the process is either (a) the input of sustainable	27/11/2020 27/11/2020	For an end-to-end project the start point of the process is (a) the input of sustainable biomass' into a process. Costs associated with the planting, growth, harvesting, transport and/or primary preparation of biomass are <i>not</i> within scope. Secondary processing of an established biomass feedstock (e.g. wood pellets already used in bioenergy) which is essential for the process is within scope, so long as it can be demonstrated that this secondary processing is <i>novel</i> and is an essential step, and the resultant material cannot already be purchased on the market. Mixed waste streams are in scope. However only the organic fraction of the mixed waste can be considered to contribute towards
	biomass' which then refers to the RO Sustainability Criteria. Can we assume then that in designing the Phase 2 and considering the potential for BECCS, that all sustainable feedstock streams defined under the RO including mixed waste streams are considered in scope?		removal of CO2 from the atmosphere. Waste streams comprising entirely inorganic fractions are out-of- scope, as these do not remove CO2 from the atmosphere.
39.	Page 21 'Your total costs including VAT should not exceed the maximum allowable budget per project.' So are we to understand that for VAT- registered applicants the effective maximum limit is £208,333 + VAT ?	27/11/2020	The Guidance Note is in error. The sentence should read "Your total costs <i>excluding</i> VAT should not exceed the maximum allowable budget per project." The Guidance has been corrected and re-issued.
40.	The Electricity prices shown 'Retail' appear to be wholesale price (e.g. wind at £45/MWh). So can we assume we should use these price (e.g. grid at £56.8/MWh in 2030) for the sale of electricity?	27/11/2020	Yes. Use the grid electricity price for the sale of electricity.

41.	Given that the Electricity prices are wholesale rather than consumer prices what purchase price for electricity should be used? Should we use BEIS Green book forecasts? As discussed in the consultation, parity on assumptions for purchase of electricity is critical to compare technologies – for example between BECCS producing H2 (if it is deemed in scope – see Q1) and DAC. Understanding of course there could be special circumstances, such as a DAC platform in the NorthSea directly fed by wind-turbines, which would have very different metrics. Please confirm what electricity price to use for the purchase of electricity assuming no special circumstances.	27/11/2020	Please use the default values provided if you do not wish to apply your own values. If you wish to apply your own values, you should justify these values in your application.
42.	Under 'data' , is the carbon intensity for Green Hydrogen (0.158) transposed in error with Blue Hydrogen (0.01345)?	27/11/2020	The blue and green hydrogen data has not been mixed up, and the green hydrogen data is calculated as if grid electricity (with its current carbon intensity) has been used to power the electrolysers. If applicants believe that their fuel or electricity source will have a different carbon intensity or cost, they should use the optional boxes provided to input their figures, with justification for these figures provided in the application form.
43.	Is the Hydrogen as referenced as atmospheric pressure, or pressurised for transport (at what pressure). The difference is important because compression costs are high and some production methods (E.g. pressurised BECCS) require substantially less compression to achieve standard transport / storage conditions.	27/11/2020	It is unclear to BEIS what "Hydrogen" is referenced to. If the question relates to Hydrogen produced in the process to be applied, it is up to the bidder to define the final properties of the Hydrogen produced
44.	As noted in the guidance tab 'Saleable products should refer to any by-products that are produced by your GGR process which can be sold to improve the profitability of the technology, primarily within any of the categories of electricity, hydrogen or solid products.'. For a BECCS plant	27/11/2020	Yes

	producing H2 product (assuming that this is in scope with this competition noting previous question) would we then value that H2 product at the price shown for equivalent Hydrogen (i.e. at comparable carbon intensity? )		
45.	Can experimental work be included in the Design Phase to establish optimal conditions for a particular process?	27/11/2020	So long as you can demonstrate that your technology is overall at TRL 4 before you begin this project, experimentation to establish optimal conditions for processes is allowed. Experimentation to see if the project is feasible at all would <i>not be in scope</i> .
46.	We are a Large Company and plan to have in the consortium SME(s), could you please tell us if we are eligible for funding?	27/11/2020	From the information supplied, yes you are eligible for funding. There is no requirement to be an SME, or to be in a consortium with an SME, to enter this competition.
47.	Given the extremely low CO2 concentration in the atmosphere, the 100 tCO2/year DAC demonstrator may have to be configured with multiple smaller same units in series (e.g. each unit at 20 tCO2/year). Do we have to design and construct all of the smaller units required for the 100 tCO2/year target or only to design and showcase one of the component units?	27/11/2020	We would require that the technologies in lot 1 demonstrate that the whole project be able to draw down 100t/year CO2 by the end of phase 2. This means that you would have to design and construct all of the smaller units within the funding provided by phase 1 and phase 2. Bear in mind that phase 1 is only for design projects and so no demonstrators need to be produced by its end.
48.	Is CO2 utilisation essential to the 100tCO2/year DAC demonstrator? If so, does the involved CO2 utilisation technology also need to have a TRL of 4?	27/11/2020	No, CO <sub>2</sub> utilisation is not essential to the funding.
49.	The use of GWP <sub>100</sub> for short lived climate pollutants (SLCPs) significantly understates their climatic impact (Allen <i>et al.</i> , 2018). As currently defined in the programme, this would disadvantage a GGR process targeting	30/11/2020	At this stage we are not considering such a revision, as the contribution of different GHGs to climate change is defined, by the UNFCCC, and under Carbon Budgets, in terms of GWP <sub>100</sub>

	SLCPs. Allen <i>et al</i> show that whereas the GWP of CO <sub>2</sub> and N <sub>2</sub> O, both long lived greenhouse gases, track their cumulative emissions, the GWP of CH <sub>4</sub> (an SLCP) tracks its annual emissions. It follows that to deliver equivalent climatic impact, the conversion of GWP to CO <sub>2</sub> e for SLCPs should be based on the GWP* as defined by Allen <i>et</i> <i>al.</i> <b>Would such a revision be considered</b> ?		
	The application makes several references to the commercialisation of the project and to making a 'commercial case' to justify various aspects of it. Given that the prospects appear very limited for the production of marketable end products from any form of GGR undertaken at a climatically significant scale that would provide a basis for a viable for-profit enterprise, and that at that scale it must be recognised as a public good that is paid for from public funds, could the use of the terms 'commercial' and 'commercialisation' be clarified? This is particularly important for non-CO2 greenhouse gases where the GGR end point is likely to be benign reaction products released back into the environment and there is no possibility of a marketable end product.	30/11/2020	The expectation with regard to commercialisation is that GGRs which do not produce saleable products need to be able to remove GHGs from the atmosphere at a cost per tonne CO <sub>2</sub> equivalent to, or lower than, the long-term carbon price (which is uncertain but may rise as high as £346per tonne under certain scenarios). The expectation is not that this price point will necessarily be met by the end of Phase 2, but that a credible route to this price point can be demonstrated.
51.	What is the precise definition of a 'concentrated stream'? There are many natural and	30/11/2020	If a route to deployment in the ambient atmosphere can be demonstrated, and if a cost reduction strategy can be demonstrated

	anthropogenic sources of SLCPs (in particular CH4) that are more concentrated than they become once well-mixed in the atmosphere. Examples include CH4 escaping from active and disused mines, and increasing emissions of CH4 from melting permafrost. These CH4 emissions are climatically significant because of its high GWP. A GGR targeting atmospheric CH4 would most likely be first targeted at these higher concentrations, before deployment in the ambient atmosphere. Would such an approach disqualify an application for a CH4 GGR in Lot 2 by virtue of the initial applications focusing on these more concentrated sources where the removal technology was also capable of being deployed in the ambient atmosphere? In responding to this question, please bear in mind that for CH4 the end point is the release of benign reaction products into the environment.		that would make such deployment cost effective, then trial of removal of CH4 emissions from, for example, a leaking mine, or from permafrost, would potentially be in scope. This technology would need to be a TRL 4 at the point of application to be in scope.
52.	Can the lead organisation and project title be changed after registration if, when assembling the application for submission in February, it emerges that there are better ways of managing and naming the project?	30/11/2020	Yes. Registration is solely for the purpose of allowing us to plan for how many bids we are going to receive.
53.	Payment and Cashflow – We are already party to another SBRI funded project as subcontractor. Payment on the part of BEIS for that project to its lead and thus on to ourselves has been consistently late. This creates hardship for small business and even more so if we are looking at quarterly claims. Can we get assurances about payment terms being met.	30/11/2020	Our usual practice is to pay invoices quarterly, however if necessary for cashflow reasons, would be willing to consider monthly payments. We cannot make any payments in advance of need.
54.	With respect to the following "Please complete this for a GGR solution which removes 50,000 tCO2eq per annum from the atmosphere." - Does BEIS	30/11/2020	Demonstration of scale and carbon reduction through multiple plants is an acceptable route. There is no size expectation for an individual unit.

	envisage that carbon reduction from the plant must occur through scaling a single plant or does demonstration of scale and carbon reduction through multiple plants also comply? Biomass projects must account for carbon in transportation and therefore scale is not necessarily beneficial. Rather carbon reduction is achieved through optimising and standardising smaller scale repeatable projects and valorising the by-products and co-benefits.		
55.	What level of dissemination is required during phase 1? Are external dissemination costs eligible e.g. hire of venue / production of publicity materials?	30/11/2020	External dissemination costs are not eligible for Phase 1. BEIS will lead on running, and funding, external dissemination events and materials.
56.	If it is identified that the expertise of the partnership can be improved through training; are training costs eligible?	30/11/2020	No, training costs are not eligible.
57.	Do all Phase 2 partners need to be identified prior to submission of the Phase 1 application?	30/11/2020	Applications will be stronger the more information is provided, but changes to the project team between Phase 1 and Phase 2 can be considered on a case-by-case basis.
58.	Under the Pilot Costs tabs, questions 2) & 3) require a £/MWh to be inputted for Fuel Inputs and Electricity Requirements. If a Gas & Electric Supply Company (UK based with OFGEM licence to supply) is part of the consortium and can give a contractual obligation to supply electricity and natural gas (or other) at a discounted tariff for the lifetime of the project's consumption, could these tariffs be used? Otherwise, how should these costs be calculated?	30/11/2020	If the applicant believes that the data provided in the workbook would not be representative of their project, they are encouraged to use their own figures for carbon intensities and costs and provide justifications for doing so. In this case, these tariffs could be used as a realistic alternative, provided evidence is submitted to support this.
59.	Similarly, under the Pilot and 2030 Costs tabs, questions 2), 3) it states that "Grid electricity is assumed to be decarbonised based on latest UK Energy Projections". Then in the table beneath, it	30/11/2020	If the applicant believes that the data provided in the workbook would not be representative of their project, they are encouraged to use their own figures for carbon intensities and costs and provide justifications for doing so.

	asks for "User-input carbon intensity ( $tCO_2eq/MWh$ ) (if blank default values will be used)". If grid electricity is used and if it can be shown that the technology is to be run purely off 100% renewable sources (where using a single dedicated Gas & Electricity Supply Company to supply the power as mentioned above), would this also affect the carbon intensity value here?		
60.	Similar to question 2 above, if a dedicated Gas & Electricity Supplier were used to power the project, if they were using carbon offsets to ensure their electricity and/or gas supply goes beyond being carbon neutral and is actually carbon negative, would this affect the carbon intensity value? What evidence would be required for this to be viable in the calculations?	30/11/2020	Offsetting is not to be accounted for. Only direct removal of CO2 or other GHGs from the atmosphere, by application of the technology/process to be piloted in the project, are considered within scope.
61.	Under the Pilot and 2030 Costs tabs, questions 1), 2) & 3), what default "User-input carbon intensity (tCO <sub>2</sub> eq/MWh)" values will be used if these are left blank and how are they to calculated? Is there a prescribed methodology that we should follow when calculating these values in the event that they are not left blank?	30/11/2020	Default values can be seen in the "data" tab, and correspond to estimates of emissions intensities and costs for the technologies coming from a range of sources within BEIS. Where applications chose to use their own values, there is no prescribed methodology to follow, but evidence and justification for the cost and emissions data should be provided. Please note that emissions intensities for fuels and electricity sources should be calculated on a life-cycle basis (i.e. solar and wind do not produce zero-carbon electricity, on the basis that there are emissions associated with the production of the equipment for them).
62.	Under the 2030 Costs tab, question 8, it asks for a Discount Rate to be entered for the CapEx for commissioning and constructing the plant. Is this discount to be applied as part of the price	30/11/2020	No, this discount is not to be applied as part of the price reductions to the reflect the risk-benefit sharing IPR conditions mentioned on page 18 of the Competition Guidance notes. The discount rate referred to in the workbook is based on using a discounted cash

	reductions to the reflect the risk-benefit sharing IPR conditions mentioned on page 18 of the Competition Guidance notes?		flow analysis, used here as a measure of the cost of capital for the project.
63.	What other sections of the GGR Workbook or Application Form allow us to show a price reduction to reflect the risk-benefit sharing conditions mentioned on page 18 of the Competition Guidance notes? Or is this mainly applicable to a reduction in the price per tonne of the sequestered CO2 applicable mainly in Phase 2?	30/11/2020	This information should be provided under the "Project Financing" section of the application form. Please note that the <i>price reduction</i> referred to in the Guidance Documentation <i>does not</i> refer to reducing the cost of Greenhouse Gas Removal. It refers to reducing the price of delivery of the Project (i.e. the price that BEIS pays to you) relative to the project price were BEIS to seek absolute ownership of the resulting IP. The sharing of risks and benefits is key to the pre-commercial procurement/SBRI approach and at Phase 2 applicants will be expected to offer a price reduction compared to the price applicable in the case of exclusive development. Exclusive development means that the purchaser reserves all the results and benefits of the development (including Intellectual Property Rights) exclusively for its own use.
64.	In the finance form, under the section, Contact and Bidder Details and Proposal Summary, the question that relates to "How is the business currently funded? (Choose all that apply)". For a company that is trading in other areas unrelated to DAC (e.g. consultancy and local government low carbon heating projects), which the correct selection? Originally the company may have been started with money from the founders, but is now funded through ordinary trading activity?	30/11/2020	The applicant should select all sources that apply to them; if the company was originally funded through the founders, then they should select this option.
65.	On page 18 you state "The sharing of risks and benefits is an important aspect to the SBRI approach. Projects receive financial support and retain any intellectual property generated, with	30/11/2020	<ul> <li>In section 27 of the Terms and Conditions, it states:</li> <li>"1) Subject to Condition 27(4), all Background Intellectual Property used or supplied under this Contract in connection with the Services</li> </ul>

	certain rights of use retained by BEIS." Could you please clarify what rights are retained by BEIS.		<ul> <li>shall remain the property of the Party introducing the same and nothing contained in this Contract or any licence agreement pertaining or pursuant to the Contractor's performance of the Services shall affect the rights of either Party in its Background Intellectual Property.</li> <li>(2) Subject to Conditions 27(3) and 28(5), any Arising Intellectual Property shall belong to the Contractor.</li> <li>(3) The Contractor hereby grants to the Authority a worldwide, irrevocable, royalty-free, non-exclusive licence at no cost to the Authority, together with the right to grant sub-licences, to use or publish any Arising Intellectual Property. Data, results, outcomes or conclusions which are created in performing the Services, for such purposes as the Authority in its absolute discretion deem fit.</li> <li>(4) The Contractor hereby grants to the Authority a worldwide, irrevocable, royalty-free, non-exclusive licence at no cost to the Authority, to use any Background Intellectual Property used in the performance of the Services, that is essential to the functioning and use of the Arising Intellectual Property.</li> <li>(5) The Contractor shall procure for the Authority any worldwide, irrevocable, royalty-free licence, at no cost to the Authority, form any third party, to use any Intellectual Property Rights that are essential to the functioning and use of the Arising Intellectual Property Rights that are essential to the functioning and use of the Arising Intellectual Property Rights that are essential to the functioning and use of the Arising Intellectual Property Rights that are essential to the functioning and use of the Arising Intellectual Property Rights that are essential to the functioning and use of the Arising Intellectual Property Rights that are essential to the functioning and use of the Arising Intellectual Property.</li> </ul>
			<ul> <li>(6) Under clauses 27(3), 27(4) and 27(5) the Authority shall only grant sub-licences to third parties if, after three years from the end date of this Contract, the Arising Intellectual Property has not been commercially exploited by the Contractor, or the Contractor has established a monopoly position."</li> </ul>
66.	On page 16 you state "BEIS requires Lot 1 Projects to show at application that they are at least at TRL Level 4, and can, by the end of Phase 2 of the Project, show that TRL level 6 or	30/11/2020	This project is aimed at GGR technologies between TRL 4 and TRL 7 to help them achieve commercialisation. Higher tier technologies are not eligible. New components of extant higher tier technologies are eligible however if their specific TRL is between 4 and 7 – for

	higher has been achieved, and Lot 2 Projects must be able to show at application that they are at TRL Level 6, and can, by the end of Phase 2 of the Project, show that TRL level 7 or higher has been achieved." To what extent does carbon capture experience at higher concentration levels than ~400 ppm count toward the TRL. If the organisations involved in our project have prototype (TRL > 6) and even large commercial facilities (TRL > 8) in operation using very similar technology but capturing at higher concentration levels of CO2, can we confirm this experience is applicable to include when motivating a starting TRL of 6 or above?		example a more efficient version of the condenser in a DAC plant that is not yet close to commercialisation but has been shown to work in principle. Technologies shown to work at super-atmospheric concentrations of greenhouse gases but have not yet been shown to work at atmospheric concentrations would be eligible for the competition if they can be shown to be TRL 4 (Laboratory Testing/Validation of Component(s)/Process(es))
67.	On page 18 you state "Applicants will need to demonstrate where cost savings are being provided compared to exclusive development contracts.4 These cost savings form part of the eligibility conditions for the Competition, i.e. projects that do not offer justified cost savings will not be eligible for funding. Pg21: The sharing of risks and benefits is key to the pre-commercial procurement/SBRI approach and at Phase 2 applicants will be expected to offer a price reduction compared to the price applicable	30/11/2020	These elements should apply to all phases.

in the case of exclusive development" Pg 18 states that cost savings have to be demonstrated compared to an exclusive development contract (without referring to competition phase). While Page 22 refers to cost savings compared to an exclusive development contract on Phase 2 of the competition. Could BEIS please confirm whether these element of cost savings refer to the Phase 2 application only?	
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68.	On page 23 you state "If within three years of the close of their Project applicants have not commercially exploited intellectual property generated from the work, then in line with the standard terms and conditions, BEIS may take ownership of such intellectual property." In the case of a longer project it may be likely that the bidder does not commercially exploit IP generated from the work until significantly longer than 3 years from the close of the demonstrator project. Is this condition or timing flexible in our case?	30/11/2020	In practice BEIS only invokes this clause in extreme circumstances, e.g. where the successful bidder had completed project but taken no steps to exploit the IP. In the circumstance where 3 years was insufficient time to exploit the IP, but the successful bidder could explain to BEIS that they were seeking to do so but it was taking longer than 3 years, and there was an exploitation plan in place BEIS would likely not use the power.
69.	On page 11 you state "They should explain their proposed GGR approach, indicate the applicable Lot, and outline their proposed project which would be fully specified in Phase 1 and implemented, if chosen, in Phase 2." Can we apply for Lot 2 (TRL6) but if BEIS deems that in their opinion the project does not qualify for Lot 2 on the basis on of technology readiness level, could our application be considered for Lot 1? If this is possible can we include wording to request this in our Phase 1 application.	30/11/2020	Bids will only be assessed against the Lot they bid into. If you are unsure at what TRL your approach is currently at, you should seek independent advice.
70.	On page 17 you state "Technologies which produce synthetic fuels are not allowable in Lot 2 though these approaches could be used to prove a GGR technology in Lot 1 so long as the applicant can demonstrate that the same approach can be used to remove dilute GHGs from the natural environment permanently." We have considered looking at some CO2 utilisation techniques that would lock in and permanently store CO2 within materials such as construction materials. Is the GGR team interested in CO2 usages/applications in this competition? Or should we only focus on the the removal of CO2 rather than usage.	30/11/2020	Any process which permanently removes CO <sub>2</sub> from the atmosphere is eligible for Lot 2. Therefore production of construction materials are in scope.

71.	On page 34 you state "Any organisation that wishes to publicise its project, at any stage, must contact the Competition Project Manager or their Project Monitoring Officer at BEIS and obtain written permission before doing so." In the event our application is successful, can the coordinating organisation publicize its participation in the project to an extent without seeking permission each time, or perhaps agree a set of wording with GGR.?	30/11/2020	Wording will need to be agreed with the BEIS Communications Team. However once that wording is agreed it may be used for purposes that BEIS have agreed to. In the case of wording agreed for marketing, for example, the bidder may freely use that wording in marketing materials but would need to agree with BEIS comms wording for use in press statements.
72.	On page 18 you state "The activities for any Design study or pilot project procured in this Competition must be conducted largely in the UK (and the majority, over 50%, of the eligible project costs must be incurred in the UK)." Where the primary responsibility for the work sits with a uk based entity, and an element of the work is performed overseas by an affiliate entity (but invoiced by a UK based entity), would this overseas work invoiced in the uk count towards the 'incurred in the UK criteria'?	30/11/2020	No.
73.	On page 9 you state "Pg9: Lot 1: "Early stage". Up to £6m total funding in Phase 1Lot 2: "Mid-stage". Up to £3m total funding in Phase 1. Pg:21: A maximum of £7m will be available for Phase 1 Design studies " Page 9 states that up to £9m would be available for phase 1 (£6m for lot 1 and £3m for lot 2), while Page 21 says £7m will be available for phase 1. Could you please clarify whether its £7m or £9m available for phase 1?	30/11/2020	£7 million overall is available in phase 1. Page 9 states that <i>up to</i> £6m is available for Lot 1 and <u>up to</u> £3m for Lot 2. Flexibility in the totals allocated to each Lot enables us to ensure that the full £7m is allocated.

74.	On page 13 you state "A consortium agreement is a legal document between the project participants. It must at the very least contain: the duration of the agreement; a description of the governance structure and the roles and responsibilities within it; distribution and allocation of project resources; financial arrangements; arrangements for adding parties to the consortium (which must include getting the agreement of the GGR team in BEIS); the conditions under which a party may be removed from the consortium (which must include receiving the agreement of the GGR team in BEIS); a GDPR compliant data management process; agreements on handling intellectual properties; terms for termination of the consortium; and a dispute resolution process." Will BEIS/GGR be publishing a suitable template for the consortium agreement?	30/11/2020	No, BEIS does not have a template for a consortium agreement. This is to be agreed between consortium partners.
75.	In the summary tab of the finance form you have a section labelled "Total Funding Claimed & Project team contribution (in cash and in kind)". Does the Project team contribution relate to The project's team contribution towards Eligible costs or the Project's team's contribution to cover ineligible costs?	30/11/2020	Having taken commercial advice, Project team contributions should not be made to any eligible costs, which should be fully funded by BEIS. Eligible Project Costs should therefore not exceed £250k. Ineligible costs – where not contrary to the T&Cs (e.g. spending on IPR protection, which is an ineligible cost but may be necessary within your project) – can be covered by your organisation.
76.	In the Labour & Overhead costs tab and others you have sections that say "Additional Labour Costs not being sought in this bid, Additional Materials Costs not being sought in this bid" etc. Do the 'Costs not being sought in this bid' relate to the Project Team's contribution towards Eligible costs or the Project's team's contribution to cover ineligible costs?	30/11/2020	Having taken commercial advice, Project team contributions should not be made to any eligible costs, which should be fully funded by BEIS. Eligible Project Costs should therefore not exceed £250k. Ineligible costs – where not contrary to the T&Cs (e.g. spending on IPR protection, which is an ineligible cost but may be

			necessary within your project) – can be covered by your organisation.
77.	In the GGR workbook under "fuel inputs" heat or steam doesn't seem to be an option for fuel source. Would it be categorised as 'Other'?	30/11/2020	If the steam is raised on site specifically for this process, then the fuel used to generate this steam should be used as the input. If the steam is a waste heat source of a co-located plant, then "Other" should be used, although the applicant should then describe whether this waste steam will be available for future deployment or is site specific
78.	Could I confirm whether HE organisations are eligible for <u>this call</u> , whether as Lead or Co? I can see no terms specifically excluding them.	01/12/2020	Yes, HE organisations are eligible
79.	To what extent can activities related to permanent CO2 sequestration of be funded through the programme? In particular, can investments in CO2 transport infrastructure and in interfaces with such infrastructure (including compression and conditioning of the CO2) be supported? Furthermore, can the development of geological CO2 storage sites and access to such sites be supported? The Guidance Notes do not mention geologically stored CO2 as an accepted end point of the project boundary, but emphasize "end-to-end solutions" in general.	01/12/2020	CCUS activities are not eligible for this call.

80.	<ul> <li>There is some unclarity related to the question to what extent the funding has to be spent in the UK.</li> <li>a. The Guidance Notes mention, that the "activities for any Design study or pilot project procured in this Competition must be conducted largely in the UK". Does "procure" refer to the procurement of the entire Design Study through BEIS or does it refer to a situation where the lead project organisation procures certain tasks within its project? The latter interpretation would allow a foreign lead project organisation to conduct its own contributions to the project outside the UK (possibly &gt;50% of the total project cost).</li> <li>b. Will the rule of spending &gt;50% of the funding within the UK apply to the project implementation (Phase 2) as well?</li> </ul>	01/12/2020	<ul> <li>a) "Procure" refers to the procurement of the entire Design Study by BEIS</li> <li>b) Yes</li> </ul>
81.	I'm in the process of completing the attached GDPR declaration. On the second tab, the instructions say 'For every statement on the left, please select which status applies to your organisation by using the drop-down options in the 'status' column' but there doesn't seem to be drop down options available. Would you like me to just enter 'Yes' or 'No' in these sections accordingly?	01/12/2020	Thank you for pointing this out. You can write Yes or No in the relevant sections, or you can download the declaration again – we have edited it to fix the broken drop-down options.

82.	The BEIS DPF31 - BEIS Standard Terms and Conditions of Contract for Services include a number of clauses in section 27 (Intellectual Property Rights) and section 28 (Exploitation of intellectual Property Rights) which are at odds with the standard business proposition of licensing technologies and IP. The terms allow the Authority to publish arising IP, data, results and outcomes (as the Authority sees fit) which is in contrast to the principle of confidential information (as is clause 43) and increases the likelihood of others filing blocking patents. The terms then require the contractor to procure licences for any IP required from any third party at no cost to the Authority (which could be a large expense if blocking patents have been filed). The contract also allows the Authority to grant sub- licences if the arising IP hasn't been exploited within 3 years however projects of this magnitude can take many years to develop due to both commercial and planning constraints etc which are outside of the contractors control. This seems an unduly short period of time for the development of new technologies. Whilst the contractor acknowledges the Authority's rights to IP, the contract to ensure that confidential information remains confidential and that IP is sufficiently protected. Please can the Authority advise the process for discussion and agreement of these contractual amendments which are fundamental to the contractors application.	07/12/2020	In the interests of transparency and following a fair process, we cannot enter into negotiations with individual bidders / suppliers to suit their particular needs without potentially discriminating against another bidder. The terms of the competition were fixed at the start of the competition. The purpose is that BEIS create a level playing field for the entire market to bid into, rather than changing the terms upon the request of individual bidders. In practice BEIS only invokes the right to grant sub-licences of the arising IP in extreme circumstances, e.g. where the successful bidder had completed project but taken no steps to exploit the IP. In the circumstance where 3 years was insufficient time to exploit the IP, but the successful bidder could explain to BEIS that they were seeking to do so but it was taking longer than 3 years, and there was an exploitation plan in place BEIS would likely not use the power. In terms confidential information, a separate confidentiality agreement can be entered into if necessary. However, we envisage that such an agreement would not be needed and that BEIS and the successful bidder could agree which commercially sensitive information were not to be published, while balancing the need for transparency in the use of public money, and the desire for the lessons learned from individual projects within the innovation competition to stimulate the development of Greenhouse Gas Removal technologies more widely.

83.		03/12/2020	For an end-to-end project the start point of the process is (a) the input of sustainable biomass' into a process. Costs associated with innovation relating to the planting, growth, harvesting, transport and/or primary preparation of
	In a BECCS application, would eligible project development costs be applicable for only the CCS component of the project or would funding cover the whole project – provided the bioenergy component meets the technical spec as detailed in the ITT?		biomass are <i>not</i> within scope. Innovation relating to secondary processing of an established biomass feedstock (e.g. wood pellets already used in bioenergy) which is essential for the process is within scope, so long as it can be demonstrated that this secondary processing is <i>novel</i> and is an essential step, and the resultant material cannot already be purchased on the market.
			In Phase 2, the cost of purchasing biomass to be used to operate, test and refine the operation of any innovative pilot plant constructed would be considered an <i>eligible</i> cost. However you should not that it is not allowable for an SBRI project to run a profit, therefore any monies secured by sale of energy, fuels or other products resulting from the process would need to be netted off against input costs.
84.	The official template of finance form is for phase 1 and the Application Form is for phase 1 only. However, in the Guidance Notes, page 32, it says 'Financial information should include costs for both phases of the project,'. So, for the February submission, do we need to use the template and prepare a detailed finance form also for phase 2? If the cost for phase 2 is required, is some estimation of overall budget for phase 2 sufficient?	01/02/2021	An estimation will be sufficient at this stage.

85.	We are preparing a consortium bid and will need to complete a Consortium Agreement. Do we have to get this ready by February submission or is it fine to finalise one before the project starts if our application is funded?	01/02/2021	We would be more reassured that your project team will be able to deliver if a consortium agreement is already in place. If one is not in place, then please provide assurance with evidence that one will be in place when the contract starts. Please provide additional files as annexes when you upload your application. The sorts of evidence we expect to see would be letters between consortium partners and draft versions of the agreement (with sensitive information such as comments or tracked changes redacted if necessary).
86.	In the GGR Workbook/2030 costs/Capex section, a discount rate is required. Is 4% a reasonable estimation? or what is the sensible range for a discount rate?	01/02/2021	The discount rate will depend on your own valuation of promised money in future vs money today. If you suspect inflation will be high, then your discount rate will be high. There isn't really a correct answer to this question, I'm afraid and will depend on your company's tolerance for risk.
87.	In the GGR workbook tabs Pilot & 2030 – We are instructed to input biomass but there is no biomass in dropdown fuel list, do I use Other, then biomass in line above?	01/02/2021	BECCS and Biochar is included in the drop-down. Does your project use biomass, but not BECCS or biochar? In which case, yes, use other.
88.	On page 30, under Criterion 6 – Project Financing, the guidance states: "This criterion will not be used to assess the overall cost of capture of the process, & is focussed solely on the cost of delivering the Phase 1 project." However on page 32, the Financial Information paragraph states: "Financial information should include costs for both phases of the project, detailing labour (including manpower rates), material and capital equipment costs, and any travel and subsistence requirements. Applicants are required to complete a detailed financial summary template (the Finance Form) as part of the application process.	01/02/2021	Please provide costs for phase 1 only. It would be unreasonable to ask you for costs for phase 2 as you haven't designed it yet. In the 2030 tab of the GGR workbook, however please provide the ballpark costs and revenues you expect to be working with. These do not have to be detailed costs, as are required in the finance form.
89.	The application form asks for font size 10, but I can't change it.	01/02/2021	Additionally, the application form asks you to input text in font size 10 and ariel, but defaults to 12 and will not let you change it. I would recommend

			writing the requisite number of pages in font size 10 in a separate word document and then copying and pasting that into the application form.
90.	The 5 declarations are to be signed "duly authorized on behalf of the tenderer". Does this mean that only the project leader is to sign these or are all project or consortium partners expected to have these signed?	01/02/2021	Yes, the project leader needs to sign. They are signing on behalf of the consortium though so are in effect vouching for the sub-contractors.
91.	Do all consortium members need to fill out the declarations?	01/02/2021	The declarations only need to be filled out by the lead member of the consortium. You need to be confident that your sub- contractors conform to the terms in the declarations however as you are filling it out on behalf of them.
92.	How long does our project plan need to be?	01/02/2021	There are no limits, upper or lower, to the project plan.
93.	In the updated guidance notes, it says that "The application form should include a list of any supporting documents.". However, to my knowledge, there isn't a dedicated space to list out the supporting documents / annexes in the application form. To clarity, where should that list go?	01/02/2021	Please include a list of supporting documents separately.
94.	Can we answer "no" to questions 5.2 and 5.3 in declaration 4?	01/02/2021	Answering 'no' to Q's 5.2 and 5.3 will not result in an automatic disqualification of the bid, but will be taken into account when assessing the financial viability of the organisation/bid.
95.	Can we remove any of the points prior to signing the declaration 2.	01/02/2021	No.