

The Unite the union response to the Department for Energy Security and Net Zero Consultation: - GGRs and Power BECCS business models: amending revenue support regulations relating to directions to a counterparty, publication of information, counterparty's ability to carry out its functions, and eligibility.



1. Introduction

- 1.1. This submission is made by Unite, the UK's largest trade union with over one million members across all sectors of the economy, including manufacturing, financial services, transport, food, agriculture, construction, energy, utilities, information technology, service industries, health, local government and the not-for-profit sector. Unite also organises in the community, enabling those who are not in employment to be part of our union.
- 1.2. Of particular interest to this inquiry Unite represents almost 40,000 Energy and Utilities workers generating distributing and managing the supply of electricity and extract, treat, distribute natural gas supplies and providing the nation with fresh water and treat waste water. Unite also represents over a quarter of a million members in the transport industry, including shipping and aviation. Together these two industries are the largest sources of greenhouse gasses who are relying on the availability of carbon sinks to achieve net zero by 2050 and further reducing the concentration of greenhouse (GHG) beyond 2050. Each of these areas and many more sectors of the economy, where Unite has members are also large-scale users of energy and emitters of greenhouse gasses.
- 1.3. Unite believes that the withdrawal of government funding which caused the cancellation of the original proposal for carbon capture¹ at Drax was a catastrophic development as it prevented the capture and storage of the around 2 million tonnes of CO₂ for every year it would have been in operation from the power station alone. The decision and the government decision to close every coal power station also caused Drax and many other stations to convert where technically viable to biomass. The combustion of biomass causes the release of more CO₂ than would have been the case if the coal had been burnt². The justification, however, has been that burning felled sick and dead trees and the waste from the lumber industry is far better than allowing the trees to rot where they will release methane³. The problem is, however, that there isn't enough land in the UK to provide the necessary number of trees, so the biomass pellets need to be imported creating an additional source of carbon. Therefore, Unite would argue that the appearance of a CCS pipeline cannot appear soon enough, not just to collect the CO₂ from energy generation but from a herringbone arrangement of interconnecting pipes that would allow other manufacturing industries to benefit.

¹ [The White Rose Project](#) was a project proposed in 2012 would have been the first coal-fired plant to demonstrate the use of oxy-fuel technology for low carbon electricity generation.

² A [kilo or any weight of coal burnt releases around 2.07 times that weight as CO₂](#) yet burning wood pellets causes the release of stored carbon. Wood is heterogeneous and exact amount of carbon in 1 Kg of dry wood will vary depending on the species of wood, age of wood etc. It is reported that 1 Kg of wood contains about 450 to 500 gm of Carbon. [This means 1 Kg of wood is holding about 1.65 to 1.80 Kg of CO₂](#). [This is how wood or forest act as carbon sink](#). But in addition to this carbon there is the indirect impacts of burning wood pellets in the UK from drying the wood, processing it into pellets, shipping the pellets over from the United States, Canada etc. and keeping it in ideal conditions to prevent it getting wet and rotting. Therefore, various figures are used to take this into account. Additionally, if the pellets are fired to soon after felling the trees natural resins make it necessary to co-fire old PowerStation boilers.

³ Methane is a greenhouse gas over 80 times as powerful as CO₂ over a 20-year policy framework.

2. Consultation Questions

1. Do you agree with the proposal that Regulations 5, 6 and 7 of the Carbon Capture Revenue Support (Directions, Eligibility and Counterparty) Regulations 2024 should apply, without substantive amendment, for the purposes of the proposed GGR and Power BECCS business models?
 - 2.1. Unite believes this would appear to be the swiftest and simplest option to bring about the introduction and adoption of Carbon Capture Revenue Support. Unite believe that this process needs close supervision to ensure that it does not cause knock on exploitative costs to the UK industry sectors, given the potential monopoly this scheme will have over rival but complimentary options for carbon removals.
 - 2.2. It is also important to know that the carbon once captured will be stored in a manner that prevents eventual escape. At the ORCA project in Iceland this was achieved through mineralisation. Fortunately, CO₂ when mixed with Basalt deposits, reacts to create Limestone, a material that has been utilised in stone construction for decades. The trick is to powder the basalt to maximise the surface area exposed to the CO₂. While injection of the CO₂ into disused oil and gas wells will work the problem is that it will also liberate additional volumes of oil and gas and hold the .
2. Do you agree that provisions set out in Regulations 8, contract publication, of the Carbon Capture Revenue Support (Directions, Eligibility and Counterparty) Regulations 2024 can and should apply, with minor amendments, for the purpose of the proposed GGR and Power BECCS business models?
 - 2.3. Unite agrees that amendments to the legislation may only serve to delay the application of the programme for Greenhouse Gas Removals (GGR) and Biomass, Energy generation with Carbon Capture and Storage (BECCS). Unite believes that it is important for the country at large that there is a sound financial footing for the operation of GGR through the use of BECCS but that there is a requirement for a body with teeth to ensure that Drax do not hyper inflate the cost of a tonne of carbon removed. As the aviation and shipping sectors will be major customers for GGR certs, without which they may not be able to function, that enough credits are produced to correctly offset the volume of carbon (and other greenhouse gasses) thus make things like net zero long distance aviation a reality.
 - 2.4. As the development of a carbon trading market could quickly dissolve into a market where only the industries with the deepest pockets have access. Unite strongly believes in a minimal amount of interference to prevent the development of this key industrial asset, dissolve into something akin to that seen in the water and energy distribution networks, of the past. Unite therefore believes in the need for a regulator with noticeable and potentially crippling teeth to act on the behalf of the consumer for the betterment of the UK man in the street.
3. Do you agree that provisions set out in Regulations 9 of the Carbon Capture Revenue Support (Directions, Eligibility and Counterparty) Regulations 2024 can and should apply, for the purpose of the GGR and Power BECCS business models with minor amendments and do you agree with the proposed information not required for GGR contracts (Table 2) and additional GGR and Power BECCS project information (Table 3) to be included as part of the key project information?

- 2.5. Unite feels that regardless of the provisions set out in Regulation 9, make it a requirement for the inspection and of a register of trades and for the credits to be available and for the counterparty to provide access to the register on-line. It also allows those who apply in writing reasonable access to the register for the purpose of audits by way of example. Unite agrees that it is critical to ensure that the books balance and that there are provisions in place that are there should anyone makes reasonable requests to check.
4. Is there any information on GGR and Power BECCS contracts not listed in Regulation 9 and the Schedule of the Carbon Capture Revenue Support (Directions, Eligibility and Counterparty) Regulations 2024 that you think should or should not be published in a contract register?
- 2.6. Unite believes that all legal arrangements fall down if and when the word “reasonable” is utilised. What one party believe is reasonable another would not, potentially leading to costly legal battles. Unite would therefore argue that some limited guidance is needed to at give any legal mind guidance to resolve any possible argument that limits transparency.
5. Do you agree that provisions set out in regulation 10 of the Carbon Capture Revenue Support (Directions, Eligibility and Counterparty) Regulations 2024 can apply, without substantive amendment, for the purposes of the proposed GGR and Power BECCS business models?
- 2.7. Regulation 10 requires the carbon capture counterparty to notify the Secretary of state if they cannot perform their tasks for which they are assigned. As workforces across the economy and further afield may be adversely impacted by any inability to perform their task, Unite would argue that that the unions and consumers are equally notified in some way that is immediate allowing vital time to seek alternative arrangements, where possible.
6. Do you agree with the proposal to amend Regulation 3 of the Carbon Capture Revenue Support (Directions, Eligibility and Counterparty) Regulations 2024, with the inclusion of “is in the atmosphere, or has dissolved in sea water”, with reference to an eligible “carbon capture entity” relating to GGR contract?
- 2.8. As carbon removals from that atmosphere and from seawater are technically proven technologies it would be prudent to amend Regulation 3 to incorporate any and all proven avenues.
- 2.9. While not fully commercially available the development of open cycle carbon dioxide batteries⁴ holds great potential not only with respect to carbon storage but also with respect to grid balancing and the production of bicarbonate of soda. Bicarbonate of soda is a compound with a wide variety of applications from animal feed to use as an industrial cleaner in addition to it being a staple kitchen cupboard staple. The problem is that the current methods of Bicarbonate production create many times the volume of greenhouse gas. As a battery, the technology also provides the opportunity to distribute and store the production of solar or wind over a longer duration than their immediate consumption, putting under utilised power to good use. A waste product of this technology is heat which of course

⁴ [More details can be found by using this link.](#)

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could be used for communal heating projects if built at enough scale or utilised in a Direct air capture system to source at least some of the CO₂ from the atmosphere.

- 2.10. As has been highlighted, this technology could also benefit from the inclusion as amendments to Regulation 3 as would other technological advancements in the future, so Unite would recommend that this regulation is periodically assessed and amended where appropriate as new things come along.
7. Do you agree with the proposal to take a technology neutral approach, and not place restrictions within Regulations on the types of technologies that may be used by a carbon capture entity to capture carbon dioxide?
- 2.11. Unite agrees that a technology neutral approach would make things simple, but also suggests that some new start up developments may need an additional helping hand to bring on stream new enhancements to capacity. Unite therefore recommends that the wording of the technological wording be as broad as possible but also subject to review.
8. Do you agree with the approach to not limit within Regulations the class of person that may be eligible for a revenue support contract?
- 2.12. Unite does not agree that the class of a person who may make an eligible application for financial assistance via a revenue support contract should be as open as has been stated. Unite would not wish to see any of the disgraced executives of the current water industry to be eligible for example. These individuals have been able to live large on the long-term costs to the tax payer who may be forced to pick up the pieces and thus increase public debt.
9. Do you have any other comments on the proposals for the GGR eligibility Regulations? Please note, we are aware that we have not addressed detailed GGR standards as this policy is still being developed.
- 2.13. Unite only wishes to ensure that no disqualified company directors are in anyway involved with the company management structure involved in operating a GGR project, through marriage partners or otherwise. It is critical that there is honesty and transparency in the implementation of a GGR facility to ensure carbon credits are fully accounted for.
10. Considering the nascent nature of the GGR industry, we propose to keep the eligibility criteria for GGR purposes minimal in the Regulations to keep open which technologies and projects we can support in the future. Do you agree with this approach?
- 2.14. Unite does support that idea to a degree, however, it is also important to ensure that any new GGR technology must be shown to work as advertised not just on paper before it becomes eligible.
11. Do you have any other comments on the proposals for the GGR eligibility Regulations?
- 2.15. Unite does not have anything further to add.
12. Do you agree with our assessment that Regulations 3 and 4 of the Carbon Capture Revenue Support (Directions, Eligibility and Counterparty) Regulations 2024 enable Power BECCS projects to be eligible for carbon capture revenue support?

2.16. Unite agrees with the assessment.

13. Do you agree with the approach to keep the eligibility criteria for Power BECCS as broad as possible within the Regulations?

2.17. Again, as stated earlier, Unite is minded to support the proposal to a degree, if it is also shown that any new power generation with CCS technology must be shown to work. Clearly while Unite supports the idea of clean gas and coal⁵, these are not carbon negative technologies providing a carbon sink. Waste to energy technology can cause the release of a range of greenhouse gasses including methane from the rotting waste materials.

2.18. Any combustion method of heat generation in air, creates Nitrous Oxides (NOx) which are not only harmful to the climate but also human health if inhaled. Di-Nitrous Oxide (N₂O)⁶ is a powerful greenhouse gas, impacting global warming by 300 times that of an equivalent weight of CO₂⁷. Therefore, Unite would hope that any captured carbon credits issued take account of this in the calculation of the percentage that is a true reduction of total GHG's rather than just basing the number of credits on the amount of carbon captured alone.

14. Do you have any other comments on the proposals for the Power BECCS eligibility Regulations? Please note, we are aware that we have not addressed detailed GGR standards as this policy is still being developed.

2.19. BECCS holds the potential to both help reduce our reliance on imported electricity and could help turn the energy sector from a net source of GHG's into a carbon sink not just for the energy sector but for industries that find it hard to decarbonise, if the correct long term storage methodology can be found and the whole process is as transparent as is possible to instil confidence into the process that there is not sleight of hand or double counting going on. The major issue is that the process is currently reliant on wood pellets imported from the United States and Canada rather than home grown.

2.20. Clearly chopping down trees to burn is not something that is without controversy especially as they are seen as the lungs of mother nature, providing life with the oxygen, and some campaigners object to the process. It needs to be remembered that trees get old and die and young trees absorb more CO₂ than older more mature ones. The process of forestry management is one which could eventually reduce the extreme global temperatures that have led to so many forest fires around the world which have cost the lives of not just trees.

2.21. Unite hopes that proper forestry management in the UK could reduce the amount of miles these wood pellets need to travel by more intensively managing unproductive land around the UK and using that exclusively for BECCS technologies. The problem is that to feed Drax alone huge areas of land are required which currently attract carbon credits for the amount of carbon they absorb.⁸ The same could also be said of other crops which can capture carbon

⁵ Coal or gas fired generation with CCS.

⁶ N₂O is also known as laughing gas and was used as a pain reliever especially in dentistry.

⁷ [A list of sources and sinks for NOx can be found by following this link.](#)

⁸ According to the Massachusetts based Partnership for Policy Integrity, the scale of wood pellets consumed by Drax back in 2019 represents the amount of wood produced by clear cutting a forested area 18 miles on each side each year. Drax's 2023 annual report clearly states on page 74 that whole trees and not wood waste is used to produce pellets in the United States and Canada.

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from the atmosphere in a manner that is faster than trees, you should not award 2 credits for only a tonne of carbon captured.

- 2.22. What needs to be avoided is any element of double accounting for the amount of carbon captured or offset by using any form of biomass as fuel. If forested areas are given carbon credits for the areas planted, the energy sector cannot then claim additional offsets when that carbon is released to produce "Net Zero" energy. If there is to be proper accountability, either the carbon credits are not given for planted forests or for the volumes offset by burning wood rather than coal or other fuels.
- 2.23. As an alternative to wood which will take decades to mature to a size capable of commercial harvesting for pellet production a material like bamboo, comes to mind as a possible alternative. Varieties of bamboo can grow between 20 and 250 cm in just 6 weeks in the UK and according to the Guinness World Records one variety can grow 3.8 cm in an hour!! Therefore, when it comes to a method of capturing carbon and turning it into electricity, bamboo plantations may prove to be far better than planting huge areas of the UK with trees for combustion at Drax and other former coal power stations.

3. Conclusion

- 3.1. Unite believes that CCS technology is something that the last government should have seen through to its conclusion over a decade ago and with the move away from coal there should have been a greater level of support for the roll out of BECCS. Sadly, like the economy, the energy sector and our efforts to tackle climate change were being overseen by a government that thought that business knows best even if shown that business is primarily out to provide a return for shareholders rather than investing into technologies that help keep the planet from overheating or the poor from freezing to death.
- 3.2. Unite believes that each tonne of carbon should be properly accounted for and not double counted. If the carbon credit is awarded for land use management that same tree grown on that land should not be turned into pellets and attract a second carbon credit or rather avoid the payment for a second carbon credit when the captured carbon is released.
- 3.3. As stated, Unite believes there are other materials that can be planted at a far greater density to create a biomass alternative that requires less water and less nutrients than trees and a material that could be harvested with far less controversy, greatly enhancing our national energy security. Unite therefore recommends that the government explores the potential which could turn a sector beset with lobbyist spin and protests into one which the environment community can get behind.

Simon Coop
National Officer for Energy & Utilities
Unite the Union
Transport House
128 Theobalds Road
Holborn
London WC1X 8TN

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For further information please contact Colin Potter, Research Officer in the Unite the Union.