

Greenhouse gas removals

A RESPONSE TO BEIS CALL FOR EVIDENCE

About Confor

Confor (www.confor.org.uk) is the not-for-profit organisation for the UK's sustainable forestry and wood-using businesses. It has 1,500 member companies, representing the whole forestry and wood supply chain.

About this consultation

BEIS have called for evidence on the costs and deployment potential of GGR methods, to inform decisions about where to target investment. Some questions aimed at GGR methods in development have been omitted as mature and widely-practiced GGR methods such as afforestation and wood in construction are considered out of scope.

Questions

1. Do you give permission for your evidence to be shared with third party contractors for the purpose of analysis?

Yes

2. Do you agree that some GGRs will be required to achieve the UK's net zero target by 2050? What are your views on the suitability and mix of different technologies in supporting the delivery of net zero?

Yes. The priority for decarbonisation should be the reduction of GHG emissions, for example by displacing high-emissions materials such as concrete and plastic with low-emissions alternatives such as wood. However, maximising GHG removals can also buy valuable time in tackling climate change. This should start with the mature technology which is available now to capture and store carbon quickly: growing trees and using timber. The UK has large tracts of historically-deforested land with one of the best temperate climates for growing trees.

Trees can lock up carbon at a tremendous rate. For example, improved strains of Sitka spruce on suitable sites can remove around 36tCO₂e per hectare per year¹.

When harvested, all parts of the tree, whether sawlog or chip, can be used in both construction and in home insulation, as carcassing, cross-laminated timber, panel board, wood fibre insulation, or in products such as double-glazed window units.

¹ Based on YC40 spruce; 1m³ wood is equivalent to 0.9tCO₂e.

Wood made into essential products with a shorter life, such as pallets or a wide range of packaging products can also be recycled into panel board or insulation, greatly extending the life of the product.

This rapid carbon removal and medium-term carbon storage means GHG removed through fast-growing trees can be kept out of the atmosphere to 2050 and beyond, buying vital time to develop decarbonisation and other GHG technologies including BECCS.

BECCS offers the exciting possibility that when wood is burned for energy at end-of-life, its carbon is stored permanently. However, it is important to note that if virgin wood is used for BECCS, this misses vital opportunities to deliver decarbonisation by substituting wood for materials with higher embodied carbon, as well as opportunities for economic growth, job creation, and quality of life improvement.

Growing trees for GHG removal does not have to come at a cost for biodiversity habitat or food production. On agricultural land, fast-growing trees such as conifer or eucalypts can provide shelter for cattle and chickens in efficient agroforestry systems. In arable landscapes they can provide buffers against spray drift, enhance water quality and prevent soil erosion, without taking land out of production. Trees of all kinds support a wide variety of invertebrates, fungi, bryophytes, lichens birds, and forest margins and harvested sites create rich areas for wildflowers and small mammals, and associated raptors. Rather than regarding each hectare of land as delivering for one thing, smart, integrated land use policies can deliver food production, biodiversity habitat, wood production and carbon capture in the same place. This is why it is important for BEIS to be involved in the design of Environmental Land Management.

3. In relation to the GGRs listed in Figure 1 (except afforestation, habitat restoration and wood in construction), is there new evidence that you can submit.

No answer.

4. Is there any evidence you would like to submit in relation to other nascent GGR methods not outlined in Figure 1?

No answer.

5. What do you consider to be the main barriers to the development and deployment of GGRs?

The main barrier to widespread adoption of forestry and timber for GGR is a 'siloesd' policy environment which prioritises single-issue solutions and therefore sees binary trade-offs between them.

For example, 'nature based solutions' (with no production) are seen as an alternative to 'technological solutions', rather than acknowledging that both nature and production are essential and choosing the solution that best delivers both.

Similarly, growing and harvesting wood as a commodity to manufacture a wide range of construction, logistical, agricultural and consumer products, has been taken for granted within the UK economy for centuries. The idea that carbon benefit can be delivered by expanding this

economically-profitable ‘business as usual’, runs counter to the prevailing view that GHG removal is a novel and costly response to our reliance on fossil fuels.

It is essential that departments like BEIS with an interest in GHG removal, as well as the roles timber can play in decarbonising construction, packaging, energy and waste, work closely with Defra to ensure that the ‘upstream’ tree planting delivers the right trees in the right places to grow the timber to supply these needs.

6. What principles would you like to see included in a framework for incentivisation of greenhouse gas removals?

No answer – this question excludes forestry and wood in construction.

7. What specific policy mechanisms could the government consider to incentivise (a) innovation and (b) initial deployment? Could any of the policy options outlined above be designed in a way that stimulates investment in innovation, including pilots and demonstrators for less mature technologies?

In developing policy options such as tax credits for less mature technologies, it is essential to ensure this does not draw investment away from mature technologies like tree planting and wood in construction which can not only be deployed immediately, but which are low-risk and can deliver multiple co-benefits for jobs, the economy, and natural capital enhancement.

8. How could government best contribute to establishing optimum market conditions for GGRs to be developed and deployed at a large scale?

See Q14 below.

9. How might the role of government change over time to bring GGR technologies to market and encourage their deployment up to 2050?

No answer – this question excludes forestry and wood in construction.

10. Which factors should be considered when assessing the suitability of different policy options for businesses?

See Q14 below.

11. Are there any existing business models in other sectors – such as power, industry, transport or land use – that could complement new schemes to incentivise GGRs?

While tree-planting and timber in construction are mature and already-deployed technologies, there is significant work to be done to measure and maximise forest management and wood use for decarbonisation. Rather than GHG removal operating in isolation, with carbon stored ‘far away and out of sight’, this requires co-ordination between land use, construction, industry, waste and power sectors to recognise that wood is captured atmospheric carbon which is ‘active’ in the economy. Through policies such as wood cascading and strong recovery and recycling this active life can be extended decades or even centuries beyond the wood’s existence in the forest, buying vital time for climate change solutions. This has added importance given the limited supply of the raw material: wasteful use of wood risks scarcity which drives ‘overcutting’ of global forests or replacement of

wood with carbon-intensive materials. Incentivising GGR should include a ‘whole systems’ approach to trees and wood.

13. How far should a policy framework aspire to be technology-neutral between different GGR options?

The example given is: “BECCS applications have a unique position amongst GGRs due to their association with a variety of revenue generating products, such as electricity, heat, and low carbon gas. Support for BECCS technologies may therefore need to account for income derived from the sale of these products, alongside the value of the negative emissions they create.”

This is even more important for the wood economy, where stored carbon becomes a vast range of long- and short-life products with different levels of added-value: houses, fitted kitchens, garden or farm fences, sheds, pallets, plastic-free packaging, tissue and paper products. It is important that businesses and customers who replace mineral materials with this stored-carbon alternative, and who maximise the lifetime of these products through strong wood reuse and recycling policies, are rewarded. This is in the complex context of a global wood economy with prices which fluctuate often rapidly, and a land use market where woodland creation is competing in a crowded land market.

The Woodland Carbon Code, which enables landowners to buy accredited carbon from landowners planting trees on their land, is one of the most sophisticated examples of a scheme which engages with this complex market and seeks to identify ‘additionality’. However, this only rewards ‘accumulating carbon’ stored in the forest and not ‘active carbon’ stored in the economy.

14. Could wider support for GGRs have any unintended effects on the development and commercialisation of technologies in other sectors, and how could this be mitigated?

Yes there is a serious danger of new technologies skewing the market against expanding tried-and-tested ones.

For example burning virgin wood for BECCS instead of using virgin wood first for carcassing timber, pallets or packaging which can be recycled into particle board or insulation fibre, and finally used for BECCS, would have a carbon disbenefit at a global scale as forests would have to be overcut or concrete/ plastic used instead to supply the pallet/ construction/ packaging market. The first priority in meeting net-zero must be to reduce emissions as much as possible, with GGR playing a supplementary role. It is important, therefore, that wood is not removed from carbon reduction to tick GGR removal boxes.

There is also a danger that, with the technology established, engaging multiple stakeholders to maximise carbon through wood use is regarded as an unattractive challenge compared with developing new ground-breaking technology. However, in reality new technologies are themselves likely to face significant challenges of environmental risk, social acceptability and economic viability. Prioritisation of activity must be based on realistic assessment of the challenges likely to be met, and technical R&D not prioritised over the political challenge of deployment.

16. Should the government introduce a tax credit, and if so, how should this be designed? Should it be provided only for specific GGR technologies or a broad range of methods? Would multiple, specific rates be effective at incentivising as much investment as possible?

Ideally the reward for keeping a tonne of carbon out of the atmosphere for a year, should be the same across all economic activities, whether that carbon is in the form of a living tree, floorboards, or captured in an underground facility. Other co-benefits, such as manufacturing a product people can use, or creating wildlife habitat, should be rewarded separately either by the market or society, so that natural capital benefits including carbon are stacked up. In practice, with wider natural capital (including biodiversity and strategic sustainable resource provision) undeveloped, interventions must be targeted to deliver the desired outcomes.

The key danger to guard against is diverting investment and activity away from expanding established sustainable practice – such as wood in construction – and enabling less sustainable ones to grow their share under the guise of becoming more sustainable, for example Magnesium silicate cement, or burning virgin wood for BECCS. BEIS must be clear whether a commodity needs to expand its market share, or transform its manufacture, and ensure policy does not automatically deliver the former along with the latter.

17. Should participants from specific sectors with historical carbon emissions be eligible to apply for the credit or should the credit be economy-wide?

This question is ambiguous – presumably it is intended to ask if *only* sectors with historical emissions be able to apply for the credit.

It seems a perverse incentive that only sectors which have caused emissions should be able to benefit. Decarbonisation and GGR may result in an economic shift in which whole sectors become far more significant, thanks to their potential to deliver net-zero economic growth, while others become much smaller as intrinsically carbon-costly goods and services are only used for specialist purposes. Sectors which are already low-carbon which can deliver large-scale GGR should certainly be eligible for the credit.

18. If the government were to introduce a GGR obligation scheme, which businesses and emitting sectors could this cover? How could such a scheme be designed to minimise competitiveness impacts and regressive passed through costs (e.g. to consumers and bill-payers)?

Obligation policies for GGR can build on existing schemes for carbon reduction. Before introducing obligations, it will be important to ensure that sufficient capacity exists for accredited, low-risk GGR. Development of the ultimately successful renewable energy sector can provide important lessons.

19. What other regulatory approaches could government explore to incentivise GGR deployment?

No answer.

20. What are the merits and risks of introducing payment schemes for GGRs, potentially involving up-front grants or payments for each tonne of CO₂ stored? Which GGRs would be suitable for a payment scheme?

See Q16.

21. Could a contract scheme be effective in incentivising GGRs such as DACCS and BECCS? What would be the main challenges and limitations of such a mechanism, and how could it be designed to maximise its effectiveness?

There is risk in approaches which prioritise large-scale technological approaches and place GGR, so vital for the future of our planet, in a few hands. One of the successes of the development of the renewable energy sector has been the development of a dispersed energy network with many different stakeholders. Developing a 'carbon custodian' approach to carbon stored as wood products in the economy, has the potential for everyone to participate in GGR.

22. What could a cap and trade scheme for negative emissions look like, and which sectors would you propose to be included in such a market?

No answer.

23. The costs of different GGR technologies vary significantly. How could a cap and trade system address these differences? How could a cap and trade system be used to incentivise initial investment in any future emerging GGR technologies over a long-term trajectory?

No answer.

24. What role can government play in encouraging more companies to make voluntary commitments to invest in GGR technologies in the UK? To what extent can this support innovation in, and deployment of, these technologies?

No answer.

25. What are your views on the government's intention to coordinate deployment of GGR technologies such as DACCS and BECCS in line with our stated CCUS ambitions, and how could we best do this?

BECCS has extremely interesting potential in enabling wood to be burned for energy production while capturing its carbon in storeable form. This technology is relatively well advanced and, as biomass fuel already plays a significant role in the renewable energy mix, should be explored. The caution mentioned above about the potential negative impact of diverting wood directly into bioenergy rather than into the economy first through strong wood cascading and recycling policies should be borne in mind.

DACCS is far less well developed, and, while it should continue to be explored, the climate emergency is too urgent to be put off until a future fix is identified: robust policies to capture and store carbon, even on the temporary basis offered by wood in construction, must be implemented now.

26. What principles would you wish to see in any accreditation scheme for negative emissions? How should the government regulate this? Any evidence relating to best practice of existing negative emissions MRV (Monitoring, Reporting and Verification) is welcomed.

The Woodland Carbon Code is an advanced example of robust monitoring, reporting and verification for GHG removals, developed with multiple stakeholders and continuously improved. It has provided the model for other land use codes including a Peatland Code, and a proposed Woodland Water Code. The approach could potentially be expanded from land use into other sectors.

27. What are the most significant barriers to developing a robust monitoring, reporting and verification system for GGRs?

The main barrier is complexity: activities take place in a dynamic global economy and ecology, which MRV must navigate to avoid unintended consequences or ‘perverse subsidies’. The Woodland Carbon Code, which emerged out of early unregulating offsetting activities, has overcome these barriers through extensive stakeholder engagement and continuous improvement; and by building on the existing robust framework of the UK Forestry Standard which ensures that woodland for carbon credit does not destroy important habitats and is designed to high environmental standards.