



Department for  
Energy Security  
& Net Zero

# Consultation on a transitional support mechanism for large-scale biomass generators

Closing date: 29 February 2024

January 2024



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Any enquiries regarding this publication should be sent to us at: [transitionalsupport@energysecurity.gov.uk](mailto:transitionalsupport@energysecurity.gov.uk)

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# General information

## Why we are consulting?

As set out within the Biomass Strategy and Net Zero Strategy, power Bioenergy with Carbon Capture and Storage (power BECCS) is expected to play an important role in the UK's drive towards offsetting emissions as we strive towards a greener future.<sup>1,2,3</sup> Power BECCS has the potential to deliver a significant volume of removals that would support the UK's achievement of Carbon Budget 6 2033-2037 (CB6) and net zero.

The government committed in Powering up Britain: Energy Security Plan to working with electricity generators currently using biomass to facilitate their transition to power BECCS, subject to value for money and taking account of energy security on the road to net zero.<sup>4</sup> Whilst significant work is in train to support the transition to power BECCS, there will be a gap between the date existing support arrangements for some large-scale biomass generators ends in 2027 and their potential transition to power BECCS which is unlikely to take effect until 2030 onward. The timeline for the transition of biomass generators to power BECCS is influenced by a range of factors including capacity on, and access to, the transport and storage network, and the development and readiness of individual generation projects.

Biomass as a generation technology is typically subject to relatively high fuel prices. This is in comparison to anticipated power prices of other generation types and other sources of generation income, such as the Capacity Market. In the absence of support, it is in most scenarios unlikely that large scale biomass plants would be incentivised to generate. This would lead to the potential retirement of the plants and loss of the associated fuel supply chains and logistics.

Without these generators the UK could lose out on the optionality of having significant volumes of negative emissions capacity through power BECCS. Given that large-scale generators make up a significant proportion of the UK's solid fuel biomass generation capacity (7% of the UK's total electricity generation) this would also represent a significant reduction in both generation and capacity.<sup>5</sup> Losing this capacity from the network permanently would likely require the Capacity Market to procure more capacity to maintain security of supply. This could place an upward pressure on Capacity Market prices.

The government is therefore considering whether a transitional support mechanism is required to facilitate the move from large scale biomass generation to power BECCS. This would apply in certain circumstances where there is an interim period between the relevant generators' existing support ending and potential future power BECCS arrangements beginning.

We are consulting to inform our assessment of whether a transitional support arrangement is appropriate and, if it is, how best to design and implement that support mechanism.

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<sup>1</sup> [Biomass Strategy 2023](#)

<sup>2</sup> [Net Zero Strategy: Build Back Greener, 2021](#)

<sup>3</sup> [Carbon Budget Delivery Plan, 2023](#)

<sup>4</sup> [Powering Up Britain: Energy Security Plan, 2023](#)

<sup>5</sup> [DUKES 6.2, 2023](#)

## Consultation details

**Issued:** 18 January 2024

**Respond by:** 29 February 2024

**Enquiries to:**

Biomass Electricity Policy  
Department for Energy Security and Net Zero  
6th Floor  
3-8 Whitehall Place  
London  
SW1A 2EG

Email : [transitionalsupport@energysecurity.gov.uk](mailto:transitionalsupport@energysecurity.gov.uk)

**Consultation reference:** Consultation on a transitional support mechanism for large-scale biomass generators

**Audiences:**

This consultation will be of particular relevance to stakeholders with an interest in biomass electricity generation and power bioenergy carbon capture and storage.

**Territorial extent:**

United Kingdom

## How to respond

The consultation period began on 18 January 2024 and will run until 29 February 2024. You can respond using the [online form](#). Please ensure that your response reaches us before the closing date. If you'd like further copies of this consultation document or require alternative formats (Braille, audio CD etc), please contact [transitionalsupport@energysecurity.gov.uk](mailto:transitionalsupport@energysecurity.gov.uk).

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

**Respond online at:** [energygovuk.citizenspace.com/low-carbon/transitional-support-for-large-scale-biomass/consultation](https://energygovuk.citizenspace.com/low-carbon/transitional-support-for-large-scale-biomass/consultation)

or

**Email to:** [transitionalsupport@energysecurity.gov.uk](mailto:transitionalsupport@energysecurity.gov.uk)

**Write to:**

Biomass Electricity Policy  
Department for Energy Security and Net Zero  
6<sup>th</sup> Floor  
3-8 Whitehall Place  
London  
SW1A 2EG

When responding, please state whether you are responding as an individual or representing the views of an organisation.

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

## Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018, and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential, please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our [privacy policy](#).

We will summarise all responses and publish this summary on [GOV.UK](#). The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

## Quality assurance

This consultation has been carried out in accordance with the government's [consultation principles](#).

If you have any complaints about the way this consultation has been conducted, please email: [bru@energysecurity.gov.uk](mailto:bru@energysecurity.gov.uk).

## Context

The UK Government believes that energy security is a top priority as we seek to build greater energy resilience in the decades to come. To do this effectively, we are determined to maximise the opportunities available from our ambitious net zero and Carbon Budget 6 (CB6 – 2033 - 37) commitments.<sup>6</sup>

In *Powering Up Britain: Energy Security Plan*, published alongside the *Net Zero Growth Plan* in March 2023, we set our ambition for the smooth transition to abundant, low-carbon energy in the knowledge that decarbonisation and energy security go hand in hand.<sup>7</sup>

The government has committed to a fully decarbonised power system by 2035, while taking into account other strategic factors such as security of supply. Power BECCS is expected to play an important role in this, both from an emissions perspective and by providing a large source of domestic capacity, bolstering our energy security. This consultation sets out our plan to support the transition of large-scale biomass generation as part of this process.

The Government considers that biomass that is sourced in line with strict sustainability criteria can be used as a low carbon source of energy. This approach is in line with that taken by major international institutions such as the Intergovernmental Panel for Climate Change (IPCC). Biomass generation can be valuable to the electricity system as a form of dispatchable power, as it is a thermal fuel that can be stored under certain conditions.<sup>8</sup>

Power BECCS is the process of using sustainable biomass feedstocks to fuel a combustion process to generate electricity in combination with carbon capture and permanent storage. In this process carbon sequestered in the plant material is captured after combustion and stored underground. This removes CO<sub>2</sub> from the 'active' carbon cycle and creates a net removal of atmospheric CO<sub>2</sub>. Through this physical removal of greenhouse gases from the atmosphere, power BECCS can deliver negative emissions.

In addition, government is undertaking a major review of Britain's electricity market arrangements (REMA) which will enhance energy security and help to deliver our world-leading climate targets whilst ensuring a fair deal for consumers. This is with the aim of identifying and implementing the reforms needed to electricity market arrangements, in order to drive the necessary investment in, and efficient operation of a secure, cost-effective, low carbon electricity system by 2035. We ran our first REMA consultation in 2022 and published the summary of responses in March 2023.<sup>9</sup> We will shortly be publishing a second REMA consultation and will take decisions on shorter-term reforms more quickly where it is viable to do so. We will continue to ensure any policy interventions to support the transition of large-scale biomass generation takes into consideration developments on REMA.

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<sup>6</sup> The UK's Sixth Carbon Budget covers the period from 2033 to 2037.

<sup>7</sup> [Powering Up Britain: Net Zero Growth Plan, 2023](#)

<sup>8</sup> [Biomass in a low carbon economy](#) Climate Change Committee, November 2018

<sup>9</sup> [Review of electricity market arrangements consultation and summary of responses](#), March 2023



## Transitioning from biomass to power Bioenergy with Carbon Capture and Storage

The primary method of achieving net zero is through ambitious decarbonisation measures across society. However, sectors such as industry, agriculture and aviation will be difficult to decarbonise completely by 2050. Greenhouse Gas Removals (GGR) are essential to compensate for these residual emissions and to achieving net zero. The importance of GGRs is widely supported by a range of independent institutions, including the Climate Change Committee (CCC), the Royal Society, the International Energy Agency (IEA) and the Intergovernmental Panel on Climate Change (IPCC).<sup>10</sup> These institutions make it clear that removing carbon dioxide from the atmosphere is imperative for achieving net zero and limiting global warming.

Greenhouse Gas Removals refers to the engineered removal of greenhouse gases, usually carbon dioxide, from the atmosphere and their subsequent long-term storage. There are a range of technologies which achieve this, including various kinds of BECCS technologies and Direct Air Carbon Capture and Storage (DACCS).

In the Net Zero Strategy we set out a vision of a significant deployment of mature BECCS technologies, including retrofit applications in the power sector, to support the capture of carbon in the atmosphere. This will support the UK's pathway to net zero while providing new economic opportunities. Government has identified power BECCS as an integral part of the net zero transition. Power BECCS could deliver negative emissions as well as valuable low carbon electricity in a decarbonised electricity system.

The government is committed to facilitating the transition to power BECCS and is developing a power BECCS business model as part of the process. Last summer, the government consulted on the development of a power BECCS business model. This consultation, and our response, set out the key aim of the power BECCS business model to incentivise negative emissions, with low carbon electricity being a co-benefit. We also acknowledged the importance of strict sustainability criteria for biomass, something we built on in the recently published Biomass Strategy.<sup>11</sup>

Carbon capture, usage and storage (CCUS) is a government programme designed to mitigate carbon dioxide emissions (CO<sub>2</sub>) from large point sources or industrial facilities that use either fossil fuels or biomass as fuel. Government is delivering this programme through a track process. In March 2023, the Track 1 CCUS project negotiation list was announced. While there were no power BECCS projects on this list, the government announced future development of CCUS through Track 2 and expansion of the Track 1 clusters.<sup>12</sup> Track 2 will establish two new CCUS transport and storage systems by 2030, while the Track 1 expansion will look to expand the Track-1 clusters, HyNet and East Coast Cluster, and is for projects looking to connect to these clusters around 2030.

Government is currently considering the energy security landscape and the future ability to deploy power BECCS given the anticipated timelines for CCUS deployment. We are in

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<sup>10</sup> [Biomass Strategy 2023](#)

<sup>11</sup> [Biomass Strategy, 2023](#)

<sup>12</sup> [Cluster sequencing Phase-2: Track-1 project negotiation list, March 2023](#)

discussions on power BECCS deployment with projects who successfully passed the project submission process.

Powering up Britain and the Biomass Strategy set out government's vision for the role of biomass generation in the UK's future energy system. The use of biomass in the UK's power sector has helped to reduce the use of fossil fuels dramatically. In 2022, as a technology type, solid biomass fuelled generation provided 7% of the country's total electricity (135TWh).<sup>13</sup> We expect biomass to continue to be important for many sectors to deliver emissions savings up to, and beyond, the end of the CB6 period, as set out in the Carbon Budget Delivery Plan (CBDP).<sup>14</sup>

The government has previously indicated that it considers unabated coal to biomass conversions to be a transitional technology. This position is unchanged; the government remains committed to helping facilitate the transition of coal to biomass conversions to power BECCS as part of the delivery of a fully decarbonised energy system by 2035, subject to security of supply and value for money. We therefore committed in the Biomass Strategy to facilitating the transition of appropriate biomass generation to power BECCS. As part of that process and in light of the fact that it is unlikely that power BECCS could become operational until 2030 onwards, we are considering whether there is a case for providing transitional support for eligible generators which is a change from our previous position to end support in 2027. The Climate Change Committee has recommended that large-scale unabated biomass power plants are converted to BECCS as early as feasible and are not given extended contracts to operate unabated at high load factors beyond 2027.<sup>15</sup> This recommendation is also forming part of our considerations.

The National Audit Office are expected to publish a report shortly on the Government's Support for Biomass. We will consider any elements of that report which are relevant to the potential development of a transitional support mechanism as part of our policy development.

## The case for intervention

Our latest analysis suggests that the deployment of power BECCS is part of most cost-effective pathways to meeting net zero. Compared to other GGR technologies, power BECCS is a relatively cost-effective and low risk option and is expected to deliver a steady increase of engineered removals that would support the UK's achievement of CB6 2033-37. Analysis undertaken for the Net Zero Strategy suggested GGRs may need to contribute up to 23 megatons per year of negative carbon emissions by 2035 to enable the UK to meet climate change targets;<sup>16</sup> power BECCS could be an important contributor to this.

Based on our current evidence and understanding of the power BECCS project pipeline, we believe the most mature, reliable and cost-effective options for delivering power BECCS on CB6 timescales will involve converting existing biomass power plants to operate with CCUS. This is because conversion requires less time, cost and engineering effort than building a new power BECCS plant from scratch.

The government is taking a range of actions to support the sector to scale up in the UK including developing a first of a kind power BECCS business model and a GGR business

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<sup>13</sup> [Digest of UK Energy Statistics \(DUKES\): renewable sources of energy](#)

<sup>14</sup> [Carbon Budget Delivery Plan, March 2023](#)

<sup>15</sup> <https://www.theccc.org.uk/publication/delivering-a-reliable-decarbonised-power-system/>

<sup>16</sup> [Net Zero Strategy: Build Back Greener, 2021](#)

model. In December 2023, we published an update on both business models, which set out further detail on their design. The government is considering the energy security landscape and the future ability to deploy power BECCS given the CCUS timelines. Whilst significant work is in train to support the transition to power BECCS, there will be a gap between the date existing support arrangements for some large-scale biomass generators ends in 2027 and their potential transition to the power BECCS business model which is unlikely to take effect until 2030 onwards.

Existing biomass electricity generation has been eligible for support historically under a range of schemes. Most biomass-based electricity generation, and some biomass with combined heat and power (CHP), has been incentivised in the UK since 2002 under the Renewables Obligations (RO). The Contracts for Difference (CfD) scheme is now the government's main mechanism for supporting new low carbon electricity generation in Great Britain. Coal to Biomass plants are not eligible for new contracts under the CfD Scheme.

The Contract for Difference Scheme (CfD) is a private law contract between the Low Carbon Contracts Company (LCCC) and a low carbon generator. The LCCC was set up by government as an independent contractual counterparty. The LCCC operates the [contracts for difference](#) scheme and manages the operation of the [Capacity Market](#).

The generator receives a fixed price for generation, indexed to inflation (CPI), over the period of the contract. In standard allocation rounds, the strike price is determined via a competitive auction. The generator retains responsibility for selling its generation in the wholesale market and receives difference payments from the LCCC when the relevant wholesale price is below the strike price. The generator must make difference payments to the LCCC when the strike price is below the wholesale prices. Difference payments are funded by a statutory levy – the Supplier Obligation – on all licensed electricity suppliers, so are eventually passed on to households and businesses through their electricity bills.

The CfD scheme is fundamental to achieving the government's goal of a fully decarbonised power supply by 2035, subject to security of supply, whilst achieving value for money for electricity customers. The scheme has supported low cost, low carbon electricity generation, including 1.4GW of biomass generation. It protects consumers when electricity prices are high and provides income stabilisation for generators, generally for 15 years. This makes projects with high up-front costs but long lifetimes attractive to investors and lenders.

There are few existing large-scale biomass power plants in the UK. All of them currently rely on government support to generate electricity competitively. This support has enabled funding for significant capital investments. These arrangements for former coal plants which converted to biomass expire in 2027. Biomass as a generation technology is subject to relatively high current and expected fuel prices, relative to expectations of power prices and other generation income such as the Capacity Market. Plant operators have indicated that without government support they are unlikely to be incentivised to continue generating electricity.

The biomass fuel market (particularly for woody biomass pellets) is relatively immature and developing. This means that generators rely primarily on longer term contracts and/or self-supply. The elasticity of supply in biomass is lower than for other thermal fuels such as gas, with a spot market that is relatively thin and illiquid. The storage of biomass fuel carries material costs and hence storage capacity is limited. Transport of biomass relies on specialist supply chain logistics, which incur costs when flexed. As such, there are operational limits to the ability to flex fuel supplies in addition to the challenges of the relatively illiquid spot market.

Closure of such large-scale (formerly coal) biomass plants would hinder their conversion to power BECCS. This in turn could narrow the range of technologies capable of delivering negative emissions on CB6 timescales. We would need to enable the deployment of less certain and potentially more expensive pathways to meet our commitments to reduce CO<sub>2</sub> emissions.

Plant closures would also have implications for the UK's near-term security of supply. There are supply-side factors that may increase the relative importance of reliable and dispatchable power generation, like biomass, to the UK's energy mix during the expected period of the transition mechanism. We are phasing out GB coal generation by October 2024; some existing gas and nuclear capacity is expected to reach the end of their natural lifespan by the end of the decade, although new generation is being brought on in its place. With an increasing proportion of intermittent renewables on the system, we will need flexible and dispatchable generation to ensure continuous supply.

This transition coincides with an estimated increase in the demand for electricity. We anticipate that there could be an approximately 50% increase in demand by 2035, with a doubling by 2050. This is due to the electrification of many industries as part of the UK Government's Net Zero Strategy. In short, the retiring of a significant proportion of biomass generation assets would place additional supply side pressure on the UK's energy system. This supply side pressure would fall upon the Capacity Market to resolve, which could lead to upwards pressure on Capacity Market clearing prices and the provision of more highly carbon emitting generation on longer contracts. However, any cost increase in the Capacity Market would need to be considered against the cost of the transitional arrangements themselves.

We are seeking views on whether the government should explore such transitional arrangements to support the transition of biomass electricity generation to power BECCS and our proposed options for delivering such prospective support. We set out the policy options and eligibility criteria that we feel are most appropriate to lead us to the most advantageous outcome, taking into consideration the cost to the consumer. We intend that any such support would be for the short-term only and targeted at those large-scale generators best placed to transition to power BECCS and deliver its benefits.

**1. Do you think the government should intervene to create a support mechanism to help biomass generators transition to power BECCS?**

# Proposed Policy Interventions

## Overview

**The government is considering a range of potential interventions to meet the primary policy objective to support the transition to power BECCS as part of the government's decarbonisation commitments.**

In determining the range and scope of interventions, we set out a series of success factors which we consider to be critical for meeting the overarching policy objective.

**A successful potential mechanism must provide generators with an opportunity to remain in the market ahead of any future transition, while being affordable and providing value for money for consumers and/or the public purse.** Factors to consider include:

- the value of the generation capacity being available to help ensure security of supply.
- the direct cost to the consumer, noting that biomass is a relatively expensive fuel source. We anticipate that a support mechanism would be funded through a levy on consumer electricity bills, consistent with the approach taken for existing CfDs.
- the extent to which generators are incentivised to generate when power is most valuable to the consumer, noting the increased capacity of intermittent generation expected to come onto the system in the late 2020s and early 2030s.
- the carbon benefits of biomass generation over that of gas and other fossil fuels, dependent in part on the extent to which the policy does or does not lead to any crowding out of other intermittent renewable generation.

**A potential mechanism must be deliverable within a constrained timetable to achieve the intended benefits.**

We are considering transition arrangements for eligible generators whose current government support mechanisms end in 2027. If we decide to proceed with transitional support, it must be through a robust mechanism which can be implemented quickly to give certainty and security for both the wider market and generators needing to take investment and operational decisions. It would be preferable to deliver any intervention through existing primary legislation.

**It should also be consistent with subsidy control principles** which underpin the subsidy control regime introduced by the UK Subsidy Control Act 2022.<sup>17</sup>

**The mechanism should be designed to manage the changing circumstances which may affect an eligible generator's success in transitioning to a future power BECCS system.**

There is a risk that an eligible generator is subsequently unsuccessful in their bid to participate in any regulatory mechanisms for future power BECCS support, or indeed an eligible generator chooses not to take appropriate steps to seek to enable a transition to power BECCS. There will therefore need to be arrangements to wind down or put a time limit on transitional support

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<sup>17</sup> <https://www.legislation.gov.uk/ukpga/2022/23/enacted>, 2022

efficiently. Any transitional arrangement should provide sufficient certainty to a participating generator to help secure operation, whilst retaining some flexibility of tenure to respond to the development of CCUS and be proportionate to provide value for money and affordability.

**2. Do you agree with the success factors we have identified?**

**3. Are there additional factors we should consider?**

## Policy Options for enabling a transitional support mechanism

In developing our options, we have considered the operational characteristics of large-scale biomass electricity generation as outlined in the Context chapter. We have identified four preferred options. We have also considered two additional approaches which overall we do not consider meet our success factors.

There is also a counterfactual option with existing contracts concluding from 2027 and choosing not to introduce a supporting mechanism. This is not our preferred option due to the risks that it poses to one or more existing biomass generators retiring from the market when current subsidies end. However, it must and will remain a critical option for us when performing any value for money assessments.

Under any of the options, the intervention would be for a limited duration to reflect the expected length of transitional support required and would be agreed on a bi-lateral basis. There would also be some flexibility in respect of end date to cater for uncertainty as to if and when the asset may migrate to a power BECCS business model. Most options are based around a consumer funded CfD, a mechanism of which government has significant experience from existing CfD arrangements. The agreed funding structure will be decided based on a range of considerations including legal powers, value for money and contract design.

The four options we are considering are as follows:

1. CfD – unconstrained; a contract similar to existing arrangements for biomass generators, with a strike price set for generators and generators having flexibility over the volume of generation. We would expect this to lead to relatively high biomass generation volume during the transition period.
2. CfD – with a generation collar; as above but amended to include minimum and maximum volumes for generators. We would expect this to lead to moderate biomass generation volume over the transition period.
3. Availability Payment; a payment in return for the assets maintaining availability, but with no subsidy of generation activity itself. We would expect this to lead to quite low volumes of biomass generation over the transition period.
4. Regulated Margin; an open-book arrangement in which support is given such that there is a minimum profit level for the assets, but with the consumer then sharing in the profit above that level. This option could correlate to a moderate or high volume of generation, depending on how it is calibrated.

## CfD – Unconstrained

### **Outline Description:**

This would provide a CfD contract to successful generators, similar to existing biomass CfD contracts, but for a shorter duration. Generators would have discretion over when and whether to generate. They would receive top up payments from the LCCC when generating at low reference prices and make payments to the LCCC when reference prices were high. It would be a relatively straightforward extension of existing CfD support structures currently in place for biomass generators. The CfD mechanism, with a fixed strike price, can help to insulate consumers from price volatility arising in the wholesale electricity market.

### **Option design:**

A strike price would be set. The generator would receive a payment from the LCCC based on  $(\text{Strike price} - \text{Reference price}) * \text{volume of generation}$ , ensuring that the generator is 'topped up' to the strike price based on the difference to the market price. The cost of this top up would be levied to consumers.

Where reference prices are above strike price the generator would make payment to the LCCC based on the same formula above, i.e., they would pay back to the LCCC the difference between strike and reference price (this pay back should then feedback through to consumers via suppliers).

The reference price would be the seasonal reference price (known as Baseload Market Reference Price or BMRP) already in use for biomass generators, which is captured season ahead.

The total wholesale market revenues for a generator under this arrangement is therefore as follows:

$(\text{Actual Market Price achieved} + \text{Strike Price} - \text{Reference Price}) * \text{Volume of Generation}$

In such an arrangement, generators could opt to generate baseload, in which case the Actual Market Price achieved should be equal to the Reference Price, leaving the generator with a net revenue based on the Strike Price alone.

However, where generators have a generation capacity that is higher than can be fulfilled by fuel supply logistics, then they would have some incentive and ability to focus actual generation at specific times where the spot market is higher than the season as a whole. As a result, their Actual Market Price achieved would be higher than the Reference Price, meaning they can capture this additional uplift. This also benefits the system as generation is prioritised at a point when the system requires it.

### **Considerations:**

This approach has the benefits of being relatively straightforward. The mechanism is already being used to support biomass and is familiar to both government and generators. The agreement of a strike price gives the generators confidence to buy fuel on forward contracts and commit to the operational availability of the assets.

The use of the Baseload Market Reference price, as described above, means that generators retain some incentive within any season to focus generation on the most valuable periods, where they have surplus generation capacity constrained by fuel supplies.

However, this approach incentivises a high load factor and a material volume of biomass generation through the year because the subsidy is directly proportional to the volume of power generated. This, coupled to high biomass fuel costs, implies higher costs to the consumer. With increasing wind and solar generation on the system over the late 2020s and early 2030s, it also risks the consumer sometimes paying for biomass generation when there are sufficient other renewables available to meet demand.

There is also a risk that in time of acute high prices, generators find routes to market for their biomass fuel and do not generate (such as selling to merchant generators), or generate lower volumes, via the CfD. This risks denying the consumer the price support they were expecting in high price periods, yet leaves them still paying the generator for that support in low price periods.

## CfD – Generation Collar

### **Outline Description:**

This would provide a CfD contract to successful generators as described in the option above, but with a collar on generation volume (in MWh) assessed on an annual or seasonal basis.

The floor would ensure the asset remains operational and supports UK generation, particularly in high price periods where there is otherwise a risk that fuel is routed into the merchant market. The cap would conversely act to protect customers against the risk of procuring too much unabated biomass generation (which could lead to curtailing other cheaper forms of renewable generation) during the period of the support mechanism.

### **Option design:**

The fundamentals of the CfD would work as per the description provided for CfD-Unconstrained.

However, the volume floor could be set at either a seasonal level or an annual level. The floor would commit the generator to generating a minimum volume over that period and would have several practical and beneficial effects for consumers and the energy system. It would ensure that generators maintain fuel supplies and logistics to meet the floor commitment, and hence reinforce the operational availability of the asset. It would also mitigate the risk of biomass fuel relocating to the merchant market in times of high power price, ensuring that consumers get both the generation volume and some price support in times of high market prices.

The cap would represent the maximum volume eligible under the CfD in that same period. This would help protect the consumer from high volumes of what might be quite expensive biomass generation, thereby lowering the overall cost of the policy. The cap could also reduce the chance of biomass generation competing with intermittent renewables during low price periods.

It is important to note that the cap would be an upper limit to the volume that is subject to the CfD subsidy rather than a cap on actual generation. Generators could generate above the cap if they chose to do so, but on merchant terms and outside of the subsidy regime.

### **Considerations:**

Through using a CfD this approach would benefit consumers by providing a cap on pricing. This approach is moderately more complex than the Unconstrained CfD due to the



introductions of the volume generation collar, but the fundamentals of the policy and calculation remain the same.

As the load factor is likely to be moderate under this approach compared to an unconstrained CfD we judge that overall costs to the consumer are likely to be lower. The moderate volumes eligible for support will mean that volume is more concentrated at times of higher market prices, and hence there is a lower risk of crowding out of intermittent renewable generation.

The constrained structure of this option has the added benefit of reducing the likelihood that generators will be able to take advantage of volatile price scenarios, leading to better value for money.

## Availability Payment

### Outline Description:

This would provide a payment for availability to successful biomass generators.

This contract would be for the expected transition period (unlike the annually awarded single year contracts existing generators normally receive through the Capacity Market). This would give generators the certainty required for asset life extension. This option would support generators to remain operational, generating where market signals dictate a positive spread for biomass generation (i.e. at times where price is above short run marginal costs).

### Option design:

An availability price would be agreed with the generator. The generator would receive the availability payments, based on demonstrable evidence that the assets are maintained and available for dispatch, particularly at times when power prices are high relative to seasonal averages.

There would be contractual commitments regarding availability, with financial penalties or forgone payments should stations not be able to meet such commitments.

The generator would decide when to generate and would receive no subsidy or price support for generated power. As such, generation would only be expected to occur when market prices are above short run marginal costs of generation (the majority of which is comprised of fuel cost).

### Considerations

We would expect an availability payment option to lead to a higher carbon outcome over the transition period. It could be reasonably expected that, without generation support, biomass will come after gas in the merit order and hence there will be higher gas generation than in the preceding options. With increasing electricity demand forecast the expected limited volume from this option would need to be replaced by other technologies to meet that demand.

However, the option is potentially the lowest cost for the consumer in that the support is primarily for the availability of the asset and does not attach subsidy to generation volume. Biomass fuel is relatively high cost, and under this option we would expect a relatively low load factor over the transition period. However, the availability payment would need to be sufficient to cover the operational costs of the generation asset. This model requires further defining in relation to how availability would be evidenced; this could draw on similar principles established under the Capacity Market.

The option would potentially create some operational challenges and costs for generators, as it creates the least amount of certainty in terms of fuel logistics and supply chains, and could add complexity to the transition to power BECCS generation.

## Regulated Margin

### **Outline Description:**

This would provide a regulated margin agreement with the generator. A regulated margin, also referred to commonly as a spread, is a metric for estimating the profitability of electricity generators. It broadly considers the difference between the price received by the generator for electricity produced, and the cost of the biomass needed to produce the electricity. This would provide the generator with support to achieve an allowable profit in return for meeting certain criteria.

This ensures the generators a set margin, but at the same time protects consumers from a transition mechanism that could lead to overpayment, given the risks related to the uncertainties of market price, fuel and operational costs during the period.

### **Option design:**

There are two options outlined as to how this could work.

#### **Sub-option 1: Regulated via an agreed fixed margin over fuel costs**

The government enters into a generation collar (or unconstrained) CfD with the generator. This would be based on a market benchmarked source of fuel costs, plus a spread to cover station operating costs and reasonable generator margin.

The CfD strike would then be adjusted each year to reflect changes in market cost of fuel, with the spread held constant.

This option would essentially ensure that the station gets a CfD Strike Price that allows a reasonable profit relative to fuel costs, with that Strike Price then being adjusted over time as fuel prices move up or down.

The Strike Price adjustment could be set to be the majority but not all of the movement in fuel price, which means the generator sees some upside from reducing fuel prices and bears some of the cost of fuel price increases.

#### **Sub-option 2: Regulated via a cap on excess profit, with an underlying CfD that is fixed.**

The government would enter into a generation collar (or unconstrained) CfD with the generator. This would be based on an assumed cost of generation plus a profit margin.

The generator would produce a ringfenced set of accounts at end of year, showing all costs and revenues from generation. Profits above an allowable rate would be subject to an 'excess profit' mechanism which would leave some of this with the producer but returns the majority to the consumer, who has provided the support. Such return of any excess profit could be via a fixed payment, or alternatively via an adjustment in Strike Price for the following year.

In effect this is an open book arrangement, with some of the excess profit residing with the generator to retain market incentives.

## **Considerations:**

This is a more interventionist option and requires more complex design, requiring longer to develop and implement. This makes it a harder option to deliver within the constrained timetable to deliver the intended policy benefits. We note that it would require a greater degree of information transfer required than the CfD based options on which it builds and a higher complexity in ongoing management. However, this approach could offer some protection to the consumer from any risk of excess subsidy, whilst at the same time providing some certainty of operational profit to the generators during the transition period.

Sub option 1 provides generators with protection against fuel price movements in the transition period, though in turn exposes consumers to the risk of these moving.

Sub option 2 leaves generators accountable for managing fuel price but protects consumers if the overall subsidy arrangement generates excess levels of profit.

**4. Do you agree with the options above being included as preferred options? If no, please articulate why the option is not suitable and provide evidence where appropriate.**

**5. Do you prefer one of the options as described above? If so, please provide your reasoning and any evidence to support.**

**6. Do you have views on approaches we should consider as part of our options to ensure generators are not overcompensated?**

**7. Do you have any other material comments relating to the mechanics of each option or the outline evaluation as articulated? If so, please provide details.**

We do not propose to run a competitive process for the awarding of potential transitional support outlined in this consultation. This is based on our expectation that the number of eligible generators is likely to be small, limiting the viability of a competitive process. The exact nature of any potential necessary legislative amendments would be subject to final policy design. Where a CfD related route is taken, the government proposes that any successful eligible generators would be awarded contracts under section 10 of the Energy Act 2013. We envisage the contract(s) would need to be tailored to the specific circumstances of any individual project(s) and therefore a section 14 standard term contract via the allocation round process would not be appropriate. Reasons include: the timeframe for the overarching policy intent and when any agreement would be required; the increased number of amendments which would be required to the allocation round process (both within legislation and the allocation framework to enable any projects to be eligible for an allocation round and the potential ramifications for the wider allocation process of any amendments made.

This also reflects that the transitional support we are considering is to cover specific circumstances and on timeframes which do not necessarily align with the Allocation Round process.

## **Note on Relationship with the Electricity Generator Levy (EGL)**

The Electricity Generator Levy is a temporary 45% tax charge applied on eligible exceptional receipts generated from the production of wholesale electricity.<sup>18</sup> As part of further design of

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<sup>18</sup> [Electricity Generator Levy policy paper, 2023](#)

the options, the government will consider the temporary relationship between the preferred options described above and the EGL, as there is likely to be a short period of overlap between the transitional support mechanism and the last year of the EGL's application.

## Non-preferred options

We have also identified two non-preferred options which we think on initial view may offer benefits but which we consider to be unlikely to meet our overarching success factors and therefore do not intend to pursue.

### Early Deployment of CfDe

#### **Outline Description:**

The government's response to the power BECCS business model consultation, published in March 2023, confirmed the overarching contractual framework and dual payment mechanism of a 'CfDe + CfDc' for large-scale power BECCS, to recognise the importance of the negative emissions and low-carbon electricity as valuable outputs and the risk allocation required to incentivise both in an appropriate manner.<sup>19</sup> The CfDe Strike Price in the power BECCS business model is likely to be based on the costs of running a project unabated using biomass, which is consistent with current biomass generation contracts.

In this option, generators deemed eligible for transitional support would be provided the CfDe component of the above framework, agreed via a bilateral negotiation. The CfDc could then be added in future if and when the generator was successful through a power BECCS track process.

#### **Rationale:**

The basic rationale for this option is that it would utilise the future business model support scheme for power BECCS, as it applies to generation where no carbon capture is possible.

#### **Why discounted:**

The primary reason for discounting this option is timing. The power BECCS business model is in development and the structure of the CfDe may have interactions with the function of the CfDc, in order to maximise negative emissions which is a core aim of power BECCS business model. The CfDe component may not be finalised ahead of transition support and may not function appropriately as a stand-alone support without further consideration.

## Mothballing

### **Outline description**

Under a mothballing scenario, the government would facilitate relevant companies to maintain eligible plants at a non-operational level. This would be sufficient to keep the units under maintenance with a core staff until the end of the mothball period. Subject to the company

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<sup>19</sup> [Power bioenergy carbon capture and storage consultation: government response](#), 2023

becoming eligible for power BECCS, staffing could be scaled back up and the units brought back on to deliver power BECCS.

### **Rationale**

This approach would ensure no loss of the physical assets during the transition period and hence retains the optionality of bringing substantial biomass electricity back onto the system should PBECC be achieved. Generators in receipt of such mothball payments could choose to generate, should market conditions become favourable during the period.

### **Why discounted:**

Superficially this approach may look attractive, as it ensures no loss of the physical assets during the transition period at what would be the lowest expected cost of any of the subsidy options.

However, the lack of any certainty on operational status would likely lead to the Capacity Market having to buy capacity in lieu of these assets, which is not efficient when the assets then return to operational status. The material cost and human and physical supply chain disruption associated with restaffing and return to operational status would also likely need to be factored into a future power BECCS agreement. This would create considerable indirect costs to such a solution. Finally, we consider that this option would mean a higher amount of gas generation during the transition agreement and hence a higher carbon outcome.

**8. Do you agree that these options should be discounted and considered as non-preferred? If not, please provide rationale and any evidence.**

# Delivering a Transitional Arrangement

The government is considering a range of interventions to potentially support generators during the transition to adopting power BECCS. In order to support the delivery of this transition, we have set out proposed eligibility criteria and sustainability criteria. The purpose of these is to ensure that the generators who would be supported under any intervention are the most suitable for addressing the strategic objectives of the project.

## Proposed Eligibility Criteria

Potential eligibility criteria have been developed to identify large-scale power biomass generators that could feasibly transition to power BECCS and in turn support the government's net zero goals as outlined in [Powering up Britain](#).

Current evidence of the existing power BECCS project pipeline suggests the most mature, reliable and cost-effective options for delivering on important carbon budget timescales could involve converting existing biomass power plants to utilise carbon capture and storage. This is because conversions would require less time, cost and engineering works than a new-build facility. Furthermore, this would help retain both jobs and substantial renewable electricity generation which supports the [Net Zero Growth Plan](#) and the UK's [Energy Security Plan](#).

Our draft eligibility criteria for potential transitional support have been developed in line with the following considerations:

- the primary objective is to help facilitate the transition to large-scale power BECCS and therefore the primary focus of these eligibility criteria is on the plant's ability to successfully transition to an effective Power BECCS operation to produce substantial negative emissions.
- the policy proposals, compared to the counterfactual of business as usual, would support the UK's security of supply.

The following proposed eligibility criteria were developed with consideration of the power BECCS eligibility criteria published as part of the expansion of the Hynet Track 1 cluster on the CCUS programme.<sup>20</sup> We propose that projects would have to meet the criteria below at a minimum to be considered for transitional support as part of the eligibility assessment process (covered further later in this chapter):

### Located onshore in Great Britain

Projects are required to be located onshore in Great Britain. This criterion has been set to reflect the UK Government's commitment to achieve negative emissions to contribute towards [Powering up Britain](#) and the CB6<sup>21</sup>.

Projects in Northern Ireland would not be eligible for support because electricity policy is devolved, and Northern Ireland has a separate electricity market from Great Britain.

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<sup>20</sup> [Carbon capture, usage and storage \(CCUS\): December 2023 statement](#)

<sup>21</sup> [Carbon Budget Delivery Plan, 2023](#)

## Potential to provide net-negative emissions

Projects must be able to achieve permanent atmospheric CO<sub>2</sub> removal through geological storage once converted to power BECCS. For a project to be credibly 'net-negative' it must remove more greenhouse gases (GHGs) from the atmosphere than it creates throughout its entire supply chain (both domestic and international).

Projects would be expected to provide a lifecycle analysis (LCA) and a proposed methodology including a monitoring, reporting and verification (MRV) plan as evidence for this criterion. This is aligned with the approach for CCUS Hynet Track 1 expansion.<sup>22</sup>

## Have one of the eligible configurations

Projects must be thermal generation with sustainable biomass as the primary fuel input.

The proposed power BECCS plant must be one of the following technology types:

- Post-combustion or,
- Pre-combustion (on-site) or,
- Oxy-fuelled combustion.

## Use eligible feedstock

Projects must use predominantly biogenic feedstock (90% or higher). This is consistent with definition of "biomass" used in previous support schemes, such as the Renewables Obligation, and will ensure a high level of negative emissions.

## Have a minimum projected capture rate of 90%

The plants proposed power BECCS project must be designed to achieve a minimum of a 90% capture rate when the plant is operating at full load.

Calculate it using: Capture rate (%)

$$\text{Capture rate (\%)} = \frac{\text{CO}_{2\text{exp}}}{\text{CO}_{2\text{gen}}}$$

Where:

CO<sub>2exp</sub> = total flow of CO<sub>2</sub> into the T&S network during an hour of operation at full load.

CO<sub>2gen</sub> = total flow of CO<sub>2</sub> in streams intended to be routed to the capture plant during an hour of operation at full load.

## Have a minimum abated power generation capacity of 100MW

Through the transition to the power BECCS business model we are aiming to bring forward projects that can deliver on the policy objectives of providing large-scale negative emissions to contribute towards engineered removal targets and generating significant, low-carbon power

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<sup>22</sup> [Carbon capture, usage and storage \(CCUS\): December 2023 statement](#)

for the grid which contributes to UK security of supply. This accounts for the energy used to power carbon capture and storage equipment.

The government is looking for substantial contributions to this ambition and a power generation capacity of 100MW was deemed necessary to ensure that policy objectives would be met. This means supporting plants that can deliver on both negative emission pathways<sup>23</sup> and provide significant stable baseload power to the grid. Projects must therefore be able to generate a minimum of 100MW and export this to the grid. This minimum is also consistent with the eligibility criteria used to define a 'large' power station for the CCUS Dispatchable Power Agreement<sup>24</sup> which provides a valuable level of power to the grid.

The project must not be receiving other subsidy for the same power generation upon start of support

This eligibility criterion is in place to prevent over-subsidising of the same power generation. The generator must not be in receipt of more than one support mechanism for the same power generation as the costs would be covered by more than one subsidy scheme.<sup>25</sup>

Provide credible plans to contribute to Carbon Budget Six

BECCS technology is an important part of the UK's Net Zero Strategy scenarios, providing the single largest source of negative emissions required to offset residual emissions in 2050.<sup>26</sup> Power BECCS is expected to deliver a steady increase of engineered removals that would support the UK's achievement of CB6 2033-2037. This assessment is supported by Climate Change Committee (CCC)<sup>27</sup> and National Infrastructure Commission (NIC)<sup>28</sup> reports.

Projects would therefore need to demonstrate credible deployment plans that can contribute to CB6. Deployment plans will be subject to gaining access to a CCUS Transport and Storage network.

This could take the form of a project schedule with logic that incorporates activity durations which are judged to be within reason. For example, in comparison to similar activities undertaken on other projects and considering any applicable processes, such as acquiring any necessary planning permissions or procuring suppliers. The critical path and relevant lead times would be clearly identified with floats incorporated as required.

Although submission of a project schedule would not be new for CCUS projects, this specific eligibility criterion is new for this transition mechanism. This criterion is proposed to reflect the primary focus of retaining potential options to generate negative emissions for decarbonisation.

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<sup>23</sup> [Net Zero Strategy: Build Back Greener, 2021](#)

<sup>24</sup> [CCUS Business Models, 2023](#)

<sup>25</sup> The same power generation relates to the same unit of generation e.g., the same mw/h of power should not be subsidised twice.

<sup>26</sup> [Mission Zero: Independent Review of Net Zero, 2023](#). Various Whole System Energy models reviewed here (UK Times, ESME, CCC modelling) show the need for BECCS technologies to deliver well over half (in some cases close to 70%) of negative emissions from engineered greenhouse gas removals, as well as at least a third of all sequestered emissions (including nature-based removals).

<sup>27</sup> [CCC: Sixth Carbon Budget Report, 2020](#)

<sup>28</sup> [National Infrastructure Commission: Engineered Greenhouse Gas Removals, 2021](#)



## Demonstrate need for transitional support

The transitional support mechanism should only be used where there is a clear rationale for intervention. Projects would therefore be asked to demonstrate the need for a power BECCS transitional support mechanism. This could be in the form of a financial statement and generation cost/revenue analysis where business plans for the organisations involved and details of how the project fits with the company's overall strategic ambition are provided.

This eligibility criterion is new for this transition mechanism and is proposed in order to help focus the transitional support towards addressing a genuine market failure.

## Assessing Eligibility

We encourage any party who considers they may be eligible for transitional support as outlined in this consultation to contact us by 31st March 2024 [transitionalsupport@energysecurity.gov.uk](mailto:transitionalsupport@energysecurity.gov.uk).

Projects would be required to outline how they meet the relevant criteria and any supporting documentation they will provide to evidence this. Government would then conduct an eligibility check to ensure that supporting documentation provided demonstrates all criteria have been substantially met and evidenced.

The government would be looking for credibility and consistency in the information provided. Only those projects that met the relevant eligibility criteria would be evaluated further and be capable of being shortlisted to participate in the negotiation/due diligence stage.

During the evaluation process we would perform additional checks on the credibility of the evidence provided and the robustness of any calculations involved. Projects which failed to provide sufficient evidence in respect of their satisfaction of the eligibility criteria would not progress further into the evaluation process.

Furthermore, to maintain alignment with the objectives of the support mechanism and ensure value for money is maintained, government would retain the right to implement appropriate contract reviews. For example, this could include a wind-down clause if support is deemed no longer necessary.

### **9. Do you agree with the eligibility criteria and assessment process set out? If no, how should they be adapted to be more suitable?**

## Proposed Sustainability Criteria

The Biomass Strategy reiterated the government's firm commitment to the sustainable use of biomass and set out priority use principles for biomass that we will consider as part of the development of this policy. The government already only supports biomass uses across the economy that demonstrates compliance with the relevant sustainability criteria. However, the government committed in the Biomass Strategy to developing a cross-sectoral sustainability framework subject to consultation.

The cross-sectoral sustainability framework will deliver increased alignment of sustainability requirements across sectors of the bioeconomy by creating shared minimum criteria, which can also expand to cover emerging biomass feedstocks and uses. In the Biomass Strategy, we set out that such a framework would be applied to new future policies and schemes on

biomass. It would not be applied to existing government schemes and contracts, save that it may be applied where an existing scheme updates its sustainability criteria, provided that it is deemed appropriate. This overarching sustainability framework would continue to allow flexibility for the variable sectoral and technical needs of different biomass feedstocks and end uses.

The framework will include detailed sustainability criteria and the governance mechanisms to support it. The framework will look to include common minimum requirements, such as criteria for waste, crop cap, efficiency and GHG thresholds, but allow flexibility for sectors to set higher requirements and ambitions where achievable. We provide further detail on anticipated elements of the framework in the Biomass Strategy, which will be subject to consultation. These include actions relating to developing a common GHG emissions calculation methodology for biomass supply chains with comparable units, and aspects of the land criteria based on latest evidence.

The development of the cross-sectoral sustainability framework is a complex and detailed process. We expect to consult in 2024 on the framework and supporting implementation routes and monitoring, reporting and verification requirements.

Power BECCS projects in the future will be required to comply with biomass sustainability criteria. These criteria are currently in development, alongside the development of the consultation on the cross-sector sustainability framework to ensure alignment as far as possible.

For the support options set out in *this* consultation on transitional support arrangements for large-scale biomass generators that plan to transition to power BECCS, at a minimum we expect any eligible generators would have to demonstrate compliance with sustainability criteria for electricity generation that is consistent with any existing government funding support they receive. However, we are also considering if we can develop the existing biomass electricity sustainability criteria further with requirements specific for such a transitional arrangement. Any such additional measures would be developed with close consideration of the ongoing policy development of the future cross-sectoral sustainability framework.

We will also consider how we can best ensure the sustainability requirements of potential transitional arrangements remain fit for purpose most notably given the future establishment of a cross-sectoral sustainability framework consultation, whilst also being proportionate and considering the practical impact for affected generators. For example, as set out below, we will consider whether updated sustainability objectives could be incorporated into a contract, either via a contractual or legislative route, once the contract's term has started.

One of the areas we may consider strengthening for any transitional arrangement is the Greenhouse Gas (GHG) criteria. The GHG criteria require that life cycle GHG emissions associated with biomass use (including production, cultivation, harvesting or collection, transportation, and processing) are included in emission calculations. Operators must meet set thresholds (which tighten over time) to ensure a minimum GHG saving is achieved against a fossil fuel reference. Alongside the development of the UK cross-sector sustainability framework we are considering strengthening the existing GHG threshold for electricity generation based on up-to-date evidence and taking account of wider international practice e.g. such as the EU's REDII and REDIII. We will consider if it is possible to bring forward an update to the GHG criteria for any transitional arrangements. We welcome views and evidence to support how the GHG threshold can be developed further as part of the proposed transitional arrangements.

**10. During a transition period from biomass electricity to power BECCS, do you think that the GHG criteria should be strengthened? If so, how? Please provide evidence to support your views.**

Under the RO and CfD sustainability criteria a minimum of 70% of woody biomass must be obtained from a sustainable source. We set out in the Biomass Strategy that we are minded to increase this requirement to 100% as part of the development of the cross-sector biomass sustainability framework. This will require further work through the consultation planned in 2024 to explore the impacts on different end use sectors, including the monitoring and reporting requirements of this change.

In parallel, we will consider the impact of this change on the biomass electricity sector as part of any transitional arrangements to power BECCS set out in this consultation, including whether it may be appropriate to strengthen existing requirements on the proportion of woody biomass which must be obtained from a sustainable source.

**11. As part of the proposed transitional support arrangements for large-scale biomass generators that plan to transition to power BECCS, do you think that we should increase the minimum percentage of woody biomass that must be obtained from a sustainable source? If so, what should be the minimum percentage be set at? Please provide evidence to support your views.**

We would also welcome views and evidence on whether there are any other specific sustainability criteria for biomass electricity which we should consider amending as part of the transitional support arrangements proposed in this consultation, noting the ongoing policy development and future consultation of the cross-sectoral sustainability framework.

**12. Are there any additional sustainability criteria we should consider strengthening specifically as part of the proposed transitional support arrangements?**

## Monitoring and auditing compliance

It is essential that there are effective monitoring and auditing arrangements in place for the management of any future transitional support arrangements in the move to power BECCS. Where biomass is already supported by the government, there are independent bodies in place to verify the use of sustainable biomass. All data submitted as part of this regulation process is required to be independently verified and audited.

We anticipate that the proposed transitional arrangements would draw on those for the auditing of existing CfDs. Generators supported through a CfD with a minimum Commissioned Installed Capacity of 1MW or above are required to submit monthly and annual reports to LCCC demonstrating compliance with the Sustainability Criteria under the CfD Scheme. Reports by generators must include information on the sustainability characteristics of all consignments of fuel, such as the biomass feedstock type, country of origin, the form of biomass and fuel classification. Data from monthly and annual submissions are cross-checked by LCCC. LCCC employ additional auditing mechanisms to verify data collected by generators through the sustainability criteria audit report, which provides an independent third-party view, commissioned by generators, to verify that generators have provided sufficient evidence of compliance with the criteria. Failure to comply with an exercised sustainability criteria audit may lead to the suspension of payment to generators of any Net Payable Amounts. LCCC has appointed Ofgem as a contractor to support and advise LCCC on sustainability aspects related to the CfD scheme.

## Proposed Legislative Amendments

We anticipate a transitional support mechanism would require secondary legislation amendments. If the government determines to establish a transitional support mechanism, we will seek to introduce the necessary legislative changes as soon as parliamentary time allows. We have outlined below some of the areas where we anticipate changes may be required, subject to final policy design.

### Eligibility

If a CfD route is chosen, it is envisioned that the Secretary of State will use the powers in section 10 of the Energy Act 2013 to direct the counterparty (LCCC) to offer individual contracts to successful generators.<sup>29</sup>

To enter into a CfD, a generator must meet the definition of an Eligible Generator (see section 10(2) of the Energy Act 2013), which is specified in the Contracts for Difference (Definition of Eligible Generator) Regulations 2014.<sup>30</sup>

Currently, to be an eligible generator a generator must intend to establish an eligible generating station, to alter an eligible generating station to increase its capacity by 5MW or more or alter an existing generating station in order that it becomes a generating station connected to a complete CCS (carbon capture storage) system.

Under a CfD route, we are proposing to widen the definition in regulation 3 of the Eligible Generator Regulations to enable the inclusion of generating stations which are already generating electricity. This is because the support would be aimed at existing generators with the potential to connect to a complete CCS system to continue to operate during a transition period.

### **13. Do you have any comments on the proposed amendment to the definition of an eligible generator to specify that generating stations which are already generating electricity are eligible generators?**

The proposed eligibility criteria for this project are set out above describing which generators may be eligible for the potential support. All those encompassed in that criteria need to be considered eligible generating stations, as defined in the Eligible Generator Regulations, if a CfD option is chosen. Therefore, we have considered if any additions need to be made to Schedule 1 of the Eligible Generator Regulations list of eligible generating stations.

Biomass conversion stations were removed in 2021 given they were viewed as a transitional technology and the expectation was Power BECCS would be available for deployment when the support for biomass conversion stations ended in 2027. However, the deployment of Power BECCS is now unlikely to be before 2030. Therefore, if there was to be support for the transition of biomass electricity generation to power BECCS via a CfD we need to add Biomass conversion stations back into the list of eligible generating stations. We are therefore proposing to include biomass conversion stations as an eligible generating station.

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<sup>29</sup> [Energy Act 2013](#)

<sup>30</sup> [The Contracts for Difference \(Definition of Eligible Generator\) Regulations 2014](#)

**14. Do you have any comments on the proposed amendment to the definition of an eligible generator to specify that biomass conversion stations are an eligible generating station?**

We will consider further whether additional or other specific requirements may be required for auditing contracts issued under a potential transitional support arrangement, informed by the final policy design of any such support arrangement.

### Sustainability Criteria- Legislative amendments

For those awarded a CfD via a CfD Allocation Round there are standard terms (section 14 of the Energy Act 2013).<sup>31</sup> These standard terms can be revised (section 11 of the Energy Act 2013).<sup>32</sup> This includes the ability to revise any sustainability obligations set out in the standard terms. Regulation 18 of the Electricity Market Reform (General) Regulations 2014 (EMR regulations) enables the Secretary of State to issue a direction to LCCC (as the CfD counterparty) to modify existing contracts if a change has been made to the CfD sustainability criteria within the standard terms.<sup>33</sup>

If the CfD mechanism is selected it is intended that the Secretary of State would use the powers in Section 10 of the Energy Act 2013 to direct LCCC /the counterparty to offer a contract to any successful generators.<sup>34</sup> As part of the negotiations when considering terms, it will be explored whether a similar mechanism to Regulation 18 of the EMR Regs could apply i.e., to ensure updated sustainability objectives can be incorporated into a contract once its term has started. This may be done via a contractual provision or could be done via legislation. To ensure the latter remains an option we propose adding a regulation to the EMR regulations similar to the current Regulation 18, but which is in relation to any contract arising from a section 10 of the Energy Act 2013 direction. Any future amendments to sustainability criteria would need to reflect both the benefits of doing so and ensuring eligible generators could reasonably be expected to meet the subsequent changes.

**15. Do you agree with the government's proposal to enable the Secretary of State to issue a direction to a CfD counterparty to modify any section 10 contract to reflect updated sustainability objectives?**

In addition to the areas we have outlined above, we anticipate that some of the preferred policy options may require consequential changes to Contracts for Difference legislation made under the Energy Act 2013. For example, if the availability payment or regulated margin option is adopted it may be appropriate to amend the Contracts for Difference (Electricity Supplier Obligations) Regulations 2014 (the ESO Regulations) to reflect the different contract design. The ESO Regulations require licensed electricity suppliers to pay a contribution to the CFD counterparty which funds the CFD counterparty's payments to generators. The contribution is currently calculated with reference to the amount of electricity generated by a generating station, so this may need to be widened to include calculations based on the amount of low carbon generating capacity made available. Also, where existing legislation assumes a strike price/market reference price structure, alternative mechanisms may need to be reflected, for example in regulation 7 of the ESO Regulations, which deals with the CfD counterparty's estimate of the amount it will be required to pay to parties under CfDs. Some of these amendments may be captured by the proposed amendments suggested in the Carbon Capture

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<sup>31</sup> [Energy Act 2013, Section 14](#)

<sup>32</sup> [Energy Act 2013, Section 11](#)

<sup>33</sup> [The Electricity Market Reform \(General\) Regulations 2014](#)

<sup>34</sup> [Energy Act 2013, Section 10](#)

Usage and Storage: Amendment to Electricity Supplier Obligation Regulations consultation on the implementation of the Dispatchable Power Agreement business model. We will consider this when finalising the design for any transitional arrangements following consultation.

**16. Do you have any comments on the proposal to make amendments to Contracts for Difference legislation consequential to the design of the support mechanism?**

## Next Steps

This consultation will be open for 6 weeks and close on 29<sup>th</sup> February. Following the close of this consultation, we will analyse the responses, summarise the views expressed and set out final decisions in a government response. We will publish this on the GOV.UK website.

Following the consultation, the government will decide which, if any, support mechanism to continue to develop. If it is judged reasonable and necessary to introduce a mechanism to support biomass in the transition to power BECCS, the government will bring forward any necessary supporting legislation in 2024 to enable a potential mechanism to be established. Any such mechanism would be subject to value for money and affordability considerations. We anticipate that any negotiations with eligible generators will also take place in 2024.

We encourage any party who considers they may be eligible for transitional support as outlined in this consultation to contact us by 31<sup>st</sup> March 2024 at [transitionalsupport@energysecurity.gov.uk](mailto:transitionalsupport@energysecurity.gov.uk).

## Consultation questions

- 1. Do you think the government should intervene to create a support mechanism to help biomass generators transition to power BECCS?**
- 2. Do you agree with the success factors we have identified?**
- 3. Are there additional factors we should consider?**
- 4. Do you agree with the options above being included as preferred options? If no, please articulate why the option is not suitable and provide evidence where appropriate.**
- 5. Do you prefer one of the options as described above? If so, please provide your reasoning and any evidence to support.**
- 6. Do you have views on approaches we should consider as part of our options to ensure generators are not overcompensated?**
- 7. Do you have any material comments relating to the mechanics of each option or the outline evaluation as articulated? If so, please provide details.**
- 8. Do you agree that these options should be discounted and considered as non-preferred? If not, please provide rationale and any evidence.**
- 9. Do you agree with the eligibility criteria and assessment process set out? If no, how should they be adapted to be more suitable?**
- 10. During a transition period from biomass electricity to power BECCS, do you think that the GHG criteria should be strengthened? If so, how? Please provide evidence to support your views.**
- 11. As part of the proposed transitional support arrangements for large-scale biomass generators that plan to transition to power BECCS, do you think that we should increase the minimum percentage of woody biomass that must be obtained from a sustainable source? If so, what should be the minimum percentage be set at? Please provide evidence to support your views.**
- 12. Are there any additional sustainability criteria we should consider strengthening specifically as part of the proposed transitional support arrangements?**
- 13. Do you have any comments on the proposed amendment to the definition of an eligible generator to specify that generating stations which are already generating electricity are eligible generators?**
- 14. Do you have any comments on the proposed amendment to the definition of an eligible generator to specify that biomass conversion stations are an eligible generating station?**
- 15. Do you agree with the government's proposal to enable the Secretary of State to issue a direction to a CfD counterparty to modify any section 10 contract to reflect updated sustainability objectives?**



**16. Do you have any comments on the proposal to make amendments to Contracts for Difference legislation consequential to the design of the support mechanism?**

This consultation is available from: [www.gov.uk/government/consultations/transitional-support-mechanism-for-large-scale-biomass-electricity-generators](https://www.gov.uk/government/consultations/transitional-support-mechanism-for-large-scale-biomass-electricity-generators)

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