

Subsidy Advice Unit Report on the Low-Carbon Dispatchable Contracts for Difference to Drax Power Limited

**Referred by the Department for Energy Security
and Net Zero**

10 July 2025

Subsidy Advice Unit

Part of the Competition and Markets Authority



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CONTENTS

1. The Referral.....	3
Summary	3
The referred subsidy.....	5
2. The SAU's Evaluation.....	7
Step 1: Identifying the policy objective, ensuring it addresses a market failure or equity concern, and determining whether a subsidy is the right tool to use	7
Step 2: Ensuring that the subsidy is designed to create the right incentives for the beneficiary and bring about a change.....	9
Step 3: Considering the distortive impacts that the subsidy may have and keeping them as low as possible	12
Step 4: Carrying out the balancing exercise	16
Energy and Environment Principles.....	18
Other Requirements of the Act	23

1. The Referral

- 1.1 On 23 May 2025, the Department for Energy Security and Net Zero (DESNZ) requested a report from the Subsidy Advice Unit (the SAU)¹ in relation to its proposed Low-Carbon Dispatchable Contract for Difference to Drax Power Limited (Drax) (the Subsidy) under section 52 of the Subsidy Control Act 2022 (the Act).²
- 1.2 This report evaluates DESNZ's assessment of compliance (the Assessment) of the Subsidy with the requirements of Chapters 1 and 2 of Part 2 of the Act.³ It is based on the information and evidence included in the Assessment and relevant information submitted by third parties. The SAU received and considered fourteen third party submissions.
- 1.3 This report is provided as non-binding advice to DESNZ. It does not consider whether the Subsidy should be given or directly assess whether it complies with the subsidy control requirements.

Summary

- 1.4 The Assessment uses the four-step structure described in the Statutory Guidance for the United Kingdom Subsidy Control Regime (the [Statutory Guidance](#)) and as reflected in the SAU's Guidance on the operation of the subsidy control functions of the Subsidy Advice Unit (the [SAU Guidance](#)).
- 1.5 In our view, DESNZ has considered in detail some aspects of the compliance of the Subsidy with the subsidy control and energy and environment principles. In particular, the Assessment clearly:
- (a) describes the reliability of the electricity system as a public good as being a market failure that the Subsidy aims to remedy (Principle A);
 - (b) demonstrates that DESNZ has considered other ways of achieving the policy objective (Principle E);
 - (c) explains the change in economic behaviour that the Subsidy is expected to bring about, in particular how the Subsidy will incentivise Drax to produce electricity under conditions in which it would not do so without a Subsidy (Principle C).

¹ The SAU is part of the Competition and Markets Authority.

² [Referral of the proposed subsidy to Drax Power Limited by the Department for Energy Security and Net Zero - GOV.UK](#).

³ Chapter 1 of Part 2 of the Act requires a public authority to consider the subsidy control principles and energy and environment principles before deciding to give a subsidy. The public authority must not award the subsidy unless it is of the view that it is consistent with those principles. Chapter 2 of Part 2 of the Act prohibits the giving of certain kinds of subsidies and, in relation to certain other categories of subsidy creates a number of requirements with which public authorities must comply.

1.6 However, we have identified the following areas for improvement. The Assessment should:

- (a) ensure that its conclusions are supported by relevant evidence throughout and systematically refer to this evidence. This applies for instance to the statements that Drax expressed their intention to convert to power Bioenergy with Carbon Capture and Storage (power BECCS)⁴ and that biomass sourced sustainably is low-carbon;
- (b) articulate more clearly the specific policy objectives of the Subsidy, linking them directly to biomass electricity generation at Drax. If the possible transition to power BECCS forms part of a specific policy objective of the Subsidy, it should consistently consider this objective at each step. In relation to market failures, the Assessment should better describe the carbon emission externalities arising from the loss of a low-carbon, firm and flexible energy sources and from the loss of negative emissions⁵ through conversion to Power BECCS (Principle A);
- (c) explain and evidence why decommissioning is the most likely counterfactual, focusing on what the beneficiary would do absent the Subsidy (Principle C);
- (d) refer to contractual arrangements setting out performance requirements on sourcing biomass from sustainable sources and explain how these requirements will be enforced (Principle B);
- (e) further explain how the eligibility criteria set out at consultation phase (see paragraph 1.11) minimise distortions on competition. It should also more clearly describe the potential impact of the Subsidy on competition and investment on other low-carbon or semi-dispatchable technologies, smaller biomass generators and related markets such as fuel input markets (Principle F);
- (f) in the balancing exercise, only consider benefits that relate to the specific policy objectives identified under Step 1, and ensure that all negative impacts are considered, including those identified under Step 3. The Assessment should also explain in more detail why DESNZ concluded that benefits outweigh negative effects (Principle G); and

⁴ Power BECCS (Bioenergy with Carbon Capture and Storage) 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 plant material is captured after combustion and stored underground.

⁵ Negative carbon emissions, or negative emissions refer to a state where the amount of greenhouse gases removed from the atmosphere exceeds the amount emitted.

- (g) explain why the second limb of the Energy and Environment Principle A does not apply to the Subsidy consider the Energy and Environment Principle D and state whether CO2 emission limits are attached to the Subsidy.

- 1.7 We discuss these areas below, along with other issues, for consideration by DESNZ in finalising its assessment.
- 1.8 Some third party submissions argued that the SAU should block or reject the Subsidy. This does not reflect the SAU's role under the Act, which is to evaluate public authorities' assessments of compliance. DESNZ is responsible for deciding whether to grant the Subsidy, based on its assessment, having the benefit of this report.

The referred subsidy

- 1.9 The Subsidy supports the generation of electricity produced by Drax power station from biomass, an organic matter used as fuel for the generation of electricity. Drax power station, owned by Drax Power Limited, is located in Selby, North Yorkshire in England. It generates 2.6 GW of biomass electricity per year, currently contributing to around 5% of UK's annual electricity generation.ⁱ Until now, Drax has relied on existing government support under the Renewables Obligation⁶ and the Contracts for Difference (CfD) for renewable energy schemes to generate electricity competitively. However, this support is due to end on 31 March 2027.
- 1.10 The Subsidy consists of a variable top-up payment in the form of a CfD with Drax for a duration of four years, running from 1 April 2027 to 31 March 2031. The key features of the CfD are:
 - (a) The variable payment is calculated as the difference between an agreed strike price and an estimate of the market price for electricity, called the baseload market reference price (BMRP). The BMRP represents an average market price of electricity for the season, based on forward contracts traded before the season starts. The BMRP is calculated on a seasonal (winter and summer) basis and is fixed ahead of the season.
 - (b) If the BMRP falls below the agreed strike price, then the generator receives a top-up payment from a government owned counterparty, the Low Carbon Contracts Company Ltd (LCCC) for the difference. The CfD contains an Excess Returns Mechanism, that requires generators to pay a proportion of profits back above an agreed threshold when the BMRP exceeds the strike price.ⁱⁱ

⁶ For more information on the Renewables Obligations, see the [Renewables Obligations \(RO\) Guidance](#).

(c) The CfD includes a minimum and a maximum volume in megawatts (MW) that is eligible for the top-up payment. The Subsidy is capped to a maximum load factor of 27%, representing the ratio of average electricity produced by Drax across the year compared to its maximum capacity.

- 1.11 The Subsidy was awarded following a consultation held in January 2024 on whether transitional support should be provided for large-scale biomass generators. After consideration of consultation responses,⁷ DBT decided to progress a short-term support mechanism for large scale biomass generators.ⁱⁱⁱ DESNZ explained that the approach for this Subsidy may be expanded to other large-scale biomass plants subject to appropriate discussions. In the longer term, it is possible that such plants may be converted to BECCS facilities.
- 1.12 DESNZ explained that the proposed Subsidy is a Subsidy of Particular Interest (SoPI) because Drax will receive an estimated £470 million per year, for four years, starting from 1 April 2027 to 31 March 2031 which exceeds the £10 million threshold for a SoPI.

⁷ [Transitional support mechanism for large-scale biomass generators: consultation - government response](#)

2. The SAU's Evaluation

2.1 This section sets out our evaluation of the Assessment, following the four-step structure used by DESNZ.

Step 1: Identifying the policy objective, ensuring it addresses a market failure or equity concern, and determining whether a subsidy is the right tool to use

2.2 Under Step 1, public authorities should consider compliance of a subsidy with:

- (a) Principle A: Subsidies should pursue a specific policy objective in order to remedy an identified market failure or address an equity rationale (such as local or regional disadvantage, social difficulties or distributional concerns); and
- (b) Principle E: Subsidies should be an appropriate policy instrument for achieving their specific policy objective and that objective cannot be achieved through other, less distortive, means.⁸

Policy objectives

2.3 The Assessment states that the policy objectives of the Subsidy are:

- (a) to strengthen Great Britain's security of supply between 2027 and 2031 by providing low-carbon, dispatchable electricity to the grid, in turn supporting the clean power 2030 mission; and
- (b) to enable large-scale generators to remain operational during this period so as to potentially transition to power BECCS in future to support Carbon Budget 6.⁹

2.4 In our view, while the Assessment sets out and evidences the strategic policy objectives to which the Subsidy aims to contribute, it should state what its specific policy objectives are, linking them directly to biomass electricity generation at Drax. Further, if the possible transition to power BECCS forms part of a specific policy objective of the Subsidy, the Assessment should consistently consider this objective at each step.

⁸ See [Statutory Guidance](#), paragraphs 3.33–3.58 and the [SAU Guidance](#), paragraphs 4.7–4.11 for further detail.

⁹ Carbon Budget 6 sets the carbon budget for the sixth budgetary period (2033 – 2037), see [Carbon Budgets - GOV.UK](#)

Market failure

- 2.5 Market failures arise where market forces alone do not produce an efficient outcome. When this arises, businesses may make investments that are financially rational for themselves, but not socially desirable.¹⁰
- 2.6 The Assessment describes the following market failures:
- (a) Reliability of electricity system supply as a public good. The Assessment explains that reliability is non-excludable¹¹ because customers cannot choose their desired level of reliability. The National Energy System Operator (NESO) cannot selectively disconnect them. Further, consumers do not respond to real-time changes in the wholesale price and do not send signals to generators about the optimal level of reliability. As such, DESNZ states that capacity providers will not provide a socially optimal level of reliability in the absence of intervention.
 - (b) Carbon emission externalities of fossil fuel: The Assessment states fossil fuel electricity generation produces substantial greenhouse gas emissions. The Assessment explains that sustainably sourced biomass offers a low-carbon alternative to fossil fuel electricity, referencing the Government's clean power action plan,¹² and the positions held by the International Panel on Climate Change (IPCC) and the UK's Climate Change Committee (CCC). The Assessment states that the short-term implications of retiring plants like Drax will result in the loss of a low-carbon power source that could support energy systems at times of peak demand, helping address the intermittency issues associated with other renewables. It states sustainably sourced biomass generation produces less carbon than unabated gas (the most likely replacement for lost biomass generation).
 - (c) Carbon emission externalities of fossil fuel: the potential loss of negative emissions through conversion to power BECCS. The Assessment states that the most cost-effective option for delivering power BECCS in line with timescales for achieving Net Zero objectives could include converting existing biomass power plants to Carbon Capture Storage (CCS). The Assessment explains that, without intervention, it would not be financially viable for Drax to generate electricity in the meantime which would jeopardise power BECCS deployment and plans to deliver substantial negative emissions.
- 2.7 Some third parties contested that biomass is a low-carbon alternative while other third parties were supportive of the Subsidy because the UK's sustainability criteria for large-scale biomass generators are amongst the most robust globally. Further,

¹⁰ [Statutory Guidance](#), paragraphs 3.36–3.50.

¹¹ ie that a person cannot be prevented from consuming it.

¹² [Government's clean power action plan](#).

in relation to Drax's transition to power BECCS, some third parties submitted that the Subsidy offers a viable pathway to the transition to power BECCS, whilst others argued that such transition would not lead to negative emission and that any claim related to power BECCS would be premature and unsubstantiated.

- 2.8 In our view, the Assessment clearly describes reliability as a public good as being a market failure that the Subsidy aims to remedy. However, the Assessment should better describe the carbon emission externalities arising from the loss of a low-carbon, firm and flexible energy source and from the loss of negative carbon emission through conversion to Power BECCS, and link them back to the identified policy objectives, before explaining how the Subsidy will address them. The Assessment should also better reference supporting evidence to explain why it considers biomass electricity generation to be low-carbon (see also paragraph 2.55).

Appropriateness

- 2.9 Public authorities must determine whether a subsidy is the most appropriate instrument for achieving the policy objective. As part of this, they should consider other ways of addressing the market failure or equity issue.¹³
- 2.10 The Assessment explains that DESNZ has considered the following means to achieve the policy objective and details why they were discounted: regulation, loan, share acquisition, nationalisation, and procurement of alternative generation through the Capacity Market scheme.¹⁴
- 2.11 In our view, the Assessment demonstrates that DESNZ has considered other ways of achieving its policy objective at a high-level.

Step 2: Ensuring that the subsidy is designed to create the right incentives for the beneficiary and bring about a change

- 2.12 Under Step 2, public authorities should consider compliance of a subsidy with:
- (a) Principle C: Subsidies should be designed to bring about a change of economic behaviour of the beneficiary. That change should be something that would not happen without the subsidy and be conducive to achieving its specific policy objective; and
 - (b) Principle D: Subsidies should not normally compensate for the costs the beneficiary would have funded in the absence of any subsidy.¹⁵

¹³ [Statutory Guidance](#), paragraphs 3.56–3.58.

¹⁴ [Capacity Market - GOV.UK](#).

¹⁵ See [Statutory Guidance](#), paragraphs 3.59–3.73 and the [SAU Guidance](#), paragraphs 4.12–4.14 for further detail.

Counterfactual

- 2.13 In assessing the counterfactual, public authorities should consider what would likely happen in the future – over both the long and short term – if no subsidy were awarded (the ‘do nothing’ scenario).¹⁶
- 2.14 The Assessment considers multiple counterfactual scenarios where Drax plants could be mothballed (shut down and preserved), repurposed, or decommissioned (closed permanently). It states that DESNZ considers that the most likely counterfactual would be that the plants are decommissioned.
- 2.15 The Assessment explains that, in the chosen counterfactual, Drax would likely cease to participate in the generation of electricity from April 2027. The Assessment relies on historical and forecast data showing that Drax would be loss making under normal market conditions without a Subsidy.
- 2.16 The Assessment explains that, if Drax ceased to operate, it would be difficult to meet the policy objective of security of supply. Intermittent renewable deployment is unlikely to scale up to the required level in the timeframe considered for the Subsidy (2027 to 2031). Instead, unabated gas plants would likely fill the place of Drax in providing flexible generation, with additional gaps filled by interconnectors. The Assessment relies on a Dynamic Dispatch Model¹⁷ to support this conclusion.
- 2.17 The Assessment also explains that the closure of Drax could eliminate the option of future conversion of the biomass plants to power BECCS, thus limiting the range of technologies available to support the Net Zero objectives. Even short-term plant closures would result in the loss of biomass supply chain networks, making it challenging for plants to resume operations in time to support carbon targets.
- 2.18 In our view, while the Assessment describes well the alternative counterfactuals that it considered, it should explain and evidence why decommissioning is the most likely counterfactual. In that regard, the Assessment should focus on what the beneficiary would do absent the Subsidy before looking at implications for meeting security of supply and carbon targets. This could be done by referring to Drax’s internal documents and data.

¹⁶ [Statutory Guidance](#), paragraphs 3.62–3.64.

¹⁷ The Dynamic Dispatch Model is a power system model. This predicts when specific plants will generate, based on their relative costs and assumed future demand, and estimates the implied wholesale price. It also adds up the cost of policy support. These outputs are then added together to produce an estimate of the cost to consumers of the modelled scenario.

Changes in economic behaviour of the beneficiary and additionality

- 2.19 Subsidies must bring about something that would not have occurred without the subsidy.¹⁸ They should not be used to finance a project or activity that the beneficiary would have undertaken in a similar form, manner, and timeframe without the subsidy ('additionality').¹⁹
- 2.20 The Assessment explains that the CfD mechanism incentivises Drax to produce electricity under conditions in which they would otherwise not produce. The strike price agreed with Drax represents the price level that Drax requires to cover costs, including an allowed return. Drax is therefore commercially incentivised to generate electricity at strike price level, but not below (ie without the subsidy).
- 2.21 The Subsidy mechanism also incentivises Drax to produce electricity at times when the network need is high (as reflected in high prices). This is because:
- (a) The BMRP is calculated on a seasonal (winter and summer) basis. Over the course of the season, when the actual market price is lower than the BMRP, the top-up (as fixed for the season) would tend to be insufficient to reach the level that is profitable for Drax (i.e. the strike price). When the actual market price is higher than the BMRP, the top-up would tend to be more than sufficient to reach the level that is profitable for Drax (i.e. the strike price) and Drax will make more than their minimum required return (with returns limited by the Excess Returns Mechanism considered in paragraph 2.29(b)(iv)).^{iv}
 - (b) Combining this mechanism with the generation cap, the Subsidy incentivises Drax to concentrate its production at times when system need is high (when prices are high), and not when system need is low (when prices are low).
- 2.22 The Assessment explains that the Subsidy will not compensate for costs that Drax would be likely to have funded otherwise. It does this by using a "missing money" model to show that, absent the Subsidy, Drax's operations at its biomass plant would be loss-making and Drax would therefore not operate the plant. Drax would therefore not fund electricity generation, as it would not be operating.
- 2.23 Third parties have challenged whether the costs funded under the Subsidy would meet the additionality principle or whether they would be funded by Drax absent the Subsidy. They state that capital expenditure was previously funded and does not need new funding, that no new generation capacity will be created by the Subsidy, and that Drax had previously claimed it would not need continued subsidy after its existing agreement expired in 2027. DESNZ confirmed that the capital expenditure included in their Assessment relates to maintenance only.

¹⁸ [Statutory Guidance](#), paragraph 3.66.

¹⁹ [Statutory Guidance](#), paragraphs 3.65–3.69.

- 2.24 The Assessment also describes how the Subsidy design features support regular electricity generation from Drax through minimum output requirements. The Subsidy therefore ensures that Drax's output is available at times of system stress (see paragraph 2.35(a)). The Assessment explains that Drax will actively retain the biomass supply chain capacity needed to facilitate the transition to power BECCS. It states that Drax has expressed their intention to convert to power BECCS and that DESNZ considers that they have credible potential to do so.
- 2.25 In our view, the Assessment explains how the Subsidy would change the beneficiary's economic behaviour and that the Subsidy brings about changes that would not have occurred absent the Subsidy. The Assessment could further explore and explain why Drax's previous statement that it could operate without a Subsidy from 2027, as noted in third party comments, does not hold true anymore. It could also better evidence how the Subsidy affects the likelihood and feasibility of Drax's future transition to BECCS, as this is a policy objective of the Subsidy.

Step 3: Considering the distortive impacts that the subsidy may have and keeping them as low as possible

- 2.26 Under Step 3, public authorities should consider compliance of a subsidy with:
- (a) Principle B: Subsidies should be proportionate to their specific policy objective and limited to what is necessary to achieve it; and
 - (b) Principle F: Subsidies should be designed to achieve their specific policy objective while minimising any negative effects on competition or investment within the United Kingdom.²⁰

Proportionality

- 2.27 The Subsidy payment mechanism aims to secure sufficiently reliable low-carbon electricity supply in GB to meet future peak demand, taking account of NESO's forecasted UK electricity system capacity gap in the late 2020s. The Assessment states that the payment mechanism subsidises the operational cost of Drax to the minimum level necessary to achieve this aim.
- 2.28 The Assessment details, in line with the Statutory Guidance, certain aspects of the Subsidy that are relevant to proportionality, including the size of the subsidy, the nature of costs covered, timespan over which the subsidy is given, performance criteria and the nature of the instrument (comparing it with a range of subsidy options).

²⁰ See [Statutory Guidance](#) paragraphs 3.74–3.110 and the [SAU Guidance](#), paragraphs 4.15–4.19 for further detail.

- 2.29 The Assessment explains that the Subsidy is designed to:
- (a) Ensure that the right level of capacity is procured by setting a floor and a cap for seasonal generation levels.
 - (b) Avoid over-compensation or under-compensation by:
 - (i) ensuring the Subsidy top-up payment²¹ is adjusted to reflect recent market expectations of the price of electricity for the upcoming season (as set out in paragraph 2.21(a), the BMRP);
 - (ii) setting an appropriate margin, the level of which was informed by several external benchmarks and consideration of the assets' risk;
 - (iii) including several performance criteria within the contract conditions to support Drax's compliance with the terms of the CfD contract, with penalties in place in case of non-compliance. These conditions include verification of installed capacity and minimum and maximum generation levels. Further, the Heads of Terms contain sustainability requirements relating to the level of supply chain greenhouse gas emissions and the sourcing of biomass from sustainable sources;
 - (iv) setting an Excess Returns Mechanism, requiring a proportion of returns to be paid back to LCCC if total returns achieved by Drax across the 4-year term exceed certain thresholds.
 - (c) Reduce the risk of displacing cheaper low-carbon alternatives when these are abundant, thus contributing to ensuring the Subsidy is the minimum necessary to achieve sufficient reliability of supply of low-carbon energy (see paragraph 2.35 for further details).
- 2.30 Some third parties expressed concerns relating to the use of biomass generation to deliver low-carbon generation including the degree to which biomass fuel inputs are sustainably sourced and how enforcement of this aspect is affected by the accuracy and transparency of reporting.
- 2.31 In our view, the Assessment broadly demonstrates and evidences that the Subsidy is proportionate and limited to the minimum necessary to achieve its specific policy objectives, in line with the Statutory Guidance. However, the Assessment should refer to contractual arrangements setting out performance requirements on sourcing biomass from sustainable sources, and explain how these requirements will be enforced. The Assessment could also more clearly show how alternative instruments were discounted by more systematic and comprehensive presentation of information related to value for money and subsidy cost for each option

²¹ Applicable up to the generation cap.

considered, for example drawing on information contained in the business case. The Assessment could also provide more details on the design of the Excess Returns Mechanism and how this contributes to proportionality, in particular its reasoning for the chosen proportion to be returned by Drax and the threshold level(s) above which the proportion(s) apply.

Design of subsidy to minimise negative effects on competition and investment

- 2.32 The Assessment discusses several aspects of subsidy design mentioned in the Statutory Guidance in relation to minimising distortions, including the breadth of beneficiaries and selection process as well as elements listed in paragraph 2.28 above.
- 2.33 In relation to the breadth of beneficiaries, the Assessment acknowledges that: (i) Drax competes with other large-scale biomass operators who face similar challenges in selling their generated power at wholesale market prices; (ii) the Subsidy potentially gives Drax an economic advantage relative to generators who operate without revenue guarantees, thereby distorting competition. However, as set out above at paragraph 1.11, Drax was selected following objective eligibility criteria and other large biomass generators meeting the eligibility criteria²² were considered for support.
- 2.34 The Assessment also explains that, given the limited set of eligible suppliers, it was not possible to follow the typical bidding process for CfD auctions to deliver competitive pressure. DESNZ is therefore following a bilateral process with each eligible generator.
- 2.35 The Assessment sets out two broad aspects of Subsidy design that minimise the risk of biomass generation from Drax displacing (cheaper) low-carbon alternatives:
- (a) Use of NESO analysis and expectations of generation capacity of alternative technologies (see paragraph 2.27).
 - (b) Setting a cap on seasonal generation levels (see paragraph 2.29(a)), along with the use of the seasonal reference market price, ensures that Drax will be incentivised to sell power at times when power is most needed (typically peak demand at times when generation from cheaper renewable energy is limited). In particular, when the wholesale market price exceeds the reference market price, as this will maximise its revenue (Drax receives both the guaranteed revenue through the subsidy top-up mechanism and wholesale merchant revenue).

²² DESNZ clarified that, as set out in its [response to the consultation](#), small-scale biomass generators (below 100 MW) will not be eligible for support under this mechanism.

- 2.36 In our view, the Assessment broadly demonstrates and evidences how design features of the Subsidy contribute to minimising any negative effects of the Subsidy on competition and investment within the United Kingdom.
- 2.37 However, in relation to the selection criteria, the Assessment should explain in further detail how chosen eligibility criteria minimise distortions, in particular why it was appropriate to consider larger biomass generators only for financial support. For example, it could discuss: (i) information on the proportion of annual GB generation provided by smaller biomass generators; and/or (ii) qualitative information from public consultation (where available) relevant for assessing distortive impacts of the Subsidy, for example aspects of subsidy design that could materially impact the market power of the largest generators and affect the ability of the smallest biomass generators to compete.

Assessment of effects on competition or investment

- 2.38 The Assessment states that there is a limited pipeline of alternative semi-dispatchable generation options for meeting peak demand. It relies on evidence showing projected capacity from 2027 up to 2032/33), after accounting for the de-rated²³ capacity of alternatives like battery storage, interconnectors and nuclear.
- 2.39 The Assessment acknowledges that the Subsidy will lead to displacement of unabated gas electricity generation. However, it explains that the Subsidy has been designed to incentivise Drax to dispatch ahead of unabated generation in the merit order system, in line with the policy objective (in particular, the clean power 2030 action plan).
- 2.40 The Assessment states that in securing biomass capacity through the low-carbon dispatchable CfD, the government can reduce the Capacity Market's target capacity for auctions delivering in years 2027/28 to 2030/31 by 2.2 GW. This reduction in demand is expected to reduce the clearing price of the auction (resulting in a lower overall Capacity Market auction cost).
- 2.41 The Assessment identifies other related markets that may be impacted by the Subsidy, including input markets (supply, transportation and storage of wood pellets) and UK port services that process wood pellets sourced from other countries. It states the Subsidy would result in greater investment in port infrastructure and biomass-related logistics than would likely otherwise occur without support.
- 2.42 A third party submitted that the Subsidy grants a monopoly to Drax to supply the majority of low-carbon power from 2027 and, as a result, makes it less

²³ De-rated capacity margin measures the amount of excess supply above peak demand. De-rated capacity reflects the proportion of an electricity source which is likely to be technically available to generate at times of peak demand.

commercially viable for other biomass generators to continue to supply after 2027 when their current subsidies expire. In addition, several third parties stated that the Subsidy could have potential distortive impacts on competition and investment with regards to other technologies which may have lower impact on the climate.

- 2.43 Regarding the impact on international trade, the Assessment indicates potential impacts on electricity imported via interconnectors since, in the absence of the Subsidy, the capacity gap would likely be partly met through this source.
- 2.44 In our view, the Assessment broadly considers and evidences the effect of Subsidy on competition and investment. However, the Assessment should be clearer on the potential impact of the Subsidy on competition and investment with regards to the following:
- (a) Other technologies, including explaining in more detail (i) how the Subsidy may impact the incentive to invest in other alternative low-carbon and/or semi-dispatchable technologies; (ii) the extent to which the projected de-rated capacity gap (to be partly met by capacity from Drax) allows for head-room increase in capacity from other technologies like battery storage (i.e. limiting the potential impact of the Subsidy on other technologies); and (ii) how Subsidy design intersects with the merit order system²⁴ in the balancing market to set out the likelihood of Drax generation displacing other technologies (in the event of capacity from alternative technologies like batteries and long term energy storage is higher than currently projected).
 - (b) Smaller bio-mass generators, for instance including reference to DESNZ's consultation (see paragraph 1.11) to evidence impacts on competition and investment with regards to smaller generators.
 - (c) Related markets, in particular fuel input markets (stating clearly whether impacts are expected to be minimal).

Step 4: Carrying out the balancing exercise

- 2.45 Under step 4 (Principle G), public authorities should establish that the benefits of the subsidy (in relation to the specific policy objective) outweigh its negative effects, in particular negative effects on competition or investment within the United Kingdom and on international trade or investment.²⁵
- 2.46 The Assessment discusses the following benefits of the Subsidy:

²⁴ The merit order, in the context of electricity generation, is the sequence in which power plants are designated to deliver power, from cheapest to most expensive (ie the lowest cost technology is typically the first to provide power).

²⁵ See [Statutory Guidance](#), paragraphs 3.111–3.119 and the [SAU Guidance](#), paragraphs 4.20–4.22 for further detail.

- (a) a significant reduction in greenhouse gas emissions compared to the counterfactual of generating power by unabated gas. DESNZ estimates that (based on published government estimates for the social carbon value as set out in the Treasury Green Book) the social value of the savings in emissions is estimated to be around £300 to £400 million per annum²⁶ compared to the counterfactual of unabated gas generation;
- (b) reduced risks and costs of delivering security of supply by countering anticipated energy demand rises, whilst retaining the option for future power BECCS conversion; and
- (c) greater investment in port infrastructure and biomass-related logistics.²⁷

2.47 The Assessment also identifies some negative effects of the Subsidy, including:

- (a) increase in the underlying production costs of electricity;
- (b) potential negative impact on competition, international trade and investment as the Subsidy will increase the importation of biomass pellets and investment in biomass supply chains. It could also potentially create an uneven playing field with other forms of dispatchable power; and
- (c) environmental impact of biomass power generation on local air quality.

2.48 The Assessment concludes that the benefits of the Subsidy far outweigh its relatively limited drawbacks, and that displacement of unabated gas generation is consistent with government's clean power mission.

2.49 In our view, the Assessment sets out the expected benefits of the Subsidy as well as potential negative effects. However, the Assessment should only consider benefits that relate to the specific policy objective identified under Step 1.²⁸ It should also ensure that all negative impacts are considered, including those discussed under Step 3. The Assessment should explain in more detail why DESNZ concluded that benefits outweigh negative effects. It could for example draw on any cost-benefit analyses that have been carried out and / or any quantitative and qualitative information used to reach that conclusion.

²⁶ DESNZ clarified that imported emissions, such as those from international biomass supply chains, are not directly included in this analysis.

²⁷ The Assessment sets out that Drax operating at a maximum load factor of 27%, would generate approximately 6TWh, requiring about 3.3 million tonnes of pellets imported primarily from the US, Canada, and Baltic states.

²⁸ See [Statutory Guidance](#) paragraph 3.114.

Energy and Environment Principles

- 2.50 This section sets out our evaluation of the Assessment against the energy and environment principles.²⁹
- 2.51 DESNZ has conducted an assessment of the subsidy against Principles A, B C, E and H. Given the nature of Subsidy, the Assessment should further explain why Principle D is not applicable in this case.

Principle A: Aim of subsidies in relation to energy and environment

- 2.52 Subsidies in relation to energy or the environment should be aimed at (1) delivering a secure, affordable and sustainable energy system and a well-functioning and competitive energy market, or (2) increasing the level of environmental protection compared to the level that would be achieved in the absence of the subsidy. If a subsidy is in relation to both energy and environment, it should meet both limbs.³⁰
- 2.53 The Assessment assesses the Subsidy against the first limb of Principle A, relating to energy subsidies. It explains that the Subsidy will be aimed at delivering:
- (a) a secure energy system because it will retain Drax's electricity generation capacity of 2.6 GW from 2027 to 2031. The Assessment explains that the deployment other low-carbon options (such as Long Duration Electricity Storage (LDES), power CCUS and hydrogen-to-power) are unlikely to scale up to the required level in the timeframe. Relying on advice from NESO, the Assessment also notes that relying on alternative generation to fill the gap, including unabated gas, would present greater delivery risk. The Assessment also explains that Drax will be required to maintain its assets during the lifetime of the Subsidy, avoiding further reductions in the UK's near-term capacity margins and strengthening energy resilience;
 - (b) an affordable and sustainable energy system, as it significantly reduces the amount payable in subsidies to Drax compared to the existing support mechanism. It also notes that sustainable biomass generation is a renewable energy source that can provide low-carbon electricity to support the Government's decarbonisation objective. It states that through maintaining an existing plant, the government retains the supplementary option of the plant to be retrofitted to power BECCS in the future. The Assessment also explains that by supporting Drax to operate at a low load factor, DESNZ ensures that Drax is more reactive to price signals and is incentivised to run mainly at

²⁹ See Schedule 2 to the Act, and [Statutory Guidance](#), Chapter 4.

³⁰ [Statutory Guidance](#), paragraphs 4.19–4.28.

times when power is most needed (see paragraph 2.29(b)), therefore providing price support at times of high power prices; and

- (c) a well-functioning and competitive energy market as the seasonal cap and floor mean that Drax will play a limited role and will be required to dispatch electricity only at times when power is most needed.

2.54 We received the following relevant third party submissions:

- (a) Third parties challenged the convention of treating biomass as having zero emissions when burned and the assertion that loss of forest carbon stock for fuel stock and combustion is (instantly) replaced with forest carbon stock elsewhere in the global carbon cycle (because of the timescales over which this happens).
- (b) Third parties also referred to statements by the IPCC that the reason emissions from burning wood and other biomass are excluded from energy sector totals (ie treated as uncounted information) is to avoid them being counted twice (as they are assumed to be included in the Agriculture, Forestry and Other Land Use Sector).
- (c) Some third parties argued that the Subsidy would worsen emissions, and that the position on sustainability is arguably meaningless as costs relating to forests, climate and air quality are not taken into account.
- (d) Some third parties questioned DESNZ's ability to monitor whether Drax sources sustainable biomass.
- (e) Some third parties were positive about biomass in the UK, explaining that biomass is the UK's second biggest source of low-carbon electricity, provides essential and stable grid services, and noting that biomass complements variable renewables like wind and solar. They also noted that the UK has some of the world's most stringent sustainability criteria for biomass.

2.55 In our view, the Assessment provides a useful explanation on how the Subsidy complies with the first limb of Principle A. However, the Assessment should better reference supporting evidence to explain why it considers biomass electricity generation to be low-carbon when sourced from sustainable sources. For example, it could reference reports by the IPCC and CCC in support of biomass being a low-carbon energy source. In addition, as set out above at paragraph 2.31, the Assessment should better explain how the sustainability criteria imposed on Drax by the Subsidy are enforced.

2.56 The Assessment should also explain why DESNZ considers that the second limb of Principle A does not apply to the Subsidy.

Principle B: Beneficiary's liabilities as a polluter

- 2.57 Subsidies in relation to energy or the environment should not relieve the beneficiary from liabilities arising from its responsibilities as a polluter under the law of England and Wales, Scotland, or Northern Ireland.³¹
- 2.58 The Assessment sets out that the Subsidy does not relieve Drax from its duties and accompanying liabilities as a polluter, as any breaches of any environmental standards and regulations must be covered by the Drax and will not be covered by the Subsidy. The Assessment adds that the Subsidy requires Drax to comply with increased sustainability criteria including an increase from 70% to 100% of the proportion of the biomass that must be sustainably sourced. We consider that these points address a third party submission which appeared to argue that the Subsidy would relieve Drax from liabilities as a polluter.
- 2.59 In our view, the Assessment clearly explains and evidences how the Subsidy complies with Principle B of the Energy and Environment Principles. In accordance with paragraph 4.33 of the Statutory Guidance, DESNZ could include a clear statement in the terms of the Subsidy to the effect that the Subsidy does not relieve the recipient from any liabilities arising from its responsibilities as a polluter under the relevant laws of England and Wales, Scotland, and Northern Ireland.

Principle C: Subsidies for electricity generation adequacy, renewable energy, or cogeneration

- 2.60 Subsidies or schemes for electricity generation adequacy, renewable energy, or cogeneration should not undermine the UK's ability to ensure that wholesale electricity and natural gas prices reflect actual supply and demand, and that the wholesale electricity and natural gas market rules will, in general terms, be transparent, encourage free price formation, and operate in an efficient and secure manner.³² They should also not unnecessarily affect the efficient use of electricity interconnectors between the UK and the European Union. Finally, they should be determined by means of a transparent, non-discriminatory and effective competitive process, or, alternatively, an explanation should be provided for why a non-competitive process was used.³³
- 2.61 The Assessment sets out that all the criteria under Principle C are met because the Subsidy:
- (a) Does not undermine the ability of the UK to meet its obligations under Article 304 of the Trade and Cooperation Agreement. The Assessment explains that

³¹ [Statutory Guidance](#), paragraphs 4.29–4.34.

³² Article 304 of the [Trade and Cooperation Agreement](#) between the United Kingdom of Great Britain and Northern Ireland, of the one part, and the European Union and the European Atomic Energy Community, of the other part (TCA).

³³ [Statutory Guidance](#), paragraphs 4.36–4.44.

the Subsidy does not introduce any form of price controls that limits the buying and selling of electricity in the wholesale electricity market.

- (b) Does not curtail the efficient use of electricity interconnectors provided for under Article 311 of the Trade and Cooperation Agreement.

2.62 We received a third party submission that argued, in the context of E&E Principle C, that the Subsidy was not transparent. However, we note that the Assessment explains that DESNZ were unable to follow a typical competitive auction process as only a limited number of generators came forward that met the relevant eligibility criteria, and so DESNZ had to follow a bilateral process to explore separate contracts with each generator. The Assessment explains the different measures that were put in place to mitigate any risk of over-compensation to Drax, as explained under paragraph 2.29 in Step 3, including:

- (a) designing the Subsidy to ensure that Drax only generates when the system requires it to do so;
- (b) calculating the strike price and allowable profits based on historic and projected revenues from the two generators, cross-referenced against third party data for reliability and accuracy; and
- (c) adding an Excess Returns Mechanism to act as a backstop that requires generators to pay a proportion of profits back above an agreed threshold.

2.63 The Assessment notes that the expected annual profit that Drax will receive is designed to be below that of regulated monopolies and FTSE 100 (asset heavy businesses).

2.64 In our view, the Assessment clearly explains and evidences how the Subsidy complies with Principle C of the Energy and Environment Principles.

Principle D: Subsidies for electricity generation adequacy, renewable energy, or cogeneration

2.65 Principle D states that subsidies for electricity generation adequacy may be limited to installations not exceeding specified CO2 emission limits.

2.66 The Assessment does not discuss Principle D, but mentions under Step 4 that strict emission limits are specified within Drax's Environmental Permit issued by the Environmental Agency.

2.67 In our view, the Assessment should consider Principle D and state whether CO2 emission limits are attached to the Subsidy.

Principle E: Subsidies for renewable energy or cogeneration

- 2.68 Subsidies for renewable energy or cogeneration should not affect beneficiaries' obligations or opportunities to participate in electricity markets.³⁴
- 2.69 The Assessment notes that the Subsidy enables Drax to continue to participate in the wholesale electricity market, as well as other secondary market arrangements including the ancillary services market.
- 2.70 In our view, it is apparent from the Assessment how the Subsidy complies with Principle E of the Energy and Environment Principles. The Assessment could mention that nothing in the terms of the Subsidy relieves the recipient of the obligation or ability to participate in electricity markets (see paragraph 4.50 of the Statutory Guidance).

Principle H: Subsidies for the decarbonisation of emissions linked to industrial activities

- 2.71 Under Principle H, subsidies for the decarbonisation of emissions linked to industrial activities in the United Kingdom should achieve an overall reduction in greenhouse gas emissions, and reduce the emissions directly resulting from the industrial activities concerned. The assessment should identify clearly the relevant greenhouse gases (with reference to those identified as such in the Climate Change act), and the industrial activities (as described in the Act) responsible to those gases, and show that such emissions would be reduced compared to the situation absent the subsidy or scheme.
- 2.72 DESNZ conducted an assessment of the Subsidy against Principle H, and stated that the Subsidy is consistent with Principle H by achieving an overall reduction in greenhouse gas emissions by reducing the need for electricity generation from unabated gas. The Assessment explains that:
- (a) fossil fuel electricity (including unabated gas) produces significant greenhouse gas emissions, and the UK Government aspires to replace such emissions with renewables and low-carbon alternatives (one of which is biomass);
 - (b) accordingly, Drax will contribute reliable power to the system, while at the same time facilitating the decarbonisation of the power system as a result of its low-carbon value.
- 2.73 In our view the Assessment could better reference evidence in relation to the reduction of carbon emissions through the Subsidy, including those discussed under Step 4 (see paragraph 2.46(a)), which could also help address a third party

³⁴ [Statutory Guidance](#), paragraphs 4.48–4.51.

submission which argued that the Subsidy would never achieve an overall reduction in greenhouse gas emissions.

Other Requirements of the Act

2.74 DESNZ confirmed that no other requirements or prohibitions set out in Chapter 2 of Part 2 of the Act apply to the Subsidy.

10 July 2025

ⁱ Paragraph 1.9, third sentence should read: 'It has the capacity to generate 2.6 GW of biomass electricity per year, currently contributing to around 5% of UK's annual electricity generation.'

ⁱⁱ Paragraph 10(b), second sentence should read: 'The CfD contains an Excess Returns Mechanism, that requires generators to pay a proportion of profits back above an agreed threshold.'

ⁱⁱⁱ Paragraph 1.11, first and second sentence should read: 'A consultation was held in January 2024 on whether transitional support should be provided for large-scale biomass generators. After consideration of consultation responses, DESNZ decided to progress a short-term support mechanism for large scale biomass generators.'

^{iv} Paragraph 2.21(a) should read: 'The BMRP is calculated on a seasonal (winter and summer) basis. Over the course of the season, at those times when the actual market price is lower than the BMRP, the top-up per unit (as fixed for the season) would tend to be insufficient to reach the level that is profitable for Drax (i.e. the strike price). When the actual market price is higher than the BMRP, the top-up per unit would tend to be more than sufficient to reach the level that is profitable for Drax (i.e. the strike price) and Drax will make more than their minimum required return on those units (with overall returns subject to seasonal price fluctuations and limited by the Excess Returns Mechanism considered in paragraph 2.29(b)(iv)).'