Subsidy Advice Unit Report on Contracts for Difference (AR6/2024)

Referred by the Department for Energy Security and Net Zero

21 February 2024

Subsidy Advice Unit

Part of the Competition and Markets Authority

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1. Introduction

1.1 This report is an evaluation prepared by the Subsidy Advice Unit (SAU), part of the Competition and Markets Authority, under section 53 of the Subsidy Control Act 2022 (the Act).

1.2 The SAU has evaluated the Department for Energy Security and Net Zero (DESNZ)'s assessment of compliance of the Contracts for Difference for Renewables (CfD) scheme, as at Allocation Round 6 (AR6) (the Scheme), with the requirements of Chapters 1 and 2 of Part 2 of the Act (the Assessment).[1]

1.3 This report is based on the information provided to the SAU by DESNZ in its Assessment. We received one third party submission.

1.4 This report is provided as non-binding advice to DESNZ. The purpose of the SAU's report is not to make a recommendation on whether the scheme should be implemented, or directly assess whether it complies with the subsidy control requirements. DESNZ is ultimately responsible for making the scheme, based on its own assessment, having the benefit of the SAU's evaluation.

1.5 A summary of our observations is set out at section 2 of this report.

The referred scheme/subsidy

1.6 The CfD scheme has existed since 2014 and aims to encourage low carbon electricity generation. CfD contracts are long-term (15-year) contracts between a low carbon electricity generator and the CfD counterparty - the Low Carbon Contracts Company (LCCC). The Scheme is the latest round of the CfD scheme, the sixth allocation round (AR6). It is planned to open to applications in March 2024.

1.7 CfD contracts are typically awarded through a competitive allocation round,[2] where companies submit bids and the lowest bids are accepted until the overall budget for the allocation round is reached.

1.8 Under the Scheme, the generator sells the electricity at a variable market price. When the reference price (a proxy of the wholesale electricity price) is below the strike price agreed in the CfD contract, the generator receives a top-up payment from LCCC for the difference (funded by a levy on electricity suppliers).[3] When the

[1] 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.
[2] There have been five completed allocation rounds (AR1 to AR5) since inception.
[3] However, no top-up is paid while wholesale prices are negative.

reference price is above the strike price, the generator must pay back the difference to LCCC.

1.9 The Scheme is open to application from any existing or future eligible renewable generating station in Great Britain. Eligible electricity generating technologies include advanced conversion technologies, anaerobic digestion, dedicated biomass with combined heat and power, floating offshore wind, geothermal, hydro, landfill gas, offshore wind, onshore wind, remote island wind, sewage gas, solar photovoltaic, tidal stream, and wave. These technologies must meet certain size and type requirements to be eligible for the CfD scheme.

1.10 Before each allocation round, DESNZ sets a maximum price for each eligible technology that a project can receive for generating electricity, which is called the administrative strike price. DESNZ sets these maximum prices based on cost information for the technology. For AR6, auction parameters, including the administrative strike prices, were published on 16 November 2023, alongside the pot structure[4] and delivery years.[5] The (actual) strike price for each technology is set at the level of the final accepted bid in the competitive auction, and must be less than or equal to the administrative strike price for that technology.

1.11 Before each allocation round, the Secretary of State must issue a budget notice specifying the overall budget available for each delivery year applicable to the allocation round and the administrative strike prices.[6] As an indication, the estimated total subsidy amount for AR4 was £15 billion and for AR5 it was £5 billion, though the estimated total subsidy amount for AR6 may be lower or higher than these figures.[7]

1.12 Two significant changes have been made to the existing Scheme for AR6, following consultation:[8]

(a) Making generators that directly supply offshore oil and gas facilities ineligible for the Private Network CfD agreement (the AR6 Private Network CfD agreement).[9] Under the North Sea Transition Deal, the offshore oil and gas sector agreed to emission reduction targets, with one key feature of some electrification designs being electricity supplied from nearby windfarms.

[4] The pot structure is the separation of different eligible technologies into different groups for the competitive allocation. Technologies compete in "Pot" groupings, each Pot has its own auction and clearing price.
[5] The delivery years, for each pot, are the years when a project in that pot can start receiving payments under its CfD contract.
[6] The Contracts for Difference (Allocation) Regulations 2014 (legislation.gov.uk)
[7] DESNZ explained that these estimates are highly uncertain as actual payments will depend on market wholesale prices at the time and how much electricity each project generates.
[8] Considerations for future Contracts for Difference (CfD) rounds - GOV.UK (www.gov.uk)
[9] A Private Network CfD Agreement is a type of CfD agreement which allows a generator to receive CfD payments for electricity supplied via a private network, which is a network for the distribution of electricity which is not operated by a licensed distributor. More information about Private Network CfD agreements is set out in the consultation Considerations for future Contracts for Difference (CfD) rounds - GOV.UK (www.gov.uk)

DESNZ submitted that the purpose of this change is to prevent consumers from subsidising this electricity, that can reasonably be expected to be covered through other means. According to DESNZ, this will help to ensure that the Scheme continues to offer value for money for consumers.

(b) Moving back to a three-pot structure for the auctions, re-introducing a separate technology group for offshore wind[10] (the AR6 Pot Structure).[11] DESNZ submitted this change aims to better support the deployment of offshore wind, whilst still encouraging continuing deployment of a range of eligible technologies and driving value for money for consumers.

1.13 The AR6 Assessment sets out that both changes were consulted upon and respondents supported the proposals. DESNZ provided a range of internal decision-making documents or analysis to support its analysis regarding the rationale for the changes at AR6.

SAU referral process

1.14 On 6 January 2023, the Department for Business, Energy & Industrial Strategy (BEIS) referred the CfD scheme as at AR5. On 7 February 2023, responsibility for the CfD scheme was transferred to DESNZ. On 22 February 2023, the SAU published a report evaluating the assessment of compliance submitted by BEIS for AR5 (the AR5 Report).

1.15 On 5 January 2024, DESNZ requested a report from the SAU in relation to the Scheme as at AR6.

1.16 The Assessment includes four documents: (i) the assessment for AR6, which focuses on the changes for AR6 and makes reference to the other documents (the AR6 Assessment), (ii) the assessment for AR6 against the energy and environment principles, (iii) a copy of the AR5 Assessment, and (iv) a document that provides responses to the AR5 Report (the Supplementary Note). Together these documents are referred to as the Assessment.

1.17 DESNZ has set out that in its view the changes to the Scheme for AR6 are mostly minor or technical changes. As a result of this, DESNZ said that the AR5 Assessment 'remains our assessment of the Scheme on which we rely for AR6, except where this is amended in the body of the AR6 Assessment' or where it is supplemented in the Supplementary Note.

[10] The CfD had previously moved to a two-pot structure for AR5.
[11] Under AR6, pot 1 will include energy from waste with combined heat and power, hydro, landfill gas, onshore wind, remote island wind, sewage gas and solar photovoltaic. Pot 2 will include advanced conversion technologies, anaerobic digestion, dedicated biomass with combined heat and power, floating offshore wind, geothermal, tidal stream and wave. Pot 3 will include offshore wind.

1.18 DESNZ explained that the Scheme is a Subsidy Scheme of Particular Interest because it allows for the provision of one or more Subsidies of Particular Interest to be given.[12] DESNZ set out that while the total amount that will be awarded over the applicable period is hard to quantify due to the variable nature of payments under the Scheme, in most cases the subsidy is likely to exceed £10 million over the lifetime of the contract.

1.19 The SAU notified DESNZ on 11 January 2024 that it would prepare and publish a report within 30 working days (ie on or before 21 February 2024).[13] The SAU published details of the referral on 11 January 2024.[14]

1.20 Under Section 81 (1) of the Act, the modification of a scheme is to be treated for the purposes of the Act as the making of a new scheme for the purposes of the application of the subsidy control requirements. As a result, this report relates to the Scheme as a whole.

[12] Within the meaning of regulation 3 of The Subsidy Control (Subsidies and Schemes of Interest or Particular Interest) Regulations 2022 which sets out the conditions under which a subsidy or scheme is considered to be of particular interest.

[13] Sections 53(1) and 53(2) of the Act.

[14] Referral of the proposed subsidy scheme, the Contracts for Difference for Renewables (as at Allocation Round 6), by the Department for Energy Security and Net Zero - GOV.UK (www.gov.uk)

2. Summary of the SAU's observations

2.1 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).

2.2 This report repeats those observations made in our AR5 Report that are still relevant to this evaluation. Reasons for differences between observations made in this report and in the AR5 Report include reflecting new material that was provided with the Assessment, reflecting changes that were made in AR6 and streamlining certain sections of the evaluation.

2.3 Overall, we note that DESNZ has taken into account the SAU's evaluation set out in the AR5 Report when producing the Assessment. In some areas, DESNZ was able to clarify its AR5 Assessment, for instance in relation to market failures or the impact of the Scheme on non-renewable generators. In other areas, DESNZ provided additional evidence. For instance, in order to show the impact of the CfD Scheme in comparison to the counterfactual, the Assessment provides statistics on the changing proportion of the UK electricity generation mix provided by renewables over time and an overview of electricity generation from CfD projects awarded in AR1 and AR2. Furthermore, DESNZ was able to quantify some of the benefits of the Scheme against some (but not necessarily all) policy objectives.

2.4 As set out in our AR5 Report, some aspects of the Assessment are well articulated, including the policy objectives and related market failures for the Scheme. In addition, in relation to minimising distortions (Step 3), the Assessment usefully identifies various aspects of the Scheme which are relevant to limiting the subsidy to the amount necessary, and limiting the scope for over-compensation. DESNZ further provided some underlying evidence in support of the changes in AR6, including some internal decision-making documents and analysis.

2.5 However, the Assessment would be strengthened if DESNZ had:

(a) Consolidated the Assessment which is currently spread across four documents (see paragraph 1.16) into one main document in order to ensure that the Assessment is as clear as possible. For instance, the AR5 Assessment explains the reasons for the auctions moving to a two-pot structure, whilst AR6 Assessment focuses on moving back to a three pot-structure. It is therefore unclear which parts of the AR5 Assessment are still relevant to the Scheme as of AR6.

(b) Throughout the Assessment, supported certain statements through the use, in a commensurate manner, of up-to-date evidence. Whilst we note DESNZ's explanation that up-to-date evidence is limited due to the historical nature of the CfD scheme and that a more substantive review of the CfD scheme is being undertaken under REMA, it remains a weakness of the Assessment, as set out in our AR5 Report, that some statements rely on evidence that is several years old.

(c) In relation to Principle E, provided more thorough discussions of alternative policy levers, particularly those considered at the start of the CfD scheme to the extent they are still relevant.

(d) In relation to Principle F, provided a more systematic evaluation of market characteristics and effects on competition or investment as envisaged in the relevant guidance;

(e) In relation to Principle G, more systematically identified and evaluated the benefits of the Scheme against all policy objectives set out under Principle A, as well as the negative impacts.

2.6 Our report is advisory only and does not directly assess whether the Scheme complies with the subsidy control requirements, nor is its purpose to make a recommendation on whether the Scheme should continue to be implemented. We have not considered it necessary to provide any advice about how the proposed Scheme may be modified to ensure compliance with the subsidy control requirements.

3. The SAU's evaluation

3.1 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

3.2 The first step involves an evaluation of the Assessment against:

(a) Principle A: Subsidies should pursue a specific policy objective in order to (a) remedy an identified market failure or (b) 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.[15]

Policy objectives

3.3 The AR5 Assessment identifies the objective of the Scheme to be to encourage low-carbon electricity generation, whilst having regard to carbon targets and budgets (under the Climate Change Act 2008), ensuring security of supply to consumers of electricity, and the likely cost to consumers of electricity.

3.4 The Supplementary Note further explains how aspects of the Scheme, such as the two-way variable payment, allocation by competitive auction, the pot structure, and other design aspects are all intended to achieve the policy objective.

3.5 The AR6 Assessment sets out that the changes which are being made to the Scheme for AR6, and set out above in paragraph 1.12, are intended to support the policy objective.

3.6 In our view, the relevant policy objective is clearly set out. Some more recent public documents provided by DESNZ alongside the Assessment confirm that the Government's policies remain consistent with the objective even though policies have evolved since the CfD scheme was originally set up in 2014.[16] The information in the Supplementary Note explains clearly how aspects of the

[15] Further information about the Principles A and E can be found in the Statutory Guidance (paragraphs 3.18 to 3.42) and the SAU Guidance (paragraphs 4.7 to 4.11).

[16] For example the REMA consultation: BEIS, Review of Electricity Market Arrangements, consultation document of 18 July 2022, chapter 1.

Scheme's design are linked to the policy objective; and the explanation of how the proposed changes for AR6 are consistent with the policy objective is clear.

3.7 When explaining how elements of the Scheme's design are linked to the policy objectives, the Supplementary Note refers to diversity of generation technologies as an objective, linking it to security of supply. Diversity of supply is also set out as one of the market failures the Scheme seeks to address. The Assessment could set out more explicitly whether diversity of generation technologies is a policy objective or how diversity of generation technologies is linked to the objective of security of supply.

Market failure

3.8 The Statutory Guidance sets out that market failure occurs where market forces alone do not produce an efficient outcome.[17]

3.9 The Supplementary Note sets out five market failure arguments:

(a) Carbon emission externalities of fossil fuel: the market itself would not lower the production of greenhouse gases linked to fossil fuel combustion.

(b) Positive externalities leading to under provision of security of supply: electricity generators cannot monetise or internalise the wider social benefits provided by security of supply, leading to lower than socially optimal levels of security of supply delivered.

(c) Positive externalities leading to under provision of diversity of supply: individual producers will likely not internalise wider benefits of avoiding over-reliance on certain technologies, leading to an under provision of diversity of energy supply.

(d) Positive externalities leading to insufficient incentives to achieve the learning benefits of deploying first of a kind and immature technologies: such projects cannot internalise the wider learning and innovation effects associated with their deployment, leading to below socially optimal deployment levels.

(e) Financial market failures which restrict funds available to energy infrastructure projects: existence of a market failure due to capacity constraints and a resulting funding gap as there is uncertainty and asymmetric information as regards risk between capital providers and low-carbon projects.

[17] Statutory Guidance, paragraphs 3.21-3.32.

3.10 The Supplementary Note further outlines that the provision of security of supply of electricity is primarily addressed by the Capacity Market, and that the CfD scheme is primarily to encourage new low-carbon electricity generation in Great Britain.

3.11 The Supplementary Note provides additional explanations for how the design of the Scheme links to the market failures that it seeks to address. For instance, it sets out that offering a CfD scheme to new and emerging renewable technologies could open pathways for such technologies to be provided by the market in future.

3.12 Overall, we consider that the Assessment appropriately addresses the market failures arguments. Some of the market failure justifications for intervention, particularly the carbon emission externalities of fossil fuel, are well established. The positive externalities in relation to security of supply, diversity of supply and developing immature technologies also correspond clearly to the descriptions of categories of market failure set out in the Statutory Guidance.[18]

3.13 The Assessment would have been strengthened by a clearer explanation of how the CfD scheme addresses the security of supply market failure. As drafted, the Assessment does not explicitly define security of supply. The AR5 Assessment as well as the Supplementary Note appear to frame security of supply as ensuring sufficient capacity exists in the electricity network, in turn safeguarding against outages and providing reliability. However, this is not explicitly stated in either document. Consequently, the Assessment could be improved by setting out more clearly what aspects of security of supply the Scheme targets.

Consideration of alternative policy options and why the Scheme is the most appropriate and least distortive instrument

3.14 In order to comply with Principle E, public authorities should consider why the decision to give a subsidy is the most appropriate instrument for addressing the identified policy objective, and why other means are not appropriate for achieving the identified policy objective.[19]

3.15 The AR5 Assessment establishes the Scheme's core objective of encouraging low-carbon electricity generation while considering carbon targets and budgets, ensuring secure electricity supply for consumers and minimising cost impacts.

3.16 It sets out that, in the absence of the Scheme, decarbonisation objectives would not be met because the majority of renewable energy projects would be unlikely to be financially viable. It reports that modelling suggests that renewable energy projects would not be deployed at the required scale and pace necessary to support the Government's 2050 Net Zero emissions targets. Overall, the need for

[18] Statutory Guidance, Paragraphs 3.35-3.46.
[19] Statutory Guidance, paragraphs 3.40-3.41.

intervention has been reasonably identified and evidenced throughout the Assessment.

3.17 The AR5 Assessment describes why the Scheme was considered the most appropriate and least distortive instrument among several options. The following evidence is presented and discussed:

(a) An emissions performance standard[20] (restricting high carbon generation) and carbon price support[21] were discounted as stand-alone options[22] to support renewable electricity as they were judged potentially to result in excessive rents to low-carbon generators without significantly affecting barriers to entry and were not considered robust enough to accommodate the possibility of declining average wholesale prices in the future.

(b) Fixed payments were discounted as they would not retain the link to the electricity price, resulting in additional costs as generators would not be fully exposed to long-term electricity price risk. This is evidenced in the 2010 Electricity Market Reform impact assessment.[23]

3.18 The Supplementary Note explains that the availability of up-to-date information is limited due to the historical nature of the Scheme. DESNZ explains that it did not consider it commensurate to the scale of changes to commission new work and evidence to strengthen its assessment in relation to historical aspects of the Scheme.

3.19 The Supplementary Note also explains that no new policy options had emerged prior to the AR5 Assessment. In response to the AR5 Report, the Supplementary Note describes some of the options discussed in the 2022 Review of Electricity Market Arrangements (REMA) consultation,[24] including a supplier obligation model[25] and variants to the CfD. It sets out that, while REMA is considering options for the medium and longer term, this work is at a relatively early stage. The government response to this consultation sets out that no further work would be done on a supplier obligation model, but further work would be undertaken on the other options.

3.20 The AR6 Assessment sets out that alternative forms of the CfD suggested by the independent Offshore Wind Acceleration Taskforce had been considered prior to

[20] Defined as 'a regulatory limit on the amount of carbon dioxide released into the atmosphere from a source (or sources) of electricity generation' in the consultation on Electricity market reform - GOV.UK (www.gov.uk).
[21] Defined as the climate change levy and fuel duty levy being levied on all fossil fuels used in the UK to generate electricity in the consultation Carbon price floor: support and certainty for low-carbon investment - GOV.UK (www.gov.uk)
[22] We note that these two measures were subsequently introduced in addition to the CfD.
[23] Electricity market reform - GOV.UK (www.gov.uk)
[24] Review of electricity market arrangements - GOV.UK (www.gov.uk)
[25] Defined as an obligation on electricity suppliers to procure green electricity directly on behalf of their consumers. The government would set a trajectory of maximum carbon intensity of electricity that electricity suppliers can sell to their consumers and suppliers would contract either directly with generators or through an intermediary in the 2022 consultation Review of electricity market arrangements - GOV.UK (www.gov.uk)

AR6, but had been discounted due to an increased risk of providing worse value for money to electricity consumers. It also sets out that smaller changes to the CfD proposed by the Offshore Wind Acceleration Taskforce were not deemed to be implementable by AR6 and are being considered for future rounds.

3.21 The AR6 Assessment explains that the change to eligibility for AR6 Private Network CfDs reflects the fact that there are more appropriate arrangements for financing the decarbonisation of offshore oil and gas facilities. It also explains that the change to the Pot Structure was the most appropriate and least distortive option for AR6.

3.22 As set out in the AR5 Report, we note that the 2010 alternatives considered at the start of the CfD scheme are presented at a high level without updated contemporary analysis or an explanation as to why these are still relevant.

3.23 Some options for amending the CfD are discussed in the Assessment (see paragraphs 3.19 and 3.20). However:

(a) Some options do not represent separate policy options, but instead alternative designs for the Scheme.

(b) One recent alternative policy option, a supplier obligation model, is mentioned as having been considered and discounted, but no explanation is given as to why. The Assessment could have discussed why it has been discounted as a policy option.

3.24 In conclusion, while we note DESNZ's position in relation to the lack of contemporary evidence, it remains the case that, as noted in the AR5 report, the Assessment would benefit from providing more thorough discussions of alternative policy levers, particularly those considered at the start of the CfD scheme to the extent they are still relevant.

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

3.25 The second step involves an evaluation of the assessment against:

(a) Principle C: First, subsidies should be designed to bring about a change of economic behaviour of the beneficiary. Second, that change, in relation to a subsidy, should be conducive to achieving its specific policy objective, and something that would not happen without the subsidy; and

(b) Principle D: Subsidies should not normally compensate for the costs the beneficiary would have funded in the absence of any subsidy.[26]

Counterfactual assessment

3.26 In assessing the counterfactual, the Statutory Guidance explains that public authorities should assess any change against a baseline of what would happen in the absence of the subsidy (the 'do nothing' scenario').[27] This baseline would not necessarily be the current 'as is' situation (the 'status quo') but what would likely happen in the future – over both the long and short term – if no subsidy were awarded.

3.27 The AR5 Assessment sets out that in the absence of the Scheme, decarbonisation objectives would not be met because without subsidy, the majority of projects would be unlikely to be financially viable. Without the subsidy support of the CfD scheme, generators would face the risk of volatile prices and so higher financing costs. The 2021 Call for Evidence[28] provides anecdotal evidence of respondents believing that some form of government intervention was required to stimulate the level of investment required in low carbon electricity generation. The primary reason for this was that investors do not deem the wholesale market investable due to future price risk, price volatility, the likelihood of more frequent occurrences of price cannibalisation and the lack of mitigations to protect investors from these risks.

3.28 Furthermore, the AR5 Assessment states that recent modelling as part of the REMA consultation reiterated the conclusion that the high up-front costs of renewables combined with expected price volatility meant that intervention was required to support the scale and pace of deployment needed to decarbonise the power sector. DESNZ submitted that this was supported by the results of its in-house Dynamic Dispatch Model (DDM) (a fully integrated power market model covering the Great Britain power market over the medium to long term)[29] which suggested the risk factors undermining the investment decisions would persist without subsidy. However, in response to the AR5 Report, the Supplementary Note explains that given the DDM's assumptions and construction, a counterfactual without subsidy is not possible using current modelling.

3.29 As noted in the AR5 Report, the Assessment identified good qualitative evidence that, without the subsidy, the financial viability for renewable energy generators is limited.

[26] Further information about the Principles C and D can be found in the Statutory Guidance (paragraphs 3.43 to 3.57) and the SAU Guidance (paragraphs 4.12 to 4.14).
[27] Statutory Guidance, paragraphs 3.46-3.47.
[28] Enabling a High Renewable, Net Zero Electricity System: Call for Evidence - government response (publishing.service.gov.uk)
[29] See DECC report (publishing.service.gov.uk)

3.30 We also remain of the view, as noted in the AR5 Report, that the Assessment does not set out in detail what would happen in the absence of the subsidy. We note DESNZ's explanation, set out in paragraph 3.28, that it is not possible to provide this information based on current modelling, and that it is difficult to envisage and model a scenario without support for renewables.

Changes in economic behaviour of the beneficiary

3.31 The Statutory Guidance sets out that subsidies must bring about something that would not have occurred without the subsidy.[30] In demonstrating this, public authorities should consider the likely change or additional net benefit.

3.32 The AR5 Assessment sets out how the CfD scheme provides an incentive to invest in building low-carbon generation by providing medium term price stability through 15-year contracts, and driving beneficiaries to deploy projects that would probably otherwise be unviable in the near-term, in support of the Government's specific policy objective. The AR5 Assessment includes qualitative evidence in support of this view, including interviews of market participants for the 2018-21 evaluation of the CfD scheme, which set out that the CfD has encouraged private finance.[31] Further, the REMA 2022 Consultation document states that 'the CfD scheme has helped to dramatically reduce costs by providing investors with stability.'[32]

3.33 In our view, as set out in the AR5 Report, the Assessment sets out positive qualitative evidence supporting the change of economic behaviour brought about by the CfD scheme. There is also good evidence and explanation to support the view that the CfD scheme as modified for AR6 will bring about a change of behaviour, in particular that the new pot structure should encourage development of offshore wind generation without a risk of overcompensating other technologies.

Additionality assessment

3.34 According to the Statutory Guidance, 'additionality' means that subsidies 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.[33] For schemes, public authorities should also, where possible and reasonable, ensure the scheme's design can identify in advance and exclude those beneficiaries which it can be reasonably determined would likely proceed without subsidy.[34]

[30] Statutory Guidance, paragraph 3.50.
[31] BEIS, Evaluation of the Contracts for Difference scheme see page 30 of final report, phase 3
[32] Review of Electricity Market Arrangements (publishing.service.gov.uk)
[33] Statutory Guidance, paragraphs 3.49-3.53.
[34] Statutory Guidance, paragraph 3.55

3.35 The AR5 Assessment identifies that there are several design features of the CfD scheme aimed at ensuring that the subsidy brings about additional benefits from beneficiaries and does not compensate for costs that may have been borne anyway:

(a) CfD payments are not made where a project has commenced generation prior to an application for support.

(b) Proposed contract terms to prevent delay to start dates, intended to ensure that generators enter into their CfD contract in a timely manner after generation commences and do not avoid difference payments when wholesale prices are high (ie do not avoid payments back to the LCCC).

(c) The CfD scheme does not allow generators to cumulate a CfD subsidy with any other subsidies granted in respect of the same eligible project costs.

3.36 DESNZ explained that these specific features of the CfD scheme are designed to ensure that the CfD is not subsidising costs that beneficiaries may have otherwise borne and to ensure that benefits accrued under the scheme are additional.

3.37 As mentioned in the sections above, DESNZ set out in its Assessment that, without subsidy, a proportion of projects would be unlikely to be financially viable.

3.38 In terms of modifications for AR6, the AR6 Assessment sets out how the changes to AR6 are intended to ensure that the Scheme does not compensate for costs that might reasonably be expected to be covered through other means in the absence of this support (see paragraph 3.46).

3.39 We consider that DESNZ has set out how the features of the Scheme are significant factors in ensuring that the CfD is not subsidising costs that beneficiaries may have otherwise borne.

3.40 While the Assessment does not present a detailed counterfactual and does not seek to quantify whether any development of renewables capacity would proceed absent support, the Assessment sets out qualitatively that some projects would be unlikely to proceed. Moreover, the Assessment explains well, with supporting evidence, how the changes to AR6 aim to avoid subsidising costs that would have been incurred anyway.

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

3.41 The third step involves an evaluation of the assessment against:

(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.[35]

Proportionality

3.42 The AR5 Assessment explains that subsidy awards are made through a transparent and non-discriminatory competitive process. This involves auctions with lowest bids accepted, supplemented by administrative strike prices based on robust cost information. Subsidy payments are only made when reference prices are below the strike price, and generators must pay back when reference prices rise above the strike price.

3.43 With respect to proportionality more generally, points identified in the AR5 Assessment and that we consider relevant include:

(a) Payments are not made when wholesale prices are negative.

(b) There are conditions to prevent cumulation of subsidies for the same projects.

(c) Auction parameters, including the budget, will be set with the aim of supporting renewable deployment ambitions, and fostering competition to ensure value for money for consumers.

3.44 The AR5 Assessment also submits that an evaluation of the CfD scheme found that, compared to the Renewables Obligation scheme, the CfD scheme is meeting its aim of supporting increased supply of renewable energy, whilst delivering value for money for consumers. The evaluation estimated consumer cost reductions due to CfD auctions in the first three allocation rounds of around £3 billion compared to supporting the same projects under the Renewables Obligation scheme.[36]

3.45 The Supplementary Note and AR6 Assessment submit that the budget, auction parameters and pot structure are set to balance effective competition with driving capacity and diversity to achieve the policy objective. The Supplementary Note also includes evidence demonstrating competitive auction outcomes of past CfD allocation rounds, suggesting that auction design and parameters chosen generally drive value for money.

3.46 The AR6 Assessment outlines how the changes introduced for AR6 ensure proportionality and avoid overpayment (see paragraph 1.12).

[35] Further information about the Principles B and F can be found in the Statutory Guidance (paragraphs 3.72 to 3.108) and the SAU Guidance (paragraphs 4.15 to 4.19).
[36] BEIS, Evaluation of the Contracts for Difference scheme, Phase 2 Executive Summary, page 3

(a) The change to prevent Private Network CfD Agreements being used to supply offshore oil and gas facilities aims to ensure that the CfD scheme does not pay for costs that may reasonably be expected to be covered through other means.

(b) The change to the pot structure is intended to reduce the risk of unintended auction dynamics resulting in overcompensation whilst increasing the likelihood of deployment of a range of technologies.

3.47 A note on the AR6 Administrative Strike Price methodology, submitted in support of the AR6 Assessment, shows that DESNZ is aiming to set administrative strike prices with the intention of supporting a greater proportion of the project pipeline for certain technologies as part of AR6 than in previous allocation rounds.[37] The methodology note outlines that 'the change is designed to enable greatest participation whilst seeking to retain sufficient levels of competitive tension.'

3.48 The AR5 Report notes that the Assessment could have benefited from an analysis and forecasts of the trajectory of low carbon electricity with and without the subsidy. In response, DESNZ shared statistics on the changing proportion of the UK electricity generation mix provided by renewables over time, as well as generation from CfD projects awarded in AR1 and AR2 from 2016 to 2022.

3.49 We consider that the Assessment usefully identifies various aspects of the scheme which are relevant to limiting the subsidy to the amount necessary, and limiting the scope for over-compensation. The additional data provided shows the changing proportion of the UK electricity generation mix provided by renewables over time and illustrates the contribution of CfD to achieving investment in low carbon technology.

3.50 However, the Assessment could have been improved by explicitly outlining in the main body of the AR6 Assessment the intention to support a greater proportion of the project pipeline for certain technologies in AR6 compared to previous allocation rounds. This change was only submitted in supporting documentation and was not explicitly described in the Assessment.

Design of subsidy to minimise negative effects on competition and investment

3.51 The AR5 Assessment identifies a number of characteristics of the Scheme's design relevant to minimising the scale of potential negative effects on competition or investment (Principle F), including the following:

[37] Instead of targeting the cheapest 25% or 50% of the pipeline for certain technologies, DESNZ are now targeting the cheapest 75% of the pipeline for those technologies (eg offshore wind).

(a) The CfD is a market-based instrument which preserves generators' exposure to market forces by incentivising them to compete in the wholesale electricity market.[38]

(b) The Scheme is open to application for any eligible renewable generating station (subject to certain size thresholds).

(c) Payments are a variable premium (including clawback where appropriate) rather than a fixed payment.

(d) The 15-year CfD length is designed to be as short as necessary to ensure projects are financeable.

(e) The Scheme has built-in performance criteria ('pre-start milestones') to monitor delivery progress.

3.52 Further, the Scheme has been subject to evaluation. The Assessment states that future developments are a subject of the wide-ranging REMA consultation, which DESNZ explained is at an early stage.[39]

3.53 The AR6 Assessment outlines that the total subsidy amount under AR6 is unknown as it is determined by the overall budget. DESNZ stated that the budget and auction parameters will be set closer to the auction date to ensure the latest project pipeline information is used to help achieve the objectives while driving competition and value for money.

3.54 Responding to our suggestion in the AR5 Report that the Assessment could have been improved by including 'edge case' examples,[40] for instance where the subsidy granted under the CfD scheme would be a large proportion of total project costs, DESNZ stated that it does not hold detailed project costing information which would have allowed it to perform such an analysis.

3.55 Overall, we consider that the Assessment appropriately covers the subsidy characteristics identified in Chapter 3 of the Statutory Guidance as being potentially relevant to the likelihood of distortive impacts on competition or investment. It explains how various of these elements help to minimise distortions and customer costs arising from the Scheme. However, in our view, it remains the case that providing 'edge case' examples would improve the evaluation of the impact of the Scheme on competition. Noting DESNZ's constraints, the Assessment could have alternatively considered looking at the largest potential

[38] We note this relates to generators' incentives to sell electricity on the market on the best possible terms (so that with the CfD payment they reach or exceed the strike price). It also exposes the generator to risk were the generator to experience unplanned outages. Generators are not exposed to full market price signals, due to the variable CfD payments stabilising prices received, until market prices become negative.
[39] See BEIS, Review of Electricity Market Arrangements, consultation document, and DESNZ Review of Electricity Market Arrangements - Summary of responses to consultation.
[40] Statutory Guidance, paragraph 3.30.

beneficiary in terms of supported generating capacity and estimated its potential impacts on competitors and market structure.

3.56 On whether a less distortive form of instrument could be deployed whilst still meeting the identified policy objective, we note DESNZ's position in relation to lack of contemporary evidence. Yet it remains the case that the Assessment would benefit from providing a more thorough analysis of alternative subsidy options, particularly those considered at the start of the CfD scheme to the extent they are still relevant.

Assessment of effects on competition or investment

3.57 The AR5 Assessment recognises that the CfD subsidy, in accordance with its policy objective, provides an advantage for renewable generators that receive it that is not available to other forms of power. Similarly, the Supplementary Note states that the intended shift from fossil fuels to renewable electricity sources in the energy generation mix will impact other electricity generators in the market.

3.58 The AR5 Assessment also notes that the auction pot structure can be used to encourage the development of emerging technologies with potential for significant cost reduction and a significant future role. The Supplementary Note further submits that, whilst CfD auctions are designed to allow all eligible renewable technologies to effectively compete, support or protection of some emerging technologies may affect short-term competition between different renewable technologies. However, DESNZ stated that this will be subject to the overall balance it aims to achieve between the different objectives of the Scheme.

3.59 The AR5 Assessment highlights the possibility that future increased renewable capacity may lead to more volatile wholesale prices, which may impact investment incentives and may increase the need for future subsidies. DESNZ also identified that guaranteed support for generators over the term of their contracts could risk incentivising generation when the system does not require it, forcing wholesale prices down, though this is partially mitigated by the rule that payments are not made when wholesale prices are negative.

3.60 The Supplementary Note states that the REMA consultation is considering some of these impacts of the CfD scheme. It also outlines that, to the extent that the CfD scheme is now the main support mechanism for renewable electricity generation, and future wholesale price volatility is connected to greater deployment of renewables that respond to the same changes in weather, CfD generation may increase the risk of such market dynamics.

3.61 Responding to the AR5 Report, the Supplementary Note outlines that generators of electricity from renewables generally compete on the wholesale energy market with generators of electricity from other low-carbon sources and fossil fuels.

3.62 The Supplementary Note further outlines that DESNZ does not expect the CfD scheme to have any impact on international electricity flows via interconnector traffic, as the source of generation generally does not affect import and export decisions.

3.63 DESNZ additionally explained that it is unable to provide all the information on market characteristics and impacts on competition that was noted as missing in the AR5 Report, because this information 'was not considered for the minor changes made for AR5 nor for AR6'. DESNZ added that the CfD scheme is kept under review and will continue to be subject to review as part of the ongoing REMA consultation.

3.64 In our view, the Assessment provides more analysis of market characteristics and of potential impacts on competition in Great Britain compared to the AR5 Assessment. For example, we note the recognition of the relevant product market and the recognition that the transition from fossil fuels to renewable fuels in the electricity generation mix has an impact on other generators active in the market. We also note the acknowledgement of competition impacts between different renewable technologies due to auction design.

3.65 However, notwithstanding this additional information and the explanation above about lack of new evidence, it remains our view that the Assessment would have been improved by including a more systematic evaluation of market characteristics and effects on competition or investment as envisaged in the relevant guidance, namely:[41]

(a) A more complete evaluation of market characteristics, such as the geographic scope of the market, market size and market concentration.

(b) A more detailed consideration of effects on competition or investment, such as impacts on market structure, market concentration and other low-carbon generators.

(c) A more in-depth consideration of impacts on trade flows that could result from increased low-carbon energy generation in GB (though we note the Assessment briefly discussed expected impacts of the CfD scheme on international trade).

Step 4: Carrying out the balancing exercise

3.66 The fourth step involves an evaluation of the assessment against subsidy control Principle G: subsidies' beneficial effects (in terms of achieving their specific policy objective) should outweigh any negative effects, including in particular negative

[41] Statutory Guidance, Annex 3, and SAU Guidance, paragraph 4.18.

effects on: (a) competition or investment within the United Kingdom; (b) international trade or investment.[42]

3.67 The AR5 Assessment sets out the benefits of the Scheme in supporting the building and operation of renewable electricity generation as follows:

(a) The CfD provides greater long-term predictability of revenue to developers by reducing the exposure to volatile wholesale prices, thereby reducing the cost of capital and thus the level of support required;

(b) Reduced financing costs. The AR5 Assessment refers to the results of the 2013 impact assessment[43] estimating that the net present value of benefits resulting from reduced financing costs as a result of the price certainty provided by the CfD.

3.68 The Supplementary Note further sets out that LCCC data suggest that avoided emissions for projects awarded contracts in the first two allocation rounds correspond to a saving of around £164 million (for data downloaded in December 2023).

3.69 In terms of negative effects, the AR5 Assessment notes:

(a) Potential unintended consequences, such as crowding out private investment. It concludes that some potential adverse consequences are likely to be minor, for example in relation to CfD contracts isolating generators from market price signals and incentivising generation when the system does not require it.

(b) Potential distortions on competition because the Scheme provides an advantage for renewable generators that is not available to other forms of power. Aspects of the Scheme's design are intended to reduce adverse consequences.

(c) A distributional impact arising from the funding of the Scheme through a levy on consumer electricity bills based on consumption. As a result, poorer households will spend a larger proportion of their disposable income on the subsidy. However, the Assessment notes that renewables deployment overall decreases the wholesale electricity price.

(d) Institutional costs consisting of National Grid delivering its functions and those associated with setting up the counterparty body. There are also administrative costs associated with the running of the Scheme.

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[42] See Statutory Guidance (paragraphs 3.96 to 3.98) and SAU Guidance (paragraphs 4.20 to 4.22) for further detail.
[43] 2013 Electricity Market Reform Impact Assessment (publishing.service.gov.uk)

3.70 On balance, the AR5 Assessment concludes that the benefits of the CfD scheme outweigh the costs and relies on the 2014 impact assessment (showing a positive net present value) [44] and the 2021 Phase 3 evaluation report indicating that CfD represents value for money, compared to a counterfactual using the previous Renewables Obligation scheme. [45]

3.71 The Supplementary Note outlines that no more recent quantitative assessment has been made but this is likely to be considered as part of any changes to the CfD scheme under REMA.

3.72 In terms of changes in AR6, the Assessment states that:

(a) the change to eligibility for AR6 Private Network CfD agreements could potentially reduce investors' incentives in delivering renewable generation projects for the offshore oil and gas industry. The AR6 impact assessment concluded that there is uncertainty about whether the change proposed in AR6 would materially impact the decisions to electrify the offshore oil and gas industry, and even if the change resulted in increased emissions (due to electrification not occurring), this would be balanced against savings to consumers.

(b) Whilst competition may be reduced by moving offshore wind to its own pot, compared to a scenario where it remains in competition with other technologies, this risk might be mitigated by the possibility of applying a capacity cap or through budget constraints to maintain competitive tension.

3.73 In our view, the Assessment sets out some positive effects of the Scheme in relation to the policy objectives of low carbon generation, and other benefits in terms of reduced cost of financing. DESNZ also provided additional data that estimates the avoided carbon emissions for the first two rounds of CfD. However, the Assessment does not attempt to indicate the scale of the positive effects in terms of other policy objectives, such as security of supply.

3.74 The Assessment could have attempted to provide a more in-depth assessment of the overall scale of the negative impact on competition and investment, as well as impact on international trade and investment.

3.75 In terms of balancing the positive and negative effects, the Assessment mainly refers to calculations made in impact assessments made at the start of the CfD scheme. We note DESNZ's statement that updated quantitative assessment is likely to be considered as part of any changes to the CfD scheme under REMA. Finally, the AR6 revisions to the Scheme do not change the Scheme's policy

[44] Impact Assessment_on_CfD_Secondary_Legislation.pdf (publishing.service.gov.uk)
[45] BEIS, Evaluation of the Contracts for Difference scheme, phase 3 final report.

objective, and do not appear to impact significantly on the balance of the expected beneficial and potential negative effects of the subsidy Scheme.

Energy and Environment Principles

3.76 This step involves an evaluation of the Assessment with regard to compliance with the energy and environment principles, where these are applicable to the subsidy/scheme.[46]

3.77 The Statutory Guidance summarises the scope of the different energy and environment principles that apply to different types of subsidies.[47] DESNZ has conducted an assessment of the scheme against Principles A, B, C and E. We are satisfied that the other energy and environment principles are not applicable to this scheme.

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

3.78 The assessment against Principle A should show how the subsidy is consistent with delivering a secure, affordable and sustainable energy system and a well-functioning and competitive energy market, or 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 of these limbs.[48]

3.79 The AR5 Assessment sets out that the objectives of delivering a secure, affordable and sustainable energy system are aligned to the core objectives of the CfD scheme, as set out in legislation (the Energy Act 2013). The AR5 Assessment briefly sets out how the CfD auction mechanism aims to achieve the objectives of ensuring value for money for consumers through use of a competitive bidding process and capped administrative strike prices. The AR5 Assessment also sets out how certain changes in AR5 aim to avoid over-compensation and that the change to pot structure has been designed to maintain competitive tension in CfD auctions.

3.80 The Supplementary Note explains that the environmental limb of Principle A (increasing the level of environmental protection compared to the level that would be achieved in the absence of the subsidy) is relevant in that encouraging low

[46] See Schedule 2 to the Act.
[47] Principles A and B apply to all subsidies in relation to energy and environment. Principle C applies for subsidies for electricity generation adequacy, renewable energy or cogeneration. Principle D applies to subsidies for electricity generation only. Principle E applies to subsidies for renewable energy or cogeneration. Principle F applies to subsidies in the form of partial exemptions from energy related taxes and levies. Principle G applies to subsidies that compensate electricity intensive users for increases in electricity costs, Principle H relates to subsidies for decarbonisation of industrial emissions. Principle I relates to subsidies for improving energy efficiency of industrial activities.
[48] Statutory Guidance, paragraphs 4.19-4.28.

carbon electricity generation (and so reducing greenhouse gas emissions) is a principal objective, and sets out how the CfD scheme addresses this.

3.81 The AR6 Assessment sets out that the changes which are being made to the Scheme for AR6 do not change the Scheme's compliance with Principle A.

3.82 In our view, to strengthen the assessment, DESNZ could have explained in more detail how the objectives of the CfD scheme, as set out in the Energy Act 2013, link back to the delivery of a secure, affordable and sustainable energy system.

Principle B: Subsidies not to relieve beneficiaries from liabilities as a polluter

3.83 The assessment against Principle B should explain clearly how the proposed subsidy or scheme does not relieve a polluter from having to bear the full costs of the pollution caused.[49]

3.84 In the AR5 Assessment, DESNZ confirmed that no such relief is available through the Scheme. It explained that the CfD scheme supports UK efforts to reduce greenhouse gas emissions from electricity generation and that it does not relieve beneficiaries of any liability arising from their responsibilities in law as polluters. DESNZ added that CfD contracts include requirements on generators to comply with all applicable law. The AR6 Assessment provides no further evidence to support Principle B but there is no indication that the AR6 changes impact on this principle.

3.85 In our view, the Assessment clearly sets out why Principle B is met.

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

3.86 Subsidies or schemes for electricity generation adequacy, renewable energy, or cogeneration, should be assessed against Principle C. The assessment should show clearly that the subsidy or scheme does not undermine the UK's ability to meet its obligations under Article 304 of the TCA, that requires the UK to ensure that wholesale electricity and natural gas prices reflect actual supply and demand, and that, to this end the government shall ensure 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. Principle C also requires that the subsidy or scheme does not unnecessarily affect the efficient use of electricity interconnectors as provided for under Article 311 of the TCA. This article provides for the efficient use of, and non-discriminatory approach to capacity on, interconnectors between the UK and the European Union. The assessment should also show how the subsidy or scheme has been determined

[49] Statutory Guidance, paragraphs 4.29-4.35.

by means of a transparent, non-discriminatory and effective competitive process, or, alternatively, an explanation should be provided for why a competitive process was not required.[50]

3.87 On the requirements related to Article 304 of the TCA, the AR5 Assessment sets out that the CfD scheme supports integration of electricity from renewable energy sources and that beneficiaries are subject to balancing responsibilities in the wholesale market. DESNZ explained that no payment is made when electricity wholesale prices are negative, which incentivises beneficiaries to adapt to the needs of the wider electricity system.

3.88 On the requirements related to Article 311 of the TCA, the AR5 Assessment sets out that no aspect of the Scheme could be seen to unnecessarily affect the efficient use of electricity interconnectors. Finally, DESNZ reiterated that the subsidies are awarded through a transparent, non-discriminatory and effective bidding process.

3.89 The AR6 Assessment sets out that the changes which are being made to the Scheme for AR6 do not change the Scheme's compliance with Principle C.

3.90 In our view, the Assessment provides a reasonable explanation as to how the Scheme meets Principle C.

Principle E: Subsidies for renewable energy or cogeneration shall not affect beneficiaries' obligations or opportunities to participate in electricity markets

3.91 Under Principle E, subsidies for renewable energy or cogeneration shall not affect beneficiaries' obligations or opportunities to participate in electricity markets. A statement that nothing in the terms of the scheme relieves a recipient of the obligation or ability to participate in electrical markets is sufficient to ensure compliance with this principle.[51]

3.92 In the AR5 Assessment, DESNZ confirmed that CfD beneficiaries are strongly incentivised by the terms of CfD contracts to participate in the electricity market to receive the best market revenues they can achieve, as CfD payments are the difference payment between their stipulated strike price and the reference price.

3.93 The AR6 Assessment provides no further evidence to support Principle E.

3.94 In our view, the Assessment provides a reasonable explanation as to how the Scheme meets Principle E.

[50] Statutory Guidance, paragraphs 4.36-4.45.
[51] Statutory Guidance, paragraphs 4.49-4.52.

Other requirements of the Act

3.95 This step in the evaluation relates to the requirements and prohibitions set out in Chapter 2 of Part 2 of the Act, where these are applicable.[52] DESNZ confirmed that none of these prohibitions or other requirements applied to the subsidy.

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[52] Statutory Guidance, chapter 5.