

Subsidy Advice Unit Report on Contracts for Difference (AR5/2023)

**Referred by the Department for Business, Energy
& Industrial Strategy**

22 February 2023

Subsidy Advice Unit

Part of the Competition and Markets Authority

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1. Introduction

- 1.1 This report includes an evaluation prepared by the Subsidy Advice Unit (SAU), part of the Competition and Markets Authority, under section 59 of the Subsidy Control Act 2022 (the Act). The report evaluates the assessment made by the Department for Business, Energy & Industrial Strategy (BEIS) of the compliance of the Contracts for Difference (CfD) scheme, as at Allocation Round 5 (AR5), with the requirements of Chapters 1 and 2 of Part 2 of the Act (the Assessment).¹ The evaluation takes into account any effects of the proposed CfD scheme on competition or investment within the United Kingdom.
- 1.2 This report is based on the information provided to the SAU by BEIS in its Assessment and evidence submitted relevant to that Assessment.
- 1.3 On 7 February 2023, responsibility for the CfD scheme transferred to the newly created Department for Energy Security and Net Zero. Our report refers to BEIS as the department that made the referral and provided its assessment.
- 1.4 This report is provided as non-binding advice to the Department for Energy Security and Net Zero. The purpose of the SAU's report is not to make a recommendation on whether the scheme should continue to be implemented, or directly assess whether it complies with the subsidy control requirements. The Department for Energy Security and Net Zero 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

- 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).
- 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. The (actual) strike price is set at the level of the final accepted bid.

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 requires a public authority to ensure that a prohibited subsidy is not awarded, and that the requirements in relation to the giving of certain other subsidies are satisfied.

² There have been four completed allocation rounds (AR1 to AR4) since inception.

- 1.8 Under the scheme the generator sells the electricity at a variable market price. When the average, representative market price is below the strike price agreed in the CfD contract, the generator receives a top-up payment from LCCC for the amount of the difference (funded by a levy on electricity suppliers).³ When the market price is above the strike price, the generator must pay back the difference to LCCC.
- 1.9 The CfD 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, floating offshore wind, geothermal, hydro, landfill gas, offshore wind, onshore wind, remote island wind, sewage gas, solar photovoltaic (solar PV), 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, BEIS sets a maximum price for each eligible technology that a project can receive for generating electricity, which is called the administrative strike price. BEIS sets these maximum prices based on cost information for the technology.⁴ Consequently, different technologies can have differing strike prices coming out of the auction.
- 1.11 Before each allocation round, the Secretary of State must issue a budget notice (Budget Notice), specifying the overall budget available for each delivery year applicable to the allocation round and the administrative strike prices applicable to applications of each technology in an allocation round.⁵ The overall budget can be split between different pots (ie separate auctions), applicable to different types of renewable energy projects. The purpose of this is to provide support for a wider range of technologies, including for emerging technologies.
- 1.12 The original UK CfD scheme received State Aid approval from the European Commission (EC) for 10 years (from April 2015 to March 2025) in 2014 ('the 2014 EC Decision').⁶ Changes to the CfD scheme in the subsequent allocation rounds (up to and including AR3) were also approved by the EC in 2017,⁷ 2018⁸ and 2019.⁹ Amendments to the scheme in AR4 were self-assessed by BEIS against the subsidy control principles and the requirements for energy and environmental

³ However, no top-up is paid while wholesale prices are negative.

⁴ Administrative strike prices represent the maximum strike price that a project of a particular technology type can receive at an auction, even if the clearing price for the relevant auction pot is higher.

⁵ [The Contracts for Difference \(Allocation\) Regulations 2014](#)

⁶ [State Aid SA.36196 \(2014/N\)](#) – United Kingdom - Electricity Market Reform – Contract for Difference for Renewables, paragraphs 58-59.

⁷ [State Aid SA.47267 \(2017/N\)](#) - United Kingdom - Electricity Market Reform – Contract for Difference for Renewables – Modification

⁸ [State Aid SA.49318 \(2017/N\)](#) United Kingdom - Support for wind energy on remote islands

⁹ [State aid SA.52960 \(2019/N\)](#) United Kingdom - Electricity Market Reform – Contract for Difference for Renewables – Introduction of capacity cap

subsidies in the EU-UK Trade and Cooperation Agreement (TCA). The scheme was extended in AR4 until 2035.

- 1.13 The current fifth CfD allocation round is planned to open to applications in March 2023.
- 1.14 A number of changes have been made to the existing CfD scheme for AR5, following consultation:¹⁰
- a) strengthening the supply chain plan process, which BEIS said is designed to encourage developers to commit to actions to improve the capacity, productivity and competitiveness of their supply chains;
 - b) strengthening the non-delivery disincentive mechanism, which penalises failure either to take up an offer of CfD or to demonstrate delivery required by the relevant project milestone; and
 - c) aligning regulations and the allocation framework with changes to target commissioning dates and windows made for the fourth allocation round (AR4), to reflect changes in the valuation of budgetary impacts of projects.
- 1.15 Further changes are proposed to the CfD contract terms, including restrictions on generators' ability to delay the CfD start date, simplifying data provision requirements for generators and other technical changes.¹¹
- 1.16 BEIS has also published proposals for core auction parameters for AR5 which include changes to the pot structure from the three-pot structure that previously applied;¹² offshore wind and remote island wind will be in one pot for established technologies (offshore wind was previously in a separate pot), while emerging technologies will be in a second pot.¹³
- 1.17 The Budget Notice for AR5 has not yet been published, but BEIS provided, as an indication, the overall budget (ie budget available for each delivery year applicable to an allocation round) and the estimated budget impact (estimate of how much each set of successful projects could cost consumers over the period of the valuation years) for previous allocation rounds.¹⁴ It also provided the estimated total subsidy amount for AR4. Necessarily, budget estimates for a given allocation round are highly uncertain as actual payments depend on market wholesale prices at the time and how much electricity each project generates. BEIS set out in its

¹⁰ [Contracts for Difference \(CfD\): proposals for changes to supply chain plans and CfD delivery.](#)

¹¹ [Consultation on drafting amendments to the CfD contract for Allocation Round 5.](#)

¹² The previous three-pot structure was as follows: Pot 1 - Onshore Wind (>5MW), Solar Photovoltaic (PV) (>5MW), energy from waste with combined heat and power, hydro (>5MW and <50MW), landfill gas and sewage gas; Pot 2 – advanced conversion technologies, anaerobic digestion (>5MW), dedicated biomass with combined heat and power, floating offshore wind, geothermal, remote island wind (>5MW), tidal stream, wave; and Pot 3 – offshore wind.

¹³ [Contracts for Difference \(CfD\) Allocation Round 5: core parameters](#)

¹⁴ For AR1, BEIS provided the spend per year.

consultation document¹⁵ the parameters that will be considered to set the most appropriate budget for AR5 to support achievement of its policy objective, in light of the latest evidence of the available pipeline.

SAU referral process

- 1.18 On 6 January 2023, BEIS referred the CfD scheme to the SAU under section 52(1)(a) of the Act. The SAU notified BEIS on 12 January 2023 that the SAU would prepare and publish a report within 30 working days, on or before 22 February 2023.¹⁶ The SAU published details of the referral on 13 January 2023.¹⁷
- 1.19 Under Section 81(1) of the Act, the modification of a scheme is to be treated as the making of a new scheme for the purposes of the application of the subsidy control requirements (unless the modification is a permitted modification within the meaning of Section 81(3)). BEIS has submitted that the changes to the CfD scheme for AR5 do not fall within the categories of permitted modification. The SAU has therefore undertaken its evaluation of the CfD scheme as a new scheme.
- 1.20 Under Section 52(2) of the Act, BEIS is required to explain how the proposed scheme meets the criteria to qualify as a scheme of particular interest. The Subsidy Control (Subsidies and Schemes of Interest or Particular Interest) Regulations 2022 set out the conditions under which a subsidy or scheme is considered to be of particular interest.¹⁸
- 1.21 BEIS submitted that the CfD scheme is a scheme of particular interest under regulation 3(6) because it allows for the provision of one or more subsidies of particular interest under regulation 3(2) and/or regulation 3(3). While the nature of the CfD scheme means that BEIS is unable to confirm precise amounts provided for specific projects during any applicable period in advance, it has used estimates produced for AR4 to establish that awards to CfD generators typically exceed £1 million, and that in most cases the amount of lifetime subsidy over 15 years would typically exceed £10 million (regulation 3(2)). The CfD scheme relates to a sensitive sector, namely the production of electricity, as set out in regulation 6. Under regulation 3(3), a scheme will be a scheme of particular interest where in a sensitive sector, the amount of the subsidy exceeds £1 million and the total amount of the subsidy and any other related subsidy given to the same enterprise within the applicable period exceeds £5 million. BEIS stated that there will be cases under the scheme where these thresholds are met.¹⁹

¹⁵ [Contracts for Difference \(CfD\) Allocation Round 5: core parameters.](#)

¹⁶ Sections 53(1) and 53(2) of the Act.

¹⁷ [Referral of Contracts for Difference for Renewables Scheme \(as at Allocation Round 5\) by the Department for Business, Energy & Industrial Strategy.](#)

¹⁸ [The Subsidy Control \(Subsidies and Schemes of Interest or Particular Interest\) Regulations 2022](#)

¹⁹ BEIS also concluded that regulation 4(4) is not engaged as the CfD scheme does not concern rescuing, liquidating deposit takers or insurance companies, or liquidity provision for deposit takers or insurance companies.

2. Summary of the SAU's observations

- 2.1 Overall, we have found that BEIS has engaged in some detail on each step of the four-step framework²⁰ put forward in BEIS's *Statutory Guidance for the United Kingdom Subsidy Control Regime*, November 2022 ([BEIS Guidance](#)) and reflected in the SAU's *Guidance on the operation of the subsidy control functions of the Subsidy Advice Unit, SAU1*, November 2022 ([SAU Guidance](#)). BEIS's Assessment contains and references relevant evidence (through primarily public domain documents such as CfD evaluations and the ongoing review of electricity market arrangements).
- 2.2 Generally, BEIS has made use of evidence on the continued need for support to encourage investment in renewables generation and has presented recent evidence from evaluation of the earlier rounds of the scheme. It also set out a reasonable explanation on why the energy and environment principles are met.
- 2.3 The Assessment clearly articulates the policy objectives and market failures (Step 1). In relation to proportionality and minimising distortion (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. This includes the fact that payments are in the form of a variable premium over wholesale prices and offered through an effective competitive allocation process. Some changes in AR5 are also intended to avoid risks of over-compensation.
- 2.4 Our evaluation has highlighted instances where, in considering whether the CfD scheme is consistent with the subsidy control principles, the assessment could be strengthened. In some areas, the assessment might have made better use of aspects of the SAU and BEIS Guidance in order for BEIS to satisfy itself that the CfD scheme complies with the subsidy control principles.
- 2.5 We found that the Assessment would have been stronger if it:
- a) throughout the Assessment, supported certain statements through the use, in a commensurate manner, of up-to-date evidence. As drafted, certain statements in the Assessment rely on evidence that is several years old, or on conclusions reached in EC decisions, without updating the

²⁰ Step 1 involves identifying the policy objective, ensuring it addresses a market failure or equity concern, and determining whether a subsidy is the right tool to use. Principles included in this step are Principle A (common interest) and Principle E (least distortive means). Step 2 involves ensuring that the subsidy is designed to create the right incentives for the beneficiary and bring about a change. Principles included in this step are Principle C (design to change economic behaviour of beneficiary) and Principle D (costs that would be funded anyway). Step 3 involves considering the distortive impacts that the subsidy may have and keeping them as low as possible. Principles included in this step are Principle B (proportionate and necessary) and Principle F (competition and investment within the UK). Step 4 involves carrying out a final assessment against the subsidy control principles and making any changes necessary to achieve compliance with these. Principle G (beneficial effects to outweigh negative effects) is included in this step.

evidence, and do not explain how some quoted observations made in EC decisions remain valid under the UK subsidy control regime;

- b) in relation to Principle E (Step 1), provided a more thorough review of alternative policy tools. The alternatives considered by BEIS are based on the options that were considered at the time of the notification to the EC in 2014 and the Assessment includes only limited updated contemporary analysis or an explanation as to why these alternatives and the analysis are still relevant;
- c) in relation to Principle C (Step 2), set out an up-to-date counterfactual of a market absent the CfD scheme. The impacts were instead largely assessed in comparison to the pre-CfD Renewables Obligation scheme. BEIS's assessment could have benefited from an analysis and forecasts of the trajectory of low carbon electricity with or without the subsidy, further evidencing how CfDs have contributed to a change in behaviour for beneficiaries;
- d) in relation to Principle F (Step 3), provided a more comprehensive market and competition analysis, as envisaged in [BEIS Guidance](#).²¹ The Assessment would have benefited from more explicit recognition of the scheme's intended impact on non-renewable generators and implications for market structure or concentration and technology mix. There is limited discussion of the scope for potential impacts on competition between different renewable technologies; and
- e) in relation to Principle G (Step 4), more systematically identified and evaluated (quantitatively or qualitatively) the benefits and negative effects of the CfD scheme in order to properly establish that the benefits of the scheme outweigh the negative effects on competition and investment within the UK.

2.6 Our report is advisory only and does not directly assess whether the CfD 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.²²^[OB]

²¹ See Annex 2.

²² Section 59(3)(b) of the Act.

3. The SAU's evaluation

- 3.1 This section sets out our evaluation of the public authority's assessment of compliance with the subsidy control principles and the energy and environment principles.
- 3.2 BEIS structured its Assessment according to the four-step framework put forward in the [BEIS Guidance](#) and reflected in the [SAU Guidance](#). Our evaluation follows that structure.

General observations

- 3.3 As noted at paragraph 1.19, the modification of a scheme is to be treated for the purposes of the application of the subsidy control requirements as the making of a new scheme. One consequence of the CfD scheme being well established is that BEIS may not have had available to it the same level of contemporaneous analysis and evidence as might be expected for an entirely new scheme. BEIS has explained that a full impact assessment was not prepared for AR5, although some of the changes were subject to a public consultation. Where BEIS has relied on older analysis and evidence for its assessment, we have considered carefully in our evaluation the extent to which it is still relevant and complete. We have also taken into account that submissions to, and decisions from, the EC were made within the context of the EU State Aid regime.
- 3.4 Changes to the scheme as at AR5 (see paragraphs 1.13 to 1.16) are captured in various sections of BEIS's Assessment. The Assessment clearly sets out the nature of, and the reasons for, these changes. As a general observation, these changes are relatively minor compared to the whole scheme. They do not change the CfD scheme's policy objectives and the revisions do not appear to impact significantly on what would be required in the Assessment to demonstrate compliance with the relevant subsidy control requirements.
- 3.5 As noted at paragraph 1.17, BEIS did not provide a budget for AR5 in its referral. It explained that the budget as set out in the Budget Notice will be set closer to the opening of AR5.
- 3.6 Whilst the absence of a budget creates some gaps in the Assessment, in particular in relation to Step 3, we do not consider this to be a significant impediment to our evaluation in the circumstances of this specific scheme because BEIS was able to provide information giving an indication of the magnitude of the scheme (see paragraph 1.17). We also note actual expenditure on CfD support may differ substantially from the overall budget or budget impact. An estimate of scheme budgets (and limits on individual awards) is typically useful for considering the likelihood of competition effects. In this case, a competition impact, in terms of displacement of fossil fuel capacity by renewable capacity, is the central policy

objective of the scheme, so it is reasonable to assume that the scheme and subsidy sizes involved will be large enough to generate substantive impacts on capacity investment outcomes.

- 3.7 We also note that future developments of the energy regime are currently the subject of the Review of Electricity Market Arrangements (REMA) 2022 Consultation.²³ When completed, any reforms arising may be relevant to assessing the CfD scheme.

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

- 3.8 The first step involves an evaluation of the assessment against the subsidy control principles A²⁴ and E.²⁵ To assess compliance with Principle A, the public authority should clearly set out and evidence the policy objective(s) pursued, and identify and evidence the market failure that is being remedied or equity rationale that is being addressed. In relation to Principle E, the public authority's assessment should show how the need for a subsidy has been identified and evidenced. It should also contain an explanation of why this form of subsidy is the most appropriate tool to achieve the policy objective(s), and an explanation of any means other than a subsidy which have been considered.²⁶

Policy objectives

- 3.9 BEIS Guidance sets out that public authorities may only give subsidies to pursue a specific policy objective. The objective must be one which remedies a market failure or addresses an equity concern.²⁷
- 3.10 The 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.
- 3.11 The Assessment notes that following consultation ahead of AR4, the Government decided to extend the scheme's delivery years until 31 March 2035 to provide support to meet its 2050 Net Zero target.²⁸ It also states that the AR5 amendments

²³ [BEIS, Review of Electricity Market Arrangements](#), consultation document 10 October 2022).

²⁴ Common interest: 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)

²⁵ Least distortive means of achieving policy objective: Subsidies should be an appropriate policy instrument for achieving their specific policy objective and that objective cannot be achieved through other, less distortive, means.

²⁶ [SAU Guidance](#), paragraphs 4.7-4.10.

²⁷ [BEIS Guidance](#), paragraph 3.18.

²⁸ [Government response to the consultation on proposed amendments to the CfD scheme \(November 2020\)](#) pages 23-24.

to the scheme are mostly technical or minor changes that do not change the scheme's policy objective.

- 3.12 In our view, the relevant policy objectives are clearly set out. Recent public documents provided by BEIS with the submission confirm that the Government's policies remain consistent with these objectives even though policies have evolved since the scheme was originally set up in 2014.²⁹
- 3.13 The Assessment might have been strengthened had it related all aspects of the scheme design more explicitly to the identified policy objectives. For instance, security of supply as an objective appears to be applied broadly, to include measures to diversify generation technologies, and this could usefully be explained in relation to long-term objectives.³⁰ There is also reference to additional measures introduced since the scheme was launched which are consistent with but extend beyond the explicitly stated objectives. For instance, BEIS could have better explained how the objectives of the supply chain plans (as set out in the Assessment and supported by an explanatory memorandum) link back to the policy objectives.³¹

Market failure

- 3.14 BEIS Guidance sets out that market failure occurs where market forces alone do not produce an efficient outcome. The most common cases of market failure which are relevant to subsidy control occur when at least one of the following features is present: the existence of externalities; the involvement of public goods; or imperfect or asymmetric information.³²
- 3.15 The Assessment sets out six market failure arguments as to why private provision of low-carbon generation is not optimal without support:
- a) carbon emission externalities of fossil fuel;
 - b) positive externalities leading to under provision of security of supply by the market;
 - c) positive externalities leading to under provision of diversity of supply by the market;

²⁹ For example the consultation: [BEIS, Review of Electricity Market Arrangements](#), consultation document 10 October 2022, chapter 1.

³⁰ If, for example, the bulk of generation capacity became just wind and solar based, generation would be vulnerable to GB-wide weather conditions.

³¹ [The Contracts for Difference \(Allocation\) and Electricity Market Reform \(General\) \(Amendment\) Regulations 2022](#).

³² [BEIS Guidance](#), paragraphs 3.21-3.32.

- d) positive externalities leading to insufficient incentives to achieve the learning benefits of deploying first of a kind (FOAK) and immature technologies;
- e) financial market failures which restrict funds available to energy infrastructure projects; and
- f) unhedged exposure to electricity price risk.

3.16 The Assessment also outlines barriers to commercial development of renewable generation, relating to:

- a) the economics of low-carbon generation, particularly the high capital costs and low operating cost of low-carbon generation, which are not well suited to the UK market where gas is the marginal plant (and so sets wholesale market prices); and
- b) the finance requirements of low-carbon generation. Recent evidence demonstrates that there remain significant barriers to commercial development.³³

3.17 Some of these 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 in developing immature technologies also correspond clearly to the descriptions of categories of market failure set out in [BEIS Guidance](#).³⁴

3.18 In this context we note that BEIS might have provided evidence to demonstrate the existence and significance of these market failures, and it could have more directly explained the link between the policy objectives, the identified market failures and how the scheme will remedy these failures.³⁵

3.19 We note that the 2014 EC Decision states that the UK provided arguments around a combination of barriers and market failures justifying intervention and concluded that 'due to persistent negative externalities, large scale deployment of renewable energy sources would not be financially viable without state aid'.³⁶ However, the original submission to the EC was not included in the documents provided by BEIS, and no detail is provided in the published EC decision that we could review to assess its applicability to our evaluation of the Assessment with reference to the provisions of the Act.

³³ eg [Enabling a High Renewable, Net Zero Electricity System: Call for Evidence - government response](#), pages 7-9.

³⁴ [BEIS Guidance](#), Paragraphs 3.22-3.32.

³⁵ See [BEIS Guidance](#), paragraph 3.33.

³⁶ [State aid SA.36196 \(2014/N\)](#) – United Kingdom Electricity Market Reform - Contract for Difference for Renewables, paragraph 55.

3.20 The Assessment would have been strengthened with the provision of evidence and a fuller explanation of how the last two identified market failures (paragraphs 3.15e and 3.15f) meet the criteria in BEIS Guidance. The Assessment would also have been strengthened if it had considered whether the impact of any of these market failures has changed since the scheme was launched. For example, in relation to financial market failures (paragraph 3.15e), it could have provided some evidence of continuing financial market failures, eg whether balance sheet capacity constraints of incumbent firms continue to restrict overall investment, and whether asymmetric information for investors remains relevant as technologies mature.

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

3.21 BEIS Guidance sets out that, once the policy objective has been identified, public authorities must determine whether a subsidy is the best means for achieving the policy objectives. As part of this, there should be consideration of other ways of addressing the market failure or equity issue.³⁷

3.22 The Assessment sets out that, in the absence of the scheme, decarbonisation objectives would not be met because the majority of projects in renewable energy would not 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 a subsidy has been reasonably identified and evidenced throughout the Assessment.

3.23 The Assessment provides a description of why the CfD scheme was considered the most appropriate and least distortive instrument of several options. The following evidence is presented and discussed:

- a) An emissions performance standard (restricting high carbon generation) and carbon price support were judged to potentially result in excessive rents to low-carbon generators, compared to a CfD, and without significantly affecting barriers to entry and not being robust enough to accommodate the possibility of declining average wholesale prices in the future. By comparison, the CfD scheme would result in lower costs of capital, reducing the impacts on consumers of meeting decarbonisation objectives. This is evidenced in the 2010 Electricity Market Reform Impact Assessment.³⁸
- b) Fixed payments 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. By comparison, the CfD scheme retains the link to the

³⁷ [BEIS Guidance](#), paragraphs 3.40-3.41.

³⁸ [DECC Electricity Market Reform - options for ensuring electricity security of supply and promoting investment in low-carbon generation 14/12/2010](#), pages 1-6.

electricity price resulting in efficiency benefits. This is evidenced in the 2010 Electricity Market Reform Impact Assessment.³⁹

- c) In the 2014 EC Decision, the EC judged that the evidence the UK Government submitted with its 2014 notification provided evidence of the economic benefits of the CfD scheme over a range of alternatives, making it an appropriate instrument.⁴⁰
- d) A 2020 Evaluation of the CfD Scheme containing a value for money analysis is used to evidence that allocation rounds 1 to 3 of the CfD scheme are expected to generate a consumer price reduction of £3bn out to 2050, when compared to the Renewables Obligation scheme.⁴¹

3.24 Further, BEIS explained why some of the changes to AR5 were considered the most appropriate and least distortive. In particular, alternative options to the move from a 3-pot to a 2-pot structure in AR5 are discussed in the context of balancing the objectives of competitive tension at auctions and supporting technology diversity.

3.25 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 alternatives and the analysis are still relevant. To the extent that BEIS relies on the conclusions reached by the EC in the 2014 EC Decision,⁴² we have been unable to test these because the EC notification and documents referenced in the decision were not submitted to the SAU. More recent detailed discussion only focuses on comparison to the Renewables Obligation scheme. The Assessment could have been strengthened by providing more recent discussions of alternatives policy levers and bringing older evidence up to date. The Assessment might also have considered whether the case for the CfD scheme as the most appropriate policy option could change as greater renewable generation capacity is installed.

3.26 Regarding the changes to AR5, the Assessment discusses the options for different pot structures and refers to pricing analysis of previous rounds and informal stakeholder engagement. However, no supporting evidence was provided demonstrating the need for this change, such as internal decision-making documents or analysis.

³⁹ Ibid.

⁴⁰ [State aid SA.36196 \(2014/N\)](#) – United Kingdom Electricity Market Reform - Contract for Difference for Renewables, paragraphs 58-59.

⁴¹ [BEIS Evaluation of the CfD scheme Phase 2 – Executive Summary](#), November 2020, page 3. The Renewables Obligation places an obligation on licensed electricity suppliers in the UK to source a proportion of their supply to customers from eligible renewable sources.

⁴² [State aid SA.36196 \(2014/N\)](#) – United Kingdom Electricity Market Reform - Contract for Difference for Renewables, paragraph 57.

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

3.27 The second step involves an evaluation of the assessment against subsidy control principles C and D.^{43,44} To assess compliance with Principle C, the public authority should clearly set out the change of behaviour that the subsidy will bring about, explain how that change of behaviour will occur, and explain how it helps achieve the policy objective. The public authority should demonstrate why the subsidy is necessary to bring about the change in behaviour, what would happen in the absence of the subsidy (the counterfactual), and set out any relevant evidence and assumptions that have been used. In relation to Principle D, the public authority should explain the additional costs that the subsidy will cover, and why those costs would not be funded by the beneficiary in the absence of the subsidy.⁴⁵

Counterfactual assessment

- 3.28 In assessing the counterfactual, BEIS Guidance explains that public authorities should consider what would happen in the absence of the subsidy, the ‘do nothing’ scenario. This is then the baseline against which public authorities would assess change.⁴⁶
- 3.29 In its Assessment, BEIS sets out that in the absence of the subsidy, renewable energy projects would not be deployed at the scale and pace necessary to support the Government's 2050 net zero target, as, without subsidy, a proportion 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.
- 3.30 The Assessment describes the scenarios submitted in the 2014 EC notification – that, in the absence of the CfD scheme, either no investment would take place or it would be in an alternative, cheaper generation technology, ie gas-fired combined cycle generation.
- 3.31 BEIS told us that in the 2021 Call for Evidence,⁴⁷ almost all respondents felt that there was no viable route to market for renewable projects based primarily on future wholesale market prices. The vast majority also believed some form of government intervention was required to stimulate the levels of investment required. The primary reason for this was that investors do not deem the wholesale

⁴³ Design to change economic behaviour of beneficiary: (1) Subsidies should be designed to bring about a change of economic behaviour of the beneficiary. (2) That change, in relation to a subsidy, should be— (a) conducive to achieving its specific policy objective, and (b) something that would not happen without the subsidy.

⁴⁴ Costs that would be funded anyway: Subsidies should not normally compensate for the costs the beneficiary would have funded in the absence of any subsidy.

⁴⁵ [SAU Guidance](#), paragraphs 4.12-4.14.

⁴⁶ [BEIS Guidance](#), paragraphs 3.46-3.47.

⁴⁷ [Enabling a high renewable, net zero electricity system: call for evidence – Government response \(July 2021\)](#)

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. While some respondents noted that there are some opportunities for merchant deployment available to those willing to take on these risks, they highlighted that both the pipeline of economically viable opportunities and the pool of capital seeking to invest in them is limited.⁴⁸

- 3.32 BEIS submitted that recent modelling as part of the REMA consultation reiterated the conclusion that the high up-front costs of renewables combined with expected market price volatility meant that intervention was required to support the scale and pace of deployment needed to decarbonise the power sector. BEIS submitted this was supported by scenario modelling outcomes that meet the 2050 net zero targets using BEIS's in-house Dynamic Dispatch Model (DDM) (a comprehensive fully integrated power market model covering the Great Britain power market over the medium to long term)⁴⁹ which suggested that risk factors undermining investment decisions would persist without subsidy. The underlying data and assumptions to this modelling were not provided to us.
- 3.33 We consider that the Assessment identifies good qualitative evidence that, without subsidy, the financial viability for renewable energy generators is limited. The Assessment could have been further strengthened with some quantitative evidence, whether from beneficiaries or from providers of private finance, further demonstrating the challenges faced by generators and the limitations of investing in the market absent the CfD scheme.
- 3.34 Furthermore, the Assessment would have benefited from an up-to-date assessment of the counterfactual scenario for the CfD scheme. The Assessment does not set out in detail what would happen in the absence of the subsidy. Further data from DDM modelling and clear explanations of the scenarios and assumptions considered would have strengthened the assessment and the overall understanding of the counterfactual.

Changes in economic behaviour of the beneficiary

- 3.35 BEIS Guidance sets out that subsidies must bring about something that would not have occurred without the subsidy.⁵⁰ In demonstrating this, public authorities should consider the likely change or additional net benefit. An example of this could be an increase in the scale or scope of a project or activity.
- 3.36 The Assessment sets out how the CfD scheme creates an environment conducive to the change in economic behaviour of beneficiaries in support of the policy objectives. The Assessment submits that the CfD scheme removes market barriers

⁴⁸ [Enabling a high renewable, net zero electricity system: call for evidence – Government response \(July 2021\)](#), page 8

⁴⁹ See a published description at [DECC, Dynamic Dispatch Model 2012](#).

⁵⁰ [BEIS Guidance](#), paragraph 3.50.

and 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 CfD scheme provides support for the difference between the cost of generating renewable electricity and the market price of the electricity, allowing for a normal return on capital. BEIS said that the length of the CfD contracts (15 years) was designed to be as short as possible, consistent with projects being financeable, and reflects a balance between affordability of the subsidy and bringing about a change in economic behaviour.⁵¹

- 3.37 BEIS submitted qualitative evidence in support of this view; for example, the majority of those interviewed for the 2018-21 evaluation of the CfD scheme felt that, without a CfD, or other form of price stabilisation support, no technology would be able to deploy at scale. Respondents indicated that forecasts of future price did not provide enough certainty to allow the type of long-term investment that is needed to meet decarbonisation targets or would increase the cost of capital for renewables.⁵² Some respondents felt that some offshore wind, onshore wind and solar projects could be deployed without a CfD contract, selling energy through corporate Power Purchase Agreements (PPAs).⁵³ However, the availability of quality PPAs was a constraint, with the corporate PPA market widely seen as too small to provide a realistic alternative to the CfD scheme.
- 3.38 We consider that the Assessment sets out positive qualitative evidence supporting the change in economic behaviour (ie in undertaking investment in new generation capacity) brought about by the CfD scheme. Evidence submitted from the 2021 Call for evidence⁵⁴ indicates that the support from the 15-year price certainty afforded by the scheme has encouraged private finance. Additionally, the REMA 2022 Consultation document states that 'the CfD scheme has helped to dramatically reduce costs by providing investors with stability.'⁵⁵
- 3.39 From the qualitative evidence provided of an increase in private finance and therefore follow-on investment in the market, the CfD scheme appears to lead to a change in the economic behaviour of beneficiaries under the scheme in support of the government's decarbonisation goals. However, the Assessment could have benefited from an analysis and forecasts of the trajectory of low carbon electricity

⁵¹ Assessment of the appropriate length of contract was conducted at the inception of the scheme. This has not been revisited in subsequent evaluations of the scheme.

⁵² BEIS, [Evaluation of the Contracts for Difference scheme](#), see page 30 of final report, phase 3

⁵³ A Power Purchase Agreement is a commercial contract between a generator and a purchaser of electricity defining requirements such as electricity generation, operation and the schedule of delivery.

⁵⁴ [Enabling a high renewable, net zero electricity system: call for evidence – Government response](#) (July 2021).

⁵⁵ [BEIS, Review of Electricity Market Arrangements](#), consultation document 10 October 2022.

with or without the subsidy, further evidencing how CfDs have contributed to a change in behaviour for beneficiaries.

Additionality assessment

- 3.40 According to BEIS 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.⁵⁶ When specifically looking at schemes, BEIS Guidance also sets out that public authorities should, where possible and reasonable, 'design out' non-additionality (ie find means within the design of the scheme to identify in advance and exclude any groups of beneficiaries where it can be reasonably determined they would be likely to go ahead without subsidy).⁵⁷
- 3.41 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. Points which BEIS identified in the Assessment and we consider relevant include:
- 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 their CfD contract in a timely manner after generation commences, in support of the policy objective, and do not avoid difference payments when wholesale prices are high (ie 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.
- 3.42 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. Proposed changes to contract terms, for example preventing the delay in start dates, demonstrate that BEIS is actively trying to improve the design of the scheme.
- 3.43 As mentioned in the sections above, BEIS set out in its Assessment that, without subsidy, a proportion of projects would be unlikely to be financially viable.
- 3.44 The implication is that some projects would be viable without a CfD contract and that there would be some level of capacity that would exist, albeit at a smaller scale, in the absence of the subsidy. Therefore, it may be that some beneficiaries

⁵⁶ [BEIS Guidance](#), paragraphs 3.49-3.53.

⁵⁷ [BEIS Guidance](#), paragraph 3.55

under the scheme may have entered the market anyway. However, the Assessment does not attempt to quantify the extent to which this possibility is likely to occur (for example through modelling incentives against a counterfactual). The Assessment would have been strengthened if it had considered whether this would have a significant impact on the additionality aspect of the CfD scheme, and if so, had addressed whether excluding such projects would have been possible and reasonable.

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

- 3.45 The third step involves an evaluation of the assessment against subsidy control principles B and F.^{58,59} To assess compliance with Principle B, the public authority should demonstrate in its assessment that the subsidy is proportionate to the specific policy objective and limited to the minimum needed to induce the relevant investment or activity. In relation to Principle F, the public authority's assessment should address how the design of the subsidy minimises any negative effects on competition or investment within the UK.⁶⁰
- 3.46 For Step 3, BEIS Guidance sets out certain aspects of the subsidy or scheme to consider, including the nature of the instrument, the breadth of beneficiaries and the selection process, the size of the subsidy, the timespan over which a subsidy is given, the nature of the costs being covered, performance criteria, ringfencing, monitoring and evaluation and subsidy races.⁶¹ Annex 2 of the guidance explains that, given the potential distortive impact of subsidies or schemes of interest/subsidies or schemes of particular interest, public authorities should consider providing a more in-depth assessment of the characteristics of the subsidy, and of the market characteristics, including identifying the markets, market concentration, barriers to entry, expansion and exit and market growth.⁶²

Proportionality

- 3.47 In relation to Principle B, BEIS stated in the Assessment that 'The CfD is a market-based instrument which has been carefully designed to ensure the subsidy is proportionate. The CfD, which offers subsidy as a premium above wholesale prices, is designed to minimise payments to just what is needed to fulfil the policy objective and to minimise impacts on competition between electricity generators.'

⁵⁸ Proportionate and necessary: Subsidies should be proportionate to their specific policy objective and limited to what is necessary to achieve it.

⁵⁹ Competition and investment within the United Kingdom: Subsidies should be designed to achieve their specific policy objective while minimising any negative effects on competition or investment within the United Kingdom.

⁶⁰ [SAU Guidance](#), paragraphs 4.15-4.17.

⁶¹ [BEIS Guidance](#), paragraphs 3.58-3.94.

⁶² [BEIS Guidance](#), Annex 2

- 3.48 BEIS explained 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.⁶³ Rules for the auctions are published in the allocation framework for each round. Subsidy payments are only made when reference prices are below the strike price, and generators have to pay back when wholesale prices rise above the strike price.
- 3.49 With respect to AR5, BEIS states that the change to the auction pot structure has been designed to maintain competitive tension in the auctions, due to a smaller pipeline of projects for AR5, and offshore wind projects in particular.
- 3.50 With respect to proportionality more generally, points which BEIS identified in the Assessment and 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.
- 3.51 Various of the AR5 changes are also intended to avoid risks of over-compensation.⁶⁴
- 3.52 BEIS noted that in the 2014 EC Decision, the EC considered that the manner in which the scheme would offer support was proportionate, limited to the minimum needed to achieve its objective. BEIS also submitted 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.⁶⁵

⁶³ Administrative Strike Prices represent the maximum strike price that a project of a particular technology type can receive at an auction, even if the final clearing price for the relevant auction pot, which other technologies may receive, is higher.

⁶⁴ In particular the update to interest rate calculations methodology for repaying cumulated subsidy, the removal of Balancing Services Use of System charge clauses, and the contract change to avoid delay to start dates. See [Contracts for Difference: contract changes for Allocation Round 5](#).

⁶⁵ BEIS, [Evaluation of the Contracts for Difference scheme, Phase 2 Executive Summary](#), page 3

- 3.53 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.
- 3.54 An effective competitive allocation process can help ensure that support is limited to the minimum needed and therefore proportionate, both as a general matter and specifically with respect to incentives to invest in low carbon generation.⁶⁶ The Assessment clearly sets out how the CfD scheme is determined by means of a transparent, non-discriminatory and competitive process. We therefore found that the reasoning in the Assessment on this point is well-founded. Payment of a variable premium over wholesale prices, and the two-way nature of payments, are also relevant elements identified, as is the non-payment of support when wholesale prices are negative.
- 3.55 The effectiveness of CfD auctions depends in part on the auction design eliciting cost-reflective bids. Broadly speaking, this will mean that projects with the lowest costs will win contracts, will create good incentives for future cost reduction, and will provide useful information for the relevant authorities. The Assessment might have been improved by including specific evidence of the effectiveness of the previous allocation round auctions in delivering competitive outcomes,⁶⁷ and of expectations that these will continue in more frequent annual auctions. The Assessment could also have included supporting evidence on the need for the change in the auction pot structure.
- 3.56 Another aspect of the auctions is the level of generation capacity that is supported. The Assessment might have presented more details on how BEIS chooses how much capacity to support in each allocation round. This will be dependent on budgets and forecasts of generation and market prices. This could help explain how the scheme is limited to what is necessary.
- 3.57 We note that the scheme evaluation used the Renewables Obligation scheme as its counterfactual. Whilst consumer cost savings relative to the Renewables Obligation scheme are of interest as evidence of scheme effectiveness and value for money (including in reducing additional system costs), it may also have been helpful to also consider a comparison of cumulative customer costs incurred relative to a 'no subsidy' scenario.

⁶⁶ [BEIS Guidance](#), paragraph 3.70. The CMA also noted in its [Energy MIR Report](#) (paragraph 53) that by enabling a competitive process for setting strike prices, CfDs should provide a more efficient means of providing support than the prior support schemes.

⁶⁷ For example, comparing actual auction strike prices to the relevant administrative strike prices.

3.58 The Assessment may have benefited from inclusion of illustrative evidence or estimates of the levels of support costs relative to typical overall project investment costs for different technologies in previous allocation rounds.⁶⁸

Design of subsidy to minimise negative effects on competition and investment

3.59 With respect to the design of the subsidy, in addition to the elements discussed above, BEIS identified a number of scheme characteristics relevant to minimising the scale of potential negative effects on competition or investment (Principle F), including the following:

- 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.⁶⁹
- 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.
- f) Supply chain plans aim to increase competitiveness of renewables supply chains (which should ultimately reduce costs and the amount of support required).

3.60 Further, the scheme has been subject to evaluation, and future developments are a subject of the current wide-ranging REMA 2022 consultation.⁷⁰

3.61 BEIS also explained that changes to the auction pot structure for AR5 are designed to maintain competitive tension in the auction, in particular due to a smaller pipeline of offshore wind projects.

3.62 We consider that the Assessment addresses most of the subsidy characteristics identified in Chapter 3 of the [BEIS Guidance](#) as being potentially relevant to the

⁶⁸ For example, some indicative estimates of 'subsidy intensity' for the types of projects supported by the CfD scheme, albeit noting that there are no firm thresholds for such metrics. See [BEIS Guidance](#), paragraphs 3.74 and 16.13.

⁶⁹ We note this is with regard 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 it 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.

⁷⁰ See [BEIS Guidance](#), paragraphs 3.90-3.92 on monitoring and evaluation, and [BEIS, Review of Electricity Market Arrangements](#), consultation document 10 October 2022.

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.

- 3.63 The Assessment contains limited discussion of the size of the scheme and constituent subsidies, the nature of costs covered, and how the scheme is targeted at them. Limited information on individual subsidy size (and specific recipients) is a natural feature of subsidy schemes made in advance of identification of beneficiaries, though a public authority should still seek to identify and consider 'edge case' examples.⁷¹ An estimate of the scheme budget (and associated new generating capacity), enabling comparison with market size, would typically be useful for considering the likelihood of competition effects.⁷² In this case, a competition impact, in terms of displacement of potential fossil fuel capacity by (higher cost) renewable capacity, is the central policy objective of the scheme, so it is reasonable to assume (based on previous practice) that the scheme and subsidy sizes involved will be large enough to generate substantive impacts on capacity investment outcomes.
- 3.64 We note that costs covered under the scheme are targeted at encouraging investment in new generation capacity as, in practice, provision of price support is conditional on the planned investment having been delivered and having started generating (implying fairly effective targeting at initial investment costs despite the extended payback period).

Assessment of effects on competition or investment

- 3.65 Certain elements of the Assessment involve consideration of the scheme's effects on competition and investment. The Assessment recognises that the CfD subsidy provides an advantage for renewable generators that receive it that is not available to other forms of power. Also, one aim of the auction pot structure is to retain the option to encourage the development of emerging technologies with potential for significant cost reduction and a significant future role.
- 3.66 The Assessment highlights the possibility that future increased renewable capacity may lead to more volatile wholesale prices, which may impact investment incentives (and ongoing need for subsidies). BEIS 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.

⁷¹ [BEIS Guidance](#), paragraph 3.16. For example, are there potential foreseeable examples under the scheme where the subsidy granted would be a large proportion of total project costs.

⁷² [BEIS Guidance](#), paragraph 16.8.

- 3.67 We note that the Assessment does not contain an analysis of market characteristics and effects on competition or investment as envisaged in the relevant guidance.⁷³ This would involve an assessment of, for example, product and geographic scope of the affected market, market size, market concentration, and impacts of beneficiary behaviour on (current and potential) competitors. The Assessment could have benefited from more explicit recognition of the impact of the scheme on non-renewable generators, and implications for market structure and concentration, technology mix, international electricity flows via interconnectors (if relevant), and the consequent higher overall system costs (which feed through to customer prices via support payments and the levy on electricity suppliers).
- 3.68 We recognise that an effect on competition and investment - displacement of potential future investment in fossil fuel generating capacity by renewable capacity - is itself an inherent objective of the scheme, aimed at meeting carbon reduction targets and promoting technology diversity. However, the Assessment does not attempt to identify the overall scale of that effect, in particular with respect to its impact on customer costs.
- 3.69 We consider that the Assessment might also have been improved as follows:
- a) There is little discussion of scope for potential distortive impacts on competition or investment between different renewable technologies due to the auction design. Separate technology pots, maximum or minimum limits on monetary or capacity requirements for particular technologies, and differing administrative strike prices may enable some higher cost technologies to obtain support ahead of other lower cost technologies. This is an established feature of the scheme, and the rationale of supporting technology diversity is explained. The Assessment might have been strengthened with evidence on how BEIS's decisions on division of technologies between auction pots, and allocation of budget into different pots, promote optimal outcomes.
 - b) The Assessment includes some discussion of the effect of higher future volumes of renewable generating capacity on wholesale market prices (including through price cannibalisation effects).⁷⁴ A supporting study provided by BEIS also considered incentives for supply responses to price signals.⁷⁵ It might have been helpful to clarify the extent to which changes

⁷³ [BEIS Guidance](#), paragraphs 16.2, and 16.18-16.63, and [SAU Guidance](#), paragraph 4.18.

⁷⁴ See also [BEIS, Review of Electricity Market Arrangements](#), consultation document 10 October 2022, pages 26-28,

⁷⁵ [UKERC, Risk and Investment in Zero-Carbon Electricity Markets, implications for policy design \(2021\)](#) page 6 states '...although CfDs make investment less risky, they also largely remove any incentive for renewable generators to respond to the short-term price signals that reflect the value of electricity in particular locations or at particular times of the day or year... if renewable projects were fully exposed to wholesale price movements over time and in different locations, renewable generators could be incentivised to generate more when demand is high and not to generate when demand is low. This is also linked to a wider set of arguments associated with incentives for demand response and provision of flexibility.'

in future anticipated wholesale price levels and volatility are consequences of CfD scheme contracts specifically, or of higher renewables capacity more generally.

Step 4: Carrying out the balancing exercise

- 3.70 This fourth step involves an evaluation of the assessment against subsidy control principle G.⁷⁶ The public authority should explain how it has evaluated and measured both the expected beneficial effects of the subsidy (which must be linked to achieving the specific policy objectives), and the potential negative effects of the subsidy on competition or investment within the UK and/or international trade or investment. The public authority should explain how the geographical and distributional impacts of the subsidy within the UK have been assessed. Finally, the public authority should demonstrate how it has approached the exercise of balancing the beneficial effects of the subsidy against any negative effects.⁷⁷ BEIS Guidance explains that the final step of the framework consists of a balancing exercise, where the public authority must establish that the benefits (in relation to the specific policy objective) of the subsidy outweigh the negative effects. This balancing exercise should involve the public authority listing the subsidy's expected benefits and negative effects, considering their expected size and their likelihood of occurring. The balancing exercise may need to include both quantitative and qualitative elements.⁷⁸
- 3.71 The Assessment sets out the benefits of the scheme in supporting the building and operation of renewable electricity generation, particularly in terms of reduced financing costs.⁷⁹ BEIS considered that the 2021 Phase 3 evaluation of the CfD scheme indicated that the scheme represents value for money.⁸⁰ We note that this was evaluated against a counterfactual of maintaining the previous Renewables Obligation scheme.
- 3.72 The Assessment also identifies some 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. The Assessment recognises that the CfD scheme can cause distortions. The scheme provides an advantage for renewable generators that is not available to other forms of power. However, we note that this

⁷⁶ Beneficial effects to outweigh negative effects: Subsidies' beneficial effects (in terms of achieving their specific policy objective) should outweigh any negative effects, including in particular negative effects on— (a) competition or investment within the United Kingdom; (b) international trade or investment.

⁷⁷ [SAU Guidance](#), paragraphs 4.20-4.22.

⁷⁸ [BEIS Guidance](#), paragraphs 3.96, 3.97 and 3.98

⁷⁹ It reports the results of the [2013 Electricity Market Reform Impact Assessment](#) estimated that reduced financing costs as a result of the price certainty provided by the CfD, could provide benefits of up to £3.8bn up to 2030 in NPV terms (2012 prices).

⁸⁰ BEIS, [Evaluation of the Contracts for Difference scheme](#), phase 3 final report.

distortion is intrinsic to the objective to encourage low-carbon generation. The Assessment also notes that there are institutional costs of establishing and administering the necessary functions to support the CfD scheme, as well as costs to business.

- 3.73 The Assessment sets out aspects of the scheme's design intended to reduce adverse consequences, for example, that allocation is through a competitive auction process, that generators have to compete for the best possible price and do not receive payments when wholesale prices are negative. It notes the terms of the CfD scheme prohibit receipt of other subsidies.
- 3.74 The Assessment notes that there is 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 suppresses the wholesale electricity price.
- 3.75 The Assessment also notes that CfD contracts are open to all eligible renewable generators with projects in Great Britain without discrimination, and geographical location within Great Britain is not factored into the allocation process. The Assessment states that whilst projects outside Great Britain are not eligible, there are comparable support schemes in other countries, which means that any potential effects on trade, investment and location are limited. There is no further consideration of any effects on international trade, eg in energy.
- 3.76 In our view, the Assessment has not attempted systematically to identify and evaluate (quantitatively or qualitatively) relevant beneficial effects of the subsidy and all potential negative effects of the subsidy. The Assessment does not include a balancing exercise of all these effects, and does not explicitly draw a conclusion, in order to establish that the benefits of the subsidy, in relation to the specific policy objectives, outweigh the negative effects.⁸¹
- 3.77 For example, in relation to beneficial effects, the Assessment could have sought to quantify or value the benefits in relation to carbon reduction and security of supply. It could also have systematically identified potential negative effects and sought to quantify and value them, including impacts on competition and investment within the UK and international trade and investment. It could also have included the consumer costs of the scheme in the assessment.
- 3.78 Some of the costs and benefits may be difficult to quantify, and the counterfactual against which they should be compared may not be clear, eg whether it relates to previous policies or to no intervention. However, in our view, it would have been possible to take a qualitative view of the scale of costs and benefits (relevant to the

⁸¹ [BEIS Guidance](#), paragraph 3.95.

policy objectives of the scheme) for balancing the beneficial effects and negative impacts of the scheme.⁸²

- 3.79 The AR5 revisions to the scheme are mainly technical or minor changes that do not change the scheme's policy objective, and do not appear to impact significantly on the balance of the expected beneficial and potential negative effects of the subsidy.

Energy and environment principles

- 3.80 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.⁸³

- 3.81 BEIS Guidance summarises the scope of the different energy and environment principles that apply to different types of subsidies.⁸⁴ BEIS has conducted an assessment of the scheme against Principles A, B, C, E and F. 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

- 3.82 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.⁸⁵
- 3.83 In its Assessment, BEIS set 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 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. These core elements of the CfD scheme have not changed for AR5. The 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.

⁸² See [BEIS Guidance](#), paragraphs 3.99-3.100.

⁸³ See Schedule 2 to the Act.

⁸⁴ 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.

⁸⁵ [BEIS Guidance](#), paragraphs 4.19-4.28.

- 3.84 BEIS's explanation of this principle is brief, but evidence is included in the main sections of the Assessment on how the scheme is consistent with affordability, sustainability and security.
- 3.85 The Assessment does not explicitly address 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) and does not explain why not. We note that [BEIS Guidance](#) sets out that schemes with a specific policy objective of promoting Net Zero will tend to be consistent with Principle A ([BEIS Guidance](#), paragraph 4.27).
- 3.86 To strengthen the Assessment, BEIS could have referred to the relevant evidence in this section of its Assessment, and 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. It could also have explained whether the environmental limb of Principle A is applicable.

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

- 3.87 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.⁸⁶
- 3.88 BEIS has 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. BEIS added that CfD contracts include requirements on generators to comply with all applicable law.
- 3.89 The SAU considers that the Assessment clearly sets out why Principle B is met.

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

- 3.90 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

⁸⁶ [BEIS Guidance](#), paragraphs 4.29-4.35.

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 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 not required.⁸⁷

- 3.91 On the requirements related to Article 304 of the TCA, BEIS set 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. BEIS 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.
- 3.92 On the requirements related to Article 311 of the TCA, BEIS explained that no aspect of the scheme could be seen to unnecessarily affect the efficient use of electricity interconnectors. Finally, BEIS reiterated that the subsidies are awarded through a transparent, non-discriminatory and effective bidding process. The core elements remain similar for AR5. BEIS explained that the change to pot structure has been designed to maintain competitive tensions in CfD auctions, whilst maintaining clear support for established and emerging technologies.
- 3.93 In the SAU's view, the Assessment provides a reasonable explanation as to why the CfD scheme does not undermine the UK's obligations under Article 304 and 311 of the TCA. Furthermore, as set out in Step 3, the Assessment sets out how the scheme is determined by means of a transparency, non-discriminatory and competitive bidding process.

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

- 3.94 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.⁸⁸
- 3.95 BEIS has 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 a representative market reference price.

⁸⁷ [BEIS Guidance](#), paragraphs 4.36-4.45.

⁸⁸ [BEIS Guidance](#), paragraphs 4.49-4.52.

3.96 The SAU considers that the Assessment provides a reasonable explanation as to why the CfD scheme does not affect beneficiaries' obligations and opportunities to participate in electricity markets.

Principle F: Subsidies in the form of partial exemptions from energy-related taxes and levies only

3.97 Subsidies in the form of partial exemptions from energy-related taxes and levies in favour of energy-intensive users should be assessed against Principle F. The assessment should clearly demonstrate that the value of any such exemption does not exceed the total value of the relevant tax or levy. If the exemption does exceed this, then the assessment should ensure that it has accounted for this in the assessment of the scheme under the general subsidy control principles.⁸⁹

3.98 BEIS provided some information about an exemption from the levy on electricity suppliers. It said that the scheme provides relief from a proportion of these costs for certain businesses classified as Energy Intensive Industries, but the level of the exemption is up to 85% of the indirect costs of funding the CfD exemption schemes.

3.99 BEIS has not explained how the partial exemption from energy related levies for certain businesses is part of the CfD Scheme referred to the SAU. In our view, while there is a partial exemption from energy related levies for certain businesses, this exemption does not appear to be part of the scheme referred to the SAU, but part of the Energy Intensive Industries Exemption Scheme. It was accordingly not necessary for BEIS to assess the CfD scheme against Principle F and the SAU is not proposing to evaluate BEIS' Assessment in relation to this principle.

Other requirements of the Act

3.100 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.⁹⁰

3.101 BEIS confirmed that none of the prohibitions or other requirements in relation to the giving of certain other subsidies applied to the CfD scheme.

⁸⁹ [BEIS Guidance](#), paragraphs 4.53-4.56.

⁹⁰ [BEIS Guidance](#), chapter 5.