The Law of Renewable Energies in the United Kingdom: Focus on Contracts for Difference

Agnieszka Ason

A. Introduction: the UK's Path to Net Zero

As noted in the UK General Chapter of this volume, the energy transition in the UK is a transition to net zero. The 2008 Climate Act committed the UK to reducing its greenhouse gas emissions by 80 % by 2050 compared to the 1990 baseline. In 2019, the 2050 Target Amendment Order amended the Climate Change Act 2008 by incorporating the following even more ambitious target:

> The target for 2050
>
> (1) It is the duty of the Secretary of State to ensure that *the net UK carbon account for the year 2050 is at least 100 % lower than the 1990 baseline.*
> (2) "The 1990 baseline" means the aggregate amount of—
> (a) net UK emissions of carbon dioxide for that year, and
> (b) net UK emissions of each of the other targeted greenhouse gases for the year that is the base year for that gas.[1]

As a result of this amendment, the UK government has set a legally binding target to reduce the UK's greenhouse gas emissions by 100 % by 2050 (compared with 1990 levels). This is typically referred to as the UK net zero target. To meet the net zero target, the UK has enacted robust legislation aimed at maintaining momentum and growth in renewable energies.

The Energy Act 2023 establishes both new and modified rules for "energy production and security and the regulation of the energy market"[2] and it reflects the UK's firm commitment to developing clean energy. Having grown exponentially from negligible levels (accounting for just 2 % of elec-

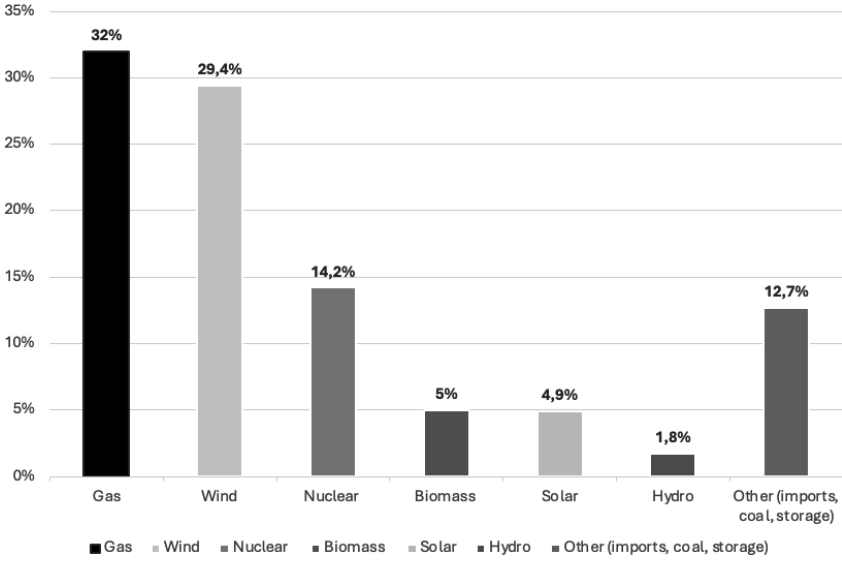
1 HM Government, 'Climate Change Act 2008' Section 1 <https://www.legislation.gov.uk/ukpga/2008/27/section/1> accessed 26 June 2025, emphasis added.

2 HM Government, 'Energy Act 2023' <https://www.legislation.gov.uk/ukpga/2023/52/contents> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

tricity generation in the UK in 1991[3]), renewable energy sources (wind, solar, biomass and hydro) now make up a significant proportion of the UK's electricity mix, as shown in the chart below.

Figure 1: 2023 electricity generation mix (by source) in the UK



Source: Author based on Electricity System Operator's data[4]

In 2023, wind power contributed nearly one third of the UK's total electricity generation. The UK remains particularly committed to developing offshore wind and has "a world-leading ambition to deploy up to 50 GW by 2030, with up to 5 GW coming from floating offshore wind."[5] This target is accompanied by a commitment to shorten development timescales for future projects and is part of a wider aim to develop "fully decarbonised,

3 National Grid, 'How much of the UK's energy is renewable?' (2024) <https://www.nationalgrid.com/stories/energy-explained/how-much-uks-energy-renewable> accessed 26 June 2025.

4 Electricity System Operator, 'Britain's Electricity Explained: 2023 Review' (2024) <https://www.nationalgrideso.com/news/britains-electricity-explained-2023-review> accessed 26 June 2025.

5 Department for Energy Security and Net Zero, 'Offshore Wind Net Zero Investment Roadmap' (2023) <https://www.gov.uk/government/publications/offshore-wind-net-zero-investment-roadmap> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

reliable and low-cost power system by 2030", which "is most likely to be composed predominantly of wind and solar power generation".[6] For solar energy, the UK government aims to achieve 70 GW of solar power by 2035 (up from almost 16 GW in March 2024 and just 0.02 GW in January 2010[7]).

The expansion of renewable energy is widely recognised as key to achieving the UK net zero target. In practice, however, the development of renewable electricity generation has proved to be a difficult task, largely due to weak project fundamentals. This was the case for the first renewable power plants (solar and wind), which were more expensive per unit of electricity produced than fossil fuel power plants. To incentivise the deployment of a renewable technology that was still too costly to compete on its own with prevailing market alternatives, the UK government (like other governments around the world) has introduced various support schemes over the past few decades.

In principle, the aim of using incentive mechanisms for new technologies – either through direct subsidies or price stabilisation mechanisms – is to accelerate the deployment of these technologies and make them competitive over time, when the support mechanisms may become redundant once the new technologies are able to compete on their own merits in the open market. As more of a desired technology is deployed, its cost will fall through economies of scale and learning curve effects, making it more competitive with legacy technologies.

There are several government support mechanisms that can facilitate the deployment of clean energy. Over the past decade, Contracts for Difference (CfDs) have become the UK government's main mechanism for supporting renewable electricity generation. The UK, several EU Member States and other countries have recently announced (or reaffirmed) their intention to prioritise CfDs to support investment in renewable energy projects. Following the successful experience with CfDs in renewables, it has been recognised that the CfD concept may be suitable for other applications. Work is currently underway to develop CfD-based business models, initially for clean hydrogen and Carbon Capture and Storage (CCS), and there

6 Department for Energy Security and Net Zero, 'Net Zero Strategy: Build Back Greener' (2021) <https://www.gov.uk/government/publications/net-zero-strategy> accessed 26 June 2025.

7 House of Commons Library, 'Planning for Solar Farms – Research Briefing' (2024) <https://researchbriefings.files.parliament.uk/documents/CBP-7434/CBP-7434.pdf> accessed 26 June 2025.

https://doi.org/10.5771/9783748962601-379 https://www.inlibra.com/de/agb - Open Access -

is scope for a wider use of CfDs for low-carbon solutions as the energy transition progresses.

The key objective of this chapter is to examine the role of CfDs as enablers of renewable energy projects in the UK and to discuss their emerging applications to other clean energy solutions. The chapter also provides some comparative perspectives on the current and potential use of CfDs in other jurisdictions.

B. Contracts for Difference in the UK

CfDs were conceptualised in a 2011 White Paper by the (then) Department of Energy & Climate Change as "a new system of long-term contracts providing clear, stable and predictable revenue streams for investors in low-carbon electricity generation" and "a cheaper, more robust mechanism than the alternative support options available", providing "greater certainty" that the UK will meet its carbon emissions targets.[8] CfDs were formally introduced as part of the 2013 Electricity Market Reform[9] and they play a key role in the pending Review of Electricity Market Arrangements (REMA).[10]

1. The Mechanism

CfDs are risk management tools to provide price support for emerging technologies and to encourage desired behaviours, such as investment by private actors in more sustainable production methods. By providing stability and predictability of future revenue streams, CfDs encourage investment in new projects that might otherwise take many years to develop or not come to market at all if they were solely dependent on volatile market prices.

8 Department of Energy and Climate Change, 'Planning our electric future: a White Paper for secure, affordable and low-carbon electricity' (2011) <https://assets.publishing.service.gov.uk/media/5a78b0dce5274a2acd1890be/2176-emr-white-paper.pdf> accessed 26 June 2025.

9 Department for Energy Security and Net Zero, 'Electricity Market Reform Delivery Plan' (2013) <https://assets.publishing.service.gov.uk/media/5a7b9fe0e5274a7318b8fdfa/181213_2013_EMR_Delivery_Plan_FINAL.pdf> accessed 26 June 2025.

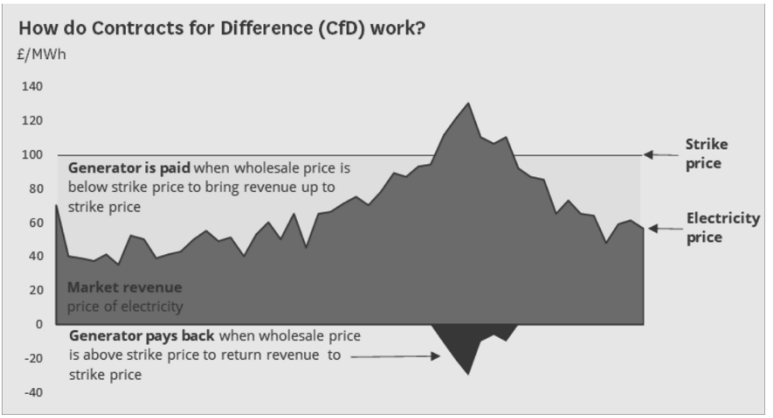
10 Department for Energy Security and Net Zero, 'Review of Electricity Market Arrangements (REMA): Second Consultation Document' (2024) <https://assets.publishing.service.gov.uk/media/65ef6694133c220011cd37cd/review-electricity-market-arrangements-second-consultation-document.pdf> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

There is no single definition of a CfD but the defining feature of CfDs is arguably the difference between the "market price" and the "strike price" agreed in advance by an electricity generator with the CfD counterparty. In the UK, CfDs are private law agreements between generators and the Low Carbon Contracts Company (LCCC), a government-owned entity.

If the market price for electricity generated by a generator is below the strike price specified in the contract, the LCCC makes payments to the generator to make up the difference. However, if the market price is above the strike price, the generator pays the LCCC the difference. This is illustrated by the chart below.

Figure 2: The Contract for Difference payment mechanism in the UK



Source: House of Commons Library[11]

The LCCC is responsible for settling the contracts. The payments, and repayments, paid and received by the LCCC for the CfD scheme are passed on to consumers' electricity bills.

CfDs enable new renewable generation projects to avoid the volatility of wholesale electricity markets and to achieve a stable long-term revenue profile over the term of the CfD contract. A stable and predictable long-term revenue profile can be desirable for a number of reasons. In the case of renewable energy projects in particular, this stable revenue profile makes it

11 House of Commons Library, 'Contracts for Difference – Research Briefing' (2023) <https://researchbriefings.files.parliament.uk/documents/CBP-9871/CBP-9871.pdf> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

easier for these projects to be developed using a project finance structure that is attractive to institutional investors with a long-term investment profile. The long-term nature of these investments allows lenders to offer lower interest rate premiums and longer debt tenures, thereby reducing the cost of capital for projects and

creating a virtuous circle that reduces the cost of energy over time as more projects are developed.[12]

CfDs are awarded in the UK for 15 years through auctions to allow competition between technologies and help keep prices low. The government sets a budget in advance, then sealed bids of strike prices submitted by developers are accepted sequentially from the lowest to the highest until the budget is exceeded. In April 2023, the government launched a consultation process on the introduction of criteria other than cost for assessment as part of its allocation process for CfDs. The purpose of introducing non-price factors (NPFs) is to incentivise projects and developers to deliver broader value to society and the environment across the wider supply chain, rather than simply rewarding the lowest-cost projects. In the response to the call for evidence, the government has identified the NPFs which are potentially appropriate for valuation under the CfD auction process, including innovation, sustainability, and capacity building.[13] The UK government intends to introduce these NPFs from Allocation Round 7, which is scheduled for 2025, onwards.

12 For a discussion, see Agnieszka Ason/Julio Dal Poz, 'Contracts for Difference as the Instrument of Choice for the Energy Transition' (2024) Oxford Institute for Energy Studies <https://www.oxfordenergy.org/publications/contracts-for-difference-the-instrument-of-choice-for-the-energy-transition/> and Rahmat Poudineh, 'Can UK green hydrogen contract for difference (CfD) match the cost-saving success of renewable electricity?' (2025) <https://www.oxfordenergy.org/publications/can-uk-green-hydrogen-contract-for-difference-cfd-match-the-cost-saving-success-of-renewable-electricity/> accessed 26 June 2025. accessed 26 June 2025.

13 Department for Energy Security and Net Zero, 'Introducing a Contracts for Difference (CfD) Sustainable Industry Reward' (2024) <https://www.gov.uk/government/consultations/introducing-a-contracts-for-difference-cfd-sustainable-industry-reward> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

2. Renewable Power Generation

CfDs have been instrumental in accelerating the deployment of renewable generation and the pace of decarbonisation in the UK over the past decade. CfD generation accounted for 15.1 % of UK renewable generation in 2022.[14]

To date, there have been six competitive auctions (Allocation Rounds) for CfD capacity. The outcome of the first round (AR1) was announced in February 2015 and the sixth round (AR6) in September 2025. Most of the capacity (including 95–96 % of the capacity awarded in AR2 and AR3) was offshore wind.[15] Strikingly, in 2023, the fifth Allocation Round received no bids from the offshore wind sector. While some considered the auction a failure, given the pressing need to accelerate the development of offshore wind capacity was not fulfilled, AR5 still managed to tender contracts to almost 2 GW of solar projects and to almost 1.5 GW of onshore wind projects. The lack of bidders in the offshore wind sector provided much-needed information about the mismatch between expected cost reductions assumed by the UK government, and the reality of an industry that was navigating a changed context with increased interest rates and higher supply chain costs. The results served to illustrate the shortcomings of the CfD allocation process and triggered a review of the process and of the budget required to accelerate new offshore wind projects in the changed cost context.

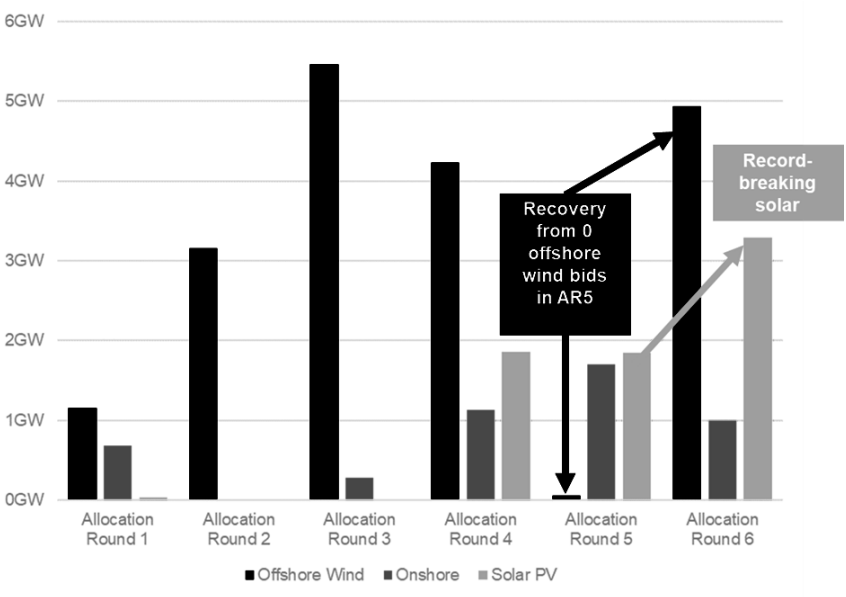
With the results published in September 2024, AR6 awarded contracts for 5GW of offshore wind, 1GW of onshore wind, and 3GW of solar, alongside 400MW of floating offshore wind and 28MW of tidal stream (marking a significant recovery from AR5 in relation to offshore wind).

14 House of Commons Library, 'Contracts for Difference – Research Briefing' (2023) <https://researchbriefings.files.parliament.uk/documents/CBP-9871/CBP-9871.pdf> accessed 26 June 2025.

15 See Marijke Welisch/Rahmat Poudineh, 'Auctions for allocation of offshore wind contracts in the UK' (2019) Oxford Institute for Energy Studies < https://www.oxfordenergy.org/publications/auctions-allocation-offshore-wind-contracts-difference-uk/> accessed 10 July 2024; House of Commons Library, 'Contracts for Difference – Research Briefing' (2023) <https://researchbriefings.files.parliament.uk/documents/CBP-9871/CBP-9871.pdf> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

Figure 3: The results of six allocation rounds in the UK to date



Source: Energy UK[16]

3. Other Clean Energy Projects

Following the successful experience with renewable CfDs, it has been recognised that the CfD concept may be suitable for applications beyond power generation. Work is underway in the UK on CfD-based business models, initially for clean hydrogen and CCS, but potentially evolving into multi-technology schemes.

(a) Hydrogen

The UK government's ambition is to deliver 5 GW of low-carbon hydrogen production capacity by 2030. Like in most other countries, the business

16 Energy UK, 'Energy UK Explains: Allocation Round 6' (2025) <https://www.energy-uk.org.uk/publications/energy-uk-explains-allocation-round-six/> accessed 26 June 2025

https://doi.org/10.5771/9783748962601-379 https://www.inlibra.com/de/agb - Open Access -

case for clean hydrogen in the UK relies on government policy.[17] The consultation on the design of a low-carbon hydrogen business model started in 2021 and resulted in the development of the UK Hydrogen Production Business Model (HPBM).

The HPBM is designed to incentivise the production and use of low-carbon hydrogen by providing producers with revenue support to overcome the operating cost gap between low-carbon hydrogen and fossil fuels to unlock private investment in hydrogen projects. Modelled after the CfD for renewable power, the HPBM is implemented through the Low Carbon Hydrogen Agreement (LCHA), a private law contract signed between a hydrogen producer and the LCCC. Following the earlier CfD precedent, the LCHA runs for a term of 15 years.

Revenue support under the HPBM is only provided for hydrogen volumes which: (i) comply with the Low Carbon Hydrogen Standard (LCHS), (ii) are sold to Qualifying Offtakers (volumes sold for export, blended into the natural gas grid, or sold to a Risk-Taking Intermediary are not qualifying) and (iii) are not sold and subsequently claimed under the Renewable Transport Fuel Obligation (RTFO) scheme. These conditions should ensure that only low-carbon hydrogen is supported, and that the value of this decarbonisation accrues to the UK and not to traders taking speculative positions in the emerging hydrogen market. It also ensures that volumes of hydrogen claimed under the RTFO are not supported under the HPBM in order to avoid overcompensation and market distortions.

LCHA effectively guarantees that even if producers cannot sell their hydrogen at a price high enough to recoup their cost of production and make an agreed return on investment then the counterparty will top them up to that level. The difference amount is calculated as the difference between the strike price (which is agreed by DESNZ at pre-contractual negotiations) and the reference price (which represents the market value of the hydrogen sold). The strike price is indexed to protect producers from cost changes beyond their control – for electrolytic producers, the strike price is indexed to Consumer Price Index (CPI), for CCS-enabled projects, the natural gas costs in the strike price are indexed to a natural gas benchmark and the non-gas costs to CPI.

17 See Martin Lambert, 'Clean Hydrogen Roadmap: Is greater realism leading to more credible paths forward' (2023) Oxford Institute for Energy Studies <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2023/09/Clean-Hydrogen-Roadmap-ET25.pdf> accessed 26 June 2025.

https://doi.org/10.5771/9783748962601-379 https://www.inlibra.com/de/agb - Open Access -

The LCHA will not allow the producer to fully recoup its costs where hydrogen is sold below the prevailing natural gas price – i.e. at a discount relative to the closest fossil fuel alternative. If producers do sell below the prevailing natural gas price, then any revenue support payable will be paid up from that prevailing natural gas price.

The work on implementing the HPBM is in progress. In December 2023, the UK government awarded CfDs to 11 green hydrogen projects with a total capacity of 125 MW, as a result of the first Hydrogen Allocation Round (HAR1). HAR2 followed quickly in early 2024, reflecting the UK government's aim to achieve up to 1 GW of electrolytic hydrogen production in operation or under construction by 2025.[18] HAR2, launched in early 2024, aims to allocate up to 875 MW of electrolytic hydrogen capacity – a significant scale-up in comparison with 27 shortlisted projects announced in April 2025.[19]

(b) Carbon Capture and Storage

Carbon Capture and Storage (CCS) is a key mitigation technology for the global energy system to reach its net zero target, but several characteristics and risks make financing CCS projects challenging. In response to those challenges, governments have adopted different approaches as they attempt to establish a sustainable CCS market through contributing capital and sharing costs and risks (that range from "minimal" to "full" government control options[20]).

In the UK, CCS plays a key role in the Net Zero Strategy and there has been significant government involvement in establishing the CCS market, including the ongoing work on developing CfD-based business models for CCS projects.

---

18 Department for Energy Security and Net Zero, 'Second Hydrogen Allocation Round (HAR2) Application Guidance Document' (2023) <https://assets.publishing.service.gov.uk/media/657b07c30467eb001355f853/hydrogen-allocation-round-2-application-guidance.pdf> accessed 26 June 2025.

19 Department for Energy Security and Net Zero, Notice: Second Hydrogen Allocation Round (HAR2) Application Guidance Document <https://www.gov.uk/government/publications/hydrogen-allocation-round-2-har2-projects> accessed 26 June 2025.

20 Bassam Fattouh/Hasan Muslemani/Raeid Jewad, 'Capture Carbon, Capture Value: An Overview of CCS Business Models' (2024) Oxford Institute for Energy Studies <https://www.oxfordenergy.org/publications/capture-carbon-capture-value-an-overview-of-ccs-business-models/> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

The Dispatchable Power Agreement (DPA), the planned contractual framework for power generation with CCS is a private law contract between a carbon-emitting power generator and the LCCC, based on the standard terms and conditions of the CfD for the fourth allocation round (AR4) and adapted to enable natural gas-fired CCS power plants to play a mid-merit role in meeting electricity demand, displacing unabated thermal power plants. The indicative Heads of Terms (HoTs) for the DPA were published in 2020. Departing from the usual 15-year contract term for renewables CfDs, generators have flexibility to choose an appropriate term length for the DPA that is between 10 and 15 years (regardless of whether developing a new build, repowered or retrofitted project).

The Industrial Carbon and Capture Contract (ICC Contract), which is another relevant contractual framework for CCS projects, has been drafted to offer consistency with the AR4 CfD and the DPA. The indicative HoTs for the ICC Contract were published in 2021. Many provisions of the earlier CfD contracts have been included in the HoTs, subject to minor alterations (e.g. references to 'generator' have been changed to 'emitter'), with other areas requiring substantial amendments to cater for the bespoke elements of the ICC business model. In essence, the ICC Contract is a private law contract between the emitter and the LCCC, which is for a 10-year contractual payment term with the option for a 5-year extension (subject to certain conditions). Like for the DPA, several updates on the proposed contract design for the ICC Contract have been published to date.

(c) Multi-technology Schemes

The examples of support schemes discussed above apply to either hydrogen, or CCS. This approach can be explained through the difference in business models for the relevant technologies but, at a later stage, it is feasible that CfD schemes for low-carbon solutions, like is common for renewable CfD schemes, will be applicable to two or more technologies (potentially grouped into different categories or "pots" in the allocation process).

Notably, a multi-technology approach is common feature of Carbon Contracts for Difference (CCfDs), similarly named support schemes. An example is the Dutch SDE++ scheme, which applies to five technology categories: renewable electricity, renewable heat, renewable gas, low-carbon heat, and low-carbon production. In the most recent and widely publicised development, in March 2024, German government launched the first bid-

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

ding round of its estimated €50 billion scheme for so-called "Climate Protection Contracts" (*Klimaschutzverträge)*, which work as CCfDs. The German CCfDs will offer payments for 15 years to industrial players (such as steel and chemicals producers) to switch to using green hydrogen, CCS, or other low-emissions methods of production. The scheme will also indirectly incentivise investment in production of green hydrogen infrastructure, such as hydrogen production plants and pipelines.

The German CCfDs include an early termination option after three years in the event that low-carbon production becomes cheaper than the alternative. The early termination feature is important as governments experiment with CfD-type instruments in different markets. One of the biggest challenges in creating a functioning market for clean hydrogen is exactly how to incentivise demand, given that early movers may be wary of committing to long-term contracts, knowing that the cost of low-carbon products (e.g. low-carbon hydrogen) will fall over time. The early termination feature attempts to address this delicate balance by offering long-term support contracts that are in place when prices are too high, but can be terminated when the competitive market starts to drive prices down. The UK HPBM model attempts to address the same challenge in a slightly different way by providing incentives in the CfDs for hydrogen producers to work with their offtakers (and customers) to bring prices down over time.

C. Contracts for Difference in Other Jurisdictions: Comparative Perspectives

Outside the UK, CfDs have been used to support renewable power projects mainly within the EU. A recent study found that CfDs have so far been used in nine EU Member States: France, Spain, Denmark, Greece, Hungary, Ireland, Italy, Poland, and Portugal.[21] In October 2023, the European Commission approved a CfD scheme for offshore wind projects notified by Lithuania and, in March 2024, a Romanian CfD scheme for solar and onshore wind projects. A CfD scheme is currently under development in Belgium and reportedly considered for clean energy projects in other EU Member States (including Estonia and Slovenia). Outside the EU, CfDs

21 Lena Kitzing et al., 'Contracts-for-Difference to support renewable energy technologies: Considerations for design and implementation' (2024) Florence School of Regulation <https://fsr.eui.eu/publications/?handle=1814/76700> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

have been used to support clean energy projects in other European jurisdictions (for example, in Albania, Serbia, and Norway). Outside Europe, CfDs have been applied sparingly. In Australia, for example, CfDs were initially introduced at state level (in Victoria) and are currently being considered for national rollout. In New Zealand, CfDs also feature prominently in consultation documents submitted as part of the process of developing a regulatory framework for offshore renewable energy and are seen as a compelling option for the local market.

For low-carbon solutions, CfDs are fast emerging as a mechanism to unlock the hydrogen economy. France, for example, plans to facilitate the deployment of 1 GW of electrolysis capacity through CfDs by 2026. At the EU level, CfDs have been considered among the potential design options for the European Hydrogen Bank. The pilot auction for the European Hydrogen Bank that opened in November 2023 was for a fixed premium subsidy.[22] However, CfDs can be considered for a competitive bidding process at the EU level at a later stage, especially when a reference clean hydrogen price is determined.

In Japan, a CfD scheme for the supply of low-carbon hydrogen was launched in 2024. The Japanese CfD scheme is for 15 years and is intended to subsidize the difference between the "Strike Price", which is the price required to establish a low-carbon hydrogen supply project, and the "Reference Price", which is the market price for fuels for which low-carbon hydrogen is a substitute. While the UK HPB requires identifying only one offtaker, Japan's Contract for Difference mandates that suppliers and offtakers jointly develop a Low Carbon Hydrogen Plan and that offtakers make new capital investments, ensuring greater demand certainty and coordinated growth of the market. As of May 2025, the CfD scheme was reportedly "oversubscribed, with applications significantly exceeding the ¥3trn ($21bn) budget."[23]

22 European Commission, 'European Hydrogen Bank pilot auction: 132 bids received from 17 European countries' (2024) <https://climate.ec.europa.eu/news-your-voice/news/european-hydrogen-bank-pilot-auction-132-bids-received-17-european-countries-2024-02-19_en> accessed 10 July 2024.

23 Hydrogen Insight, 'Significantly oversubscribed' $21bn Japanese clean hydrogen tender will be awarded on rolling basis: ministry' (2025) <https://www.hydrogeninsight.com/production/significantly-oversubscribed-21bn-japanese-clean-hydrogen-tender-will-be-awarded-on-rolling-basis-ministry/2-1-1822221> accessed 26 June 2025.

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

The discussion on using CfDs to support hydrogen projects is currently starting in other parts of the world and there is certainly scope for considering CfDs to incentivise hydrogen economy in other jurisdictions.[24]

D. Conclusions and Outlook

After a decade of market experience, the UK government continues to see the CfD scheme as fundamental to its net zero objectives. New CfD schemes are currently either planned or under development in several jurisdictions. Recent work on CfDs outside Europe will increasingly change the role (and common perception) of CfDs as a Europe-centric support scheme. In a parallel development, CfDs are no longer exclusively focused on renewable and nuclear power generation and are increasingly applicable to low-carbon solutions.

For any new CfD scheme, a detailed legal, regulatory and contractual framework needs to put in place. The whole process spanning from legislative proposals to the actual contracts typically takes several years and involves multiple stakeholders, including through public consultations of the scheme. When considering CfDs as a revenue support mechanism for clean energy projects, governments need to address a number of questions about how to finance, structure and manage the scheme. In the long term, one of the key considerations for a successful CfD scheme will be how to manage the instrument in a changing market environment. CfDs need to provide legal certainty to the market, but as such need to be continually refined to fully reflect prevailing market conditions and the state of development of the relevant technologies. The challenge will therefore be how to maintain CfDs and, if necessary, how to modify them in a way that does not infringe on the rights of their beneficiaries.

Eventually, CfDs in their current form will be phased out – as is usual with support schemes for any new technology, most likely when the fundamentals of clean energy projects improve to the point where they can be fully market driven, including through long-term market procurement mechanisms such as PPAs.

However, given the pressing need to accelerate investment in energy transition solutions, in the short-term the opposite will be true, with the

24 For a more comprehensive comparative discussion, see: Agnieszka Ason/Julio Dal Poz (n 12).

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

demand for more (and more effective) revenue support having to be offered not only to renewable power projects but to other clean energy solutions such as hydrogen and CCS. Over the past decade, the growing demand for support schemes for clean energy has created a favourable environment for the introduction of CfDs. Applying the CfD approach to low-carbon solutions and other emerging uses will bring new challenges (e.g. in terms of the design of new CfDs and their interaction with CCfDs and other support schemes), but will also offer the benefit of building on the experience and lessons learned – mainly in the UK – from the successful use of CfDs to date.

Bibliography

Ason A/Dal Poz J, 'Contracts for Difference as the Instrument of Choice for the Energy Transition', Oxford Institute for Energy Studies <https://www.oxfordenergy.org/publications/contracts-for-difference-the-instrument-of-choice-for-the-energy-transition/> accessed 26 June 2025

Department for Energy Security and Net Zero, *Electricity Market Reform Delivery Plan* (2013) <https://assets.publishing.service.gov.uk/media/5a7b9fe0e5274a7318b8fdfa/181213_2013_EMR_Delivery_Plan_FINAL.pdf> accessed 26 June 2025

Department for Energy Security and Net Zero, *Net Zero Strategy: Build Back Greener* (2021) <https://www.gov.uk/government/publications/net-zero-strategy> accessed 26 June 2025

Department for Energy Security and Net Zero, *Second Hydrogen Allocation Round (HAR2) Application Guidance Document* (2023) <https://assets.publishing.service.gov.uk/media/657b07c30467eb001355f853/hydrogen-allocation-round-2-application-guidance.pdf> accessed 26 June 2025

Department for Energy Security and Net Zero, *Offshore Wind Net Zero Investment Roadmap* (2023) <https://www.gov.uk/government/publications/offshore-wind-net-zero-investment-roadmap> accessed 26 June 2025

Department for Energy Security and Net Zero, *Review of Electricity Market Arrangements (REMA): Second Consultation Document* (2024) <https://assets.publishing.service.gov.uk/media/65ef6694133c220011cd37cd/review-electricity-market-arrangements-second-consultation-document.pdf> accessed 26 June 2025

Department for Energy Security and Net Zero, *Introducing a Contracts for Difference (CfD) Sustainable Industry Reward* (2024) <https://www.gov.uk/government/consultations/introducing-a-contracts-for-difference-cfd-sustainable-industry-reward> accessed 26 June 2025

Department for Energy Security and Net Zero, *Notice: Second Hydrogen Allocation Round (HAR2) Application Guidance Document* (2023)

Department of Energy and Climate Change, *Planning our electric future: a White Paper for secure, affordable and low-carbon electricity* (2011) <https://assets.publishing.service.gov.uk/media/5a78b0dce5274a2acd1890be/2176-emr-white-paper.pdf> accessed 26 June 2025

https://doi.org/10.5771/9783748962801-379 https://www.inlibra.com/de/agb - Open Access -

Electricity System Operator, *Britain's Electricity Explained: 2023 Review* (2024) <https://www.nationalgrideso.com/news/britains-electricity-explained-2023-review> accessed 26 June 2025

Energy UK, 'Energy UK Explains: Allocation Round 6' (2025) <https://www.energy-uk.org.uk/publications/energy-uk-explains-allocation-round-six/> accessed 26 June 2025

European Commission, *European Hydrogen Bank pilot auction: 132 bids received from 17 European countries* (2024) <https://climate.ec.europa.eu/news-your-voice/news/european-hydrogen-bank-pilot-auction-132-bids-received-17-european-countries-2024-02-19_en> accessed 26 June 2025

European Commission, *European Hydrogen Bank pilot auction: 132 bids received from 17 European countries* (2024) <https://climate.ec.europa.eu/news-your-voice/news/european-hydrogen-bank-pilot-auction-132-bids-received-17-european-countries-2024-02-19_en> accessed 26 June 2025

Fattouh B/Muslemani H/Jewad R, 'Capture Carbon, Capture Value: An Overview of CCS Business Models' (2024) Oxford Institute for Energy Studies <https://www.oxfordenergy.org/publications/capture-carbon-capture-value-an-overview-of-ccs-business-models/> assessed 26 June 2025

House of Commons Library, *Contracts for Difference – Research Briefing* (2023) <https://researchbriefings.files.parliament.uk/documents/CBP-9871/CBP-9871.pdf> accessed 26 June 2025

House of Commons Library, *Planning for Solar Farms – Research Briefing* (2024) <https://researchbriefings.files.parliament.uk/documents/CBP-7434/CBP-7434.pdf> accessed 26 June 2025

Hydrogen Insight, *Significantly oversubscribed' $21bn Japanese clean hydrogen tender will be awarded on rolling basis: ministry* (2025) <https://www.hydrogeninsight.com/production/significantly-oversubscribed-21bn-japanese-clean-hydrogen-tender-will-be-awarded-on-rolling-basis-ministry/2-1-1822221> accessed 26 June 2025

Kitzing L et al., 'Contracts-for-Difference to support renewable energy technologies: Considerations for design and implementation' (2024) Florence School of Regulation <https://fsr.eui.eu/publications/?handle=1814/76700> accessed 26 June 2025

Lambert M, 'Clean Hydrogen Roadmap: Is greater realism leading to more credible paths forward' (2023) Oxford Institute for Energy Studies <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2023/09/Clean-Hydrogen-Roadmap-ET25.pdf> accessed 26 June 2025

National Grid, *How much of the UK's energy is renewable?* (2024) <https://www.nationalgrid.com/stories/energy-explained/how-much-uks-energy-renewable> accessed 26 June 2025

Poudineh R, 'Can UK green hydrogen contract for difference (CfD) match the cost-saving success of renewable electricity?' (2025) <https://www.oxfordenergy.org/publications/can-uk-green-hydrogen-contract-for-difference-cfd-match-the-cost-saving-success-of-renewable-electricity/> accessed 26 June 2025

https://doi.org/10.5771/9783748962601-379 https://www.inlibra.com/de/agb - Open Access -

Welisch M/Poudineh R, 'Auctions for allocation of offshore wind contracts in the UK' (2019) Oxford Institute for Energy Studies <https://www.oxfordenergy.org/publications/auctions-allocation-offshore-wind-contracts-difference-uk/> accessed 26 June 2025

https://doi.org/10.5771/9783748962601-379 https://www.inlibra.com/de/agb - Open Access -

https://doi.org/10.5771/9783748962601-379 https://www.inlibra.com/de/agb - Open Access -