

# The development of the UK's offshore wind sector 2010–16



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## About this report

This report looks at how the government initiated, designed and implemented offshore wind policy in the years 2010–16. It draws on an Institute for Government policy reunion held in May 2023, which brought together officials, ministers, industry representatives and external experts involved in offshore wind policy at this time to discuss what made it an overall success, and what lessons the current (and future) government can learn to inform future net zero governance and decision making.

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# Contents

Introduction	4
Offshore wind before 2010	6
The policy journey to 2010	8
Policy development from 2010	10
Policy decisions	16
Implementation, a new government and political challenges	20
Outcomes after 2016	23
Impact on today – and future challenges to the offshore wind sector	26
Lessons for policy making	29
Conclusion	34
References	35
About the authors	39

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# Introduction

The period from 2010 to 2016 has been rightly hailed as transformational for the UK offshore wind sector. Through well-designed price support, the government unlocked low-cost capital for new projects and encouraged rapid technology innovation. This was supported by a long-term budget, clear new planning processes, competitive grid transmission licences and a Green Investment Bank. Installed UK offshore wind capacity increased sevenfold in those six years, while the prices paid for new offshore electricity are promised to decline more than fourfold from £150/MWh in 2016/17 to £37/MWh (in 2012 prices)\* for projects due for delivery in 2026/27.

This report looks at how the government initiated, designed and implemented offshore wind policy in the years 2010–2016. It draws on an Institute for Government policy reunion held in May 2023, which brought together officials, ministers, industry representatives and external experts involved in offshore wind policy at this time to discuss what made it an overall success, and what lessons the current (and future) government can learn to inform future net zero governance and decision making.

It finds that the key factors in success were:

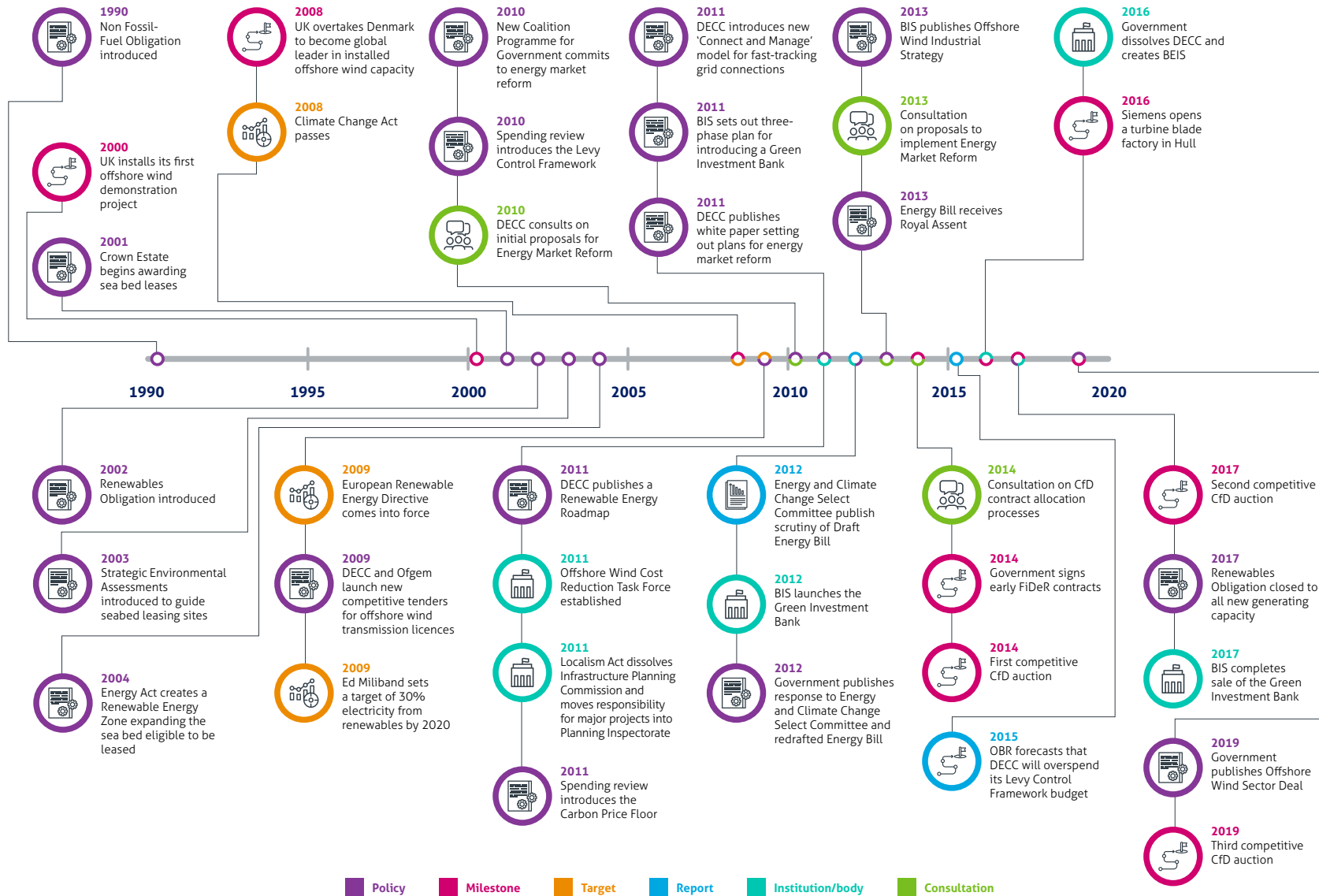
- the clear mandate the now defunct Department of Energy and Climate Change (DECC) had to lead long-term electricity market reform, supported by legal commitments and the policy direction given by David Cameron and Nick Clegg
- the capacity and capability of DECC officials to deliver well-designed policy, aided by work that began under previous governments
- the use of effective mechanisms in the centre of government (No.10, the Treasury and Cabinet Office) to co-ordinate a cross-government approach to developing the offshore wind sector.

The government's April 2022 British Energy Security Strategy sets a goal for the UK to generate 50GW of offshore wind energy by 2030. But the offshore wind sector faces several stumbling blocks to reaching this aim – it will require greater support for supply chains, planning to be unblocked, faster grid infrastructure reform, and careful management of price support during the current period of high inflation. These are all things the government will need to urgently address if it is to ensure the UK offshore wind sector remains a success story.

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\* All strike prices in this document are reported as 2012 prices.

Figure 1 **Timeline of key events in UK offshore wind sector development, 1990–2019**



Source: Institute for Government analysis of various government strategies, press releases and policy documents.

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## Offshore wind before 2010

The UK adopted ambitious climate targets in the late 2000s. In 2007 Tony Blair committed to the EU Renewable Energy Directive, which – after it came into force in 2009 – required the UK to source 15% of *all energy* from renewables by 2020. At the time many thought it was “pretty unachievable”: a leaked internal briefing revealed that officials thought the best the UK could aim for was less than two thirds of that;<sup>1</sup> some questioned whether the government had understood the difference between energy and electricity.<sup>\*2</sup>

In 2008 the Labour government passed the Climate Change Act, which for the first time set the UK’s long-term climate targets in law. It aimed initially to reduce greenhouse gas emissions by 80% (from 1990 levels) by 2050.<sup>3</sup> In 2009 the secretary of state of the newly created energy and climate change department, Ed Miliband, set an additional target of 30% of *all electricity* to come from renewables by 2020, requiring a more than fivefold increase in the UK’s renewable share of electricity in just over a decade.

The Climate Change Committee, created under the 2008 Act, was set up to provide advice and monitor progress. In its first report in 2008, the CCC had argued the 80% target could be met without sacrificing prosperity or economic growth, and championed wind power as a “proven form of low-carbon power generation”.<sup>4</sup>

In the run-up to the 2010 election, all three main parties promised to continue raising ambition. Labour highlighted the progress it had already made and said it would raise again the UK’s target for renewable electricity, while still emphasising the role of “low-carbon sources”, which included “clean fossil fuels”. It said its plans could see offshore wind power increase “up to 40 times”, promising planning and regulatory reform, as well as a new Green Investment Bank, to drive progress.<sup>5</sup>

The Conservatives criticised Labour’s record, pointing out that the UK’s share of renewable energy in power generation was “the worst record of any major EU nation”.<sup>6</sup> The party similarly promised to “put Britain at the forefront of the green technology revolution”, matching the pledge to create a Green Investment Bank, and promising reforms to carbon pricing including changes to the climate change levy.<sup>7</sup>

The Liberal Democrats offered the most detailed plans for renewable energy as part of a “green stimulus plan”, which they said would create thousands of jobs. Like Labour, the party pledged a more ambitious target of 40% of electricity from clean sources by 2020 (while offering a stricter definition of ‘clean’, limited to renewables). It went further in setting out how to achieve this by calling for “guaranteed price support” and up to £400 million investment in refurbishing shipyards to manufacture turbines.

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\* Electricity is a type of energy. Total energy consumption includes solid fuels, gas, oil, electricity, bioenergy and heat.

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Following the election, the Conservative–Liberal Democrat coalition was formed. Chris Huhne, a Liberal Democrat, was made Secretary of State of the Department for Energy and Climate Change: one of five cabinet posts allocated to the junior coalition partner. The coalition government inherited the previous government’s targets, and Huhne was tasked with leading the coalition’s programme of electricity market reform and transforming the UK’s energy supply.

In offshore wind, the coalition inherited a promising start. The UK had installed its first demonstration project in 2000 – a pair of 2 megawatt (MW) turbines off the Northumbrian coast, sufficient to power 1,000–2,000 homes. By 2010 installed capacity had risen to 674MW – taking the world lead from Denmark, which had dominated in the early 2000s – with large commercial projects up and running or under construction along the east coast and in the north-west of England.<sup>8</sup> A project to erect 100 3MW turbines off the Kent coast was the largest in the world.

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## The policy journey to 2010

Wind was first used to generate electricity in Scotland in the 1880s but the modern wind power sector did not emerge until almost a century later.<sup>9</sup> In the late 1970s and early 1980s, turbines were developed in Denmark and the US, and developers quickly identified benefits to siting them offshore, chiefly in higher and more consistent wind speeds.

The opportunity to identify and develop much larger areas than was possible onshore was another advantage, and despite additional design complexities and costs of installing, developers over time began to benefit from economies of scale by increasing the size of turbines in a way that would not be possible with onshore planning policies.

The investment case also had great potential, given turbines could supply energy at minimal marginal cost for many years once they had been installed. But they required sizeable upfront investment – particularly given wind was then a nascent sector and expertise and capacity needed to be developed – and there was uncertainty about how quickly the costs would come down. Other renewable technologies, like solar, were also vying for investment and slightly more developed, and it was unclear which would become dominant in future renewable supply. All of this served to make investors cautious, so reducing the cost of capital was a key.

In the UK, price support for renewable technologies had first been provided as early as the 1990s through the non-fossil fuel obligation, a mechanism through which government would announce the amount of non-fossil fuel energy (including nuclear) it required the market to produce, after which generators would compete for contracts in exchange for guaranteed premium prices financed from a levy on consumers' energy bills.<sup>10,11</sup>

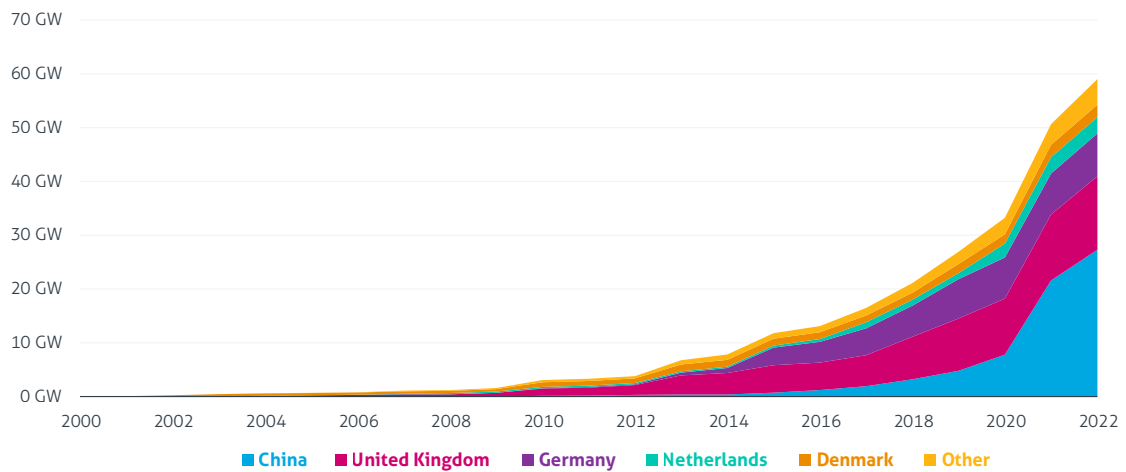
The Utilities Act 2000 expanded this by creating the 'renewables obligation' (RO), a government scheme requiring all electricity suppliers to deliver a prescribed, gradually increasing, proportion of electricity from renewable sources. Suppliers had to earn a threshold number of 'renewable obligation certificates' (ROCs) to present to the government, either through producing renewable energy themselves or paying into a 'buy-out fund' that subsidised others who did. The RO initially took a 'technology-neutral' approach, which triggered investment in the most developed, cheaper renewable technologies like hydroelectric power and onshore wind. From 2009, price support was 'banded' to boost less advanced technologies; every 1MWh of new offshore wind electricity now contributed two ROCs towards suppliers' obligation (twice as much as for more developed technologies like onshore wind).<sup>12</sup>



Alongside price support, an essential step for developing offshore wind projects was co-ordinating permissions to access the sea bed. As owner of the British coastline, the Crown Estate began awarding leases for areas of the sea bed from 2001, granting developers the right to install wind projects offshore. In accordance with a 2001 European directive, from 2003 the government conducted offshore energy strategic environmental assessments to guide the location of leasing sites.<sup>13</sup> The Energy Act 2004 created a renewable energy zone adjacent to UK territorial waters, expanding the area eligible to be leased.<sup>14</sup>

The late 2000s saw the results of the decade’s rapid innovation in offshore wind technology, led by the emergent market in Denmark. By 2007 the first 5 MW turbine was installed in the UK,<sup>15</sup> and by 2010, after a decade of supportive policies, the UK led Europe in offshore wind capacity (Figure 2). But renewable sources still made up only 7% of all electricity generated domestically, a proportion that would need to be more than quadrupled to meet the 2020 target.<sup>16</sup>

Figure 2 **Cumulative global offshore wind capacity, 2000–22**



Source: Institute for Government analysis of US Department of Energy Office of Energy Efficiency & Renewable Energy, *Offshore Wind Market Report 2023, 2000–2022*.

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## Policy development from 2010

The coalition's programme for government, agreed over 14 days in May 2010 and unveiled by David Cameron and Nick Clegg, provided the basis for the new government. It described climate change as "one of the gravest threats we face" and promised to "use a wide range of levers to cut carbon emissions, decarbonise the economy and support the creation of new green jobs and technologies".

It said the coalition would raise the government's target for the proportion of energy from renewable sources, subject to CCC advice. The government was to "establish a full system of feed-in tariffs\* in electricity" – as well as maintaining the renewables obligation – and reform energy markets and the grid to support renewables deployment. This would include establishing a 'carbon price floor', guarantees for secure energy supply and a Green Investment Bank. Officials in DECC saw this as a strong basis for action. As one remembered:

**"The coalition agreement did a lot. You knew where you were. The first question with a new government is normally which bits of manifesto did you mean and not mean – with the coalition agreement we knew that that was the official plan, which provided stability and meant the department had confidence to design the programme."**

The department had a running start on policy design, as officials had already undertaken extensive work on options for energy reform under Labour. They presented the incoming ministerial team with more than 20 options for delivering electricity market reform.<sup>17</sup> Participants at the reunion agreed that having "two years of intensive work" exploring the range of policy combinations available and modelling how they would work together to reach government targets was crucial for ministers to "hit the ground running". By December 2010 DECC had initial proposals for electricity market reform, which they opened up to public consultation for feedback.

When considering the most effective policy design, officials said that DECC had a clear, "laser focus" on two key objectives set by Cameron and DECC ministers. One was to bring down the cost of capital for renewable energy developers, seen as essential for unlocking investment at the pace needed by 2020, which was more than double the 2010 rate.<sup>18</sup> This was important because as the market stood in 2010 investing in fossil fuels remained a safer bet for developers. Investors still faced large upfront costs for renewables projects, coupled with an uncertain return on investment given fossil fuels still led market prices; renewables like solar and wind also had volatile energy supply rates to contend with.<sup>19</sup>

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\* In this context, a feed-in tariff is a price support mechanism that guarantees suppliers will get a certain price for renewable electricity for a period of time. This is separate to the 'Feed-In Tariffs scheme', introduced in April 2010, which was specific to householders, allowing them to receive payments for electricity generated by installed systems in their home, like solar panels. See: <https://publications.parliament.uk/pa/cm201012/cmselect/cmenergy/742/74208.htm> and [www.ofgem.gov.uk/environmental-and-social-schemes/feed-tariffs-fit](http://www.ofgem.gov.uk/environmental-and-social-schemes/feed-tariffs-fit)

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Price support was decided upon as the tool to bring the costs of capital down, aiming to accelerate growth in renewable energy capacity through reducing developers' costs and by creating a competitive market that fuelled innovation. However, at this stage offshore wind was not agreed as the main target, with one participant commenting that it was viewed by ministers as "useful, rather than a game-changer".

The second key objective for offshore wind policy was to secure a domestic factory manufacturing parts for offshore wind projects. For Cameron, this would be a clear political win, selling climate change policy not just on its own terms, but on the grounds of bringing jobs and investment to deindustrialised areas in economic decline.

## Options for price support

The biggest question for policy makers to decide was how they would design new price support to reduce the cost of capital for developers.

Based on their previous work, ministers and officials in DECC agreed that the cheapest and most effective option would be a 'contracts for difference' (CfD) approach: a long-term contract where generators receive a fixed 'strike price' for their electricity, delivered through the market price and a subsidy. Under initial plans, a 'settlement agent'\* would co-ordinate payments between energy suppliers and generators, with liability ultimately borne collectively by suppliers. If the market price was lower than the strike price, the settlement agent would order suppliers to pay the difference to generators. If the market price was higher than the strike price, generators would return money to suppliers (and ultimately to consumers).

Officials said it was important that at these early stages they agreed that they would not fundamentally reform the wholesale energy market; for instance, through introducing locational marginal pricing (allowing prices to vary depending on network location) or a 'green power pool' model (creating separate markets for as-available, renewable electricity and flexible, on-demand electricity).<sup>20</sup> They agreed that it was too early to introduce these wider wholesale market reforms in 2010, as the renewable energy market was too small to make them beneficial. This decision helpfully narrowed the policy options down to how price support could be 'bolted on' to the market as it was, giving officials a clear direction and scope for their policy advice. In 2023, as the UK's renewable energy capacity is much greater, these options have been revived as potential directions for future electricity market reform.<sup>21</sup>

To minimise disruption to wind developments already in motion, DECC suggested plans for a transition period where the RO would continue until 2017, overlapping with the new CfDs for a few years to allow developers to continue planning to use the RO if they wanted to. The total cost of this price support would be limited by the Treasury's levy control framework: an annual cap on DECC total levy-funded spending introduced in the 2010 spending review.

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\* Settlement agents are third parties that ensure assets are collected, verified and disbursed in accordance with the terms of a contract. In this case, the government expected that the agent would be Elexon, which oversees other balancing and settlement transactions in the electricity market, [www.elexon.co.uk](http://www.elexon.co.uk)

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Feedback from the public consultation on these proposals was mixed. Some agreed with the government's approach, but most wanted more detail on how the CfD would work in practice. Many renewable energy companies preferred an alternative 'premium feed-in tariff' (a static payment received in addition to revenues from selling electricity in the wholesale market), which functioned more like the RO and was trusted by investors to bring returns.

DECC set out its response in a white paper in July 2011.<sup>22</sup> Drawing on modelling for the two price support options, it decided to continue with the CfD approach. The department assessed that this would be more cost-effective, more resilient to unanticipated changes in fossil fuel prices or technology costs, and had a better chance of meeting carbon targets than a fixed tariff, since renewable supply would be guaranteed through contracts rather than left to the individual decisions of generators dependent on the market incentives available.<sup>23</sup> DECC also fleshed out plans for the transition period: alongside allowing developers to continue to choose RO price support until March 2017, it said it would explore options for individually agreed early feed-in tariff contracts where projects were due to reach a final investment decision before the first CfDs became operational (contracts that would become known as 'final investment decision enabling for renewables', or FiDeR).

DECC also confirmed plans for price support to work in conjunction with a wider policy package to decarbonise energy supply, including a carbon price floor (first announced in the 2011 budget, adding to the EU emissions trading system to place a minimum, increasing price on UK carbon dioxide pollution), an emissions performance standard (placing a regulatory limit on the amount of CO<sub>2</sub> produced by new fossil fuel power stations, to encourage investment in carbon capture and storage), and a 'capacity mechanism' (a system to guarantee a secure future electricity supply during the transition to renewables while ageing fossil-fuel power plants closed). This set of policy proposals formed the basis for the draft Energy Bill, published in May 2012.

DECC also announced in 2011 that it aimed to reduce the costs of offshore wind energy to less than £100/MWh for projects reaching a final investment decision in 2020: a proposal that reunion participants told us elicited a shocked "collective gasp" when it was first announced to industry leaders, given that costs were as much as £191/MWh at the time.<sup>24</sup> Aware that any transition would require co-ordination across government, the Crown Estate and industry, Charles Hendry, the energy minister, established an Offshore Wind Cost Reduction Task Force – a partnership between these stakeholders to mutually identify pathways to achieve the £100/MWh target.

The task force was chaired by Andrew Jamieson, the chair of industry body RenewableUK, and its members represented at least 15 key industry stakeholders.<sup>25</sup> Reunion participants told us that its work was vital for guiding policy and giving credibility to the government's direction. Two studies published at the same time as the draft Energy Bill – the task force's final report on offshore wind cost reduction, and a report by the Crown Estate (written in collaboration with government and industry) – set out feasible, industry-endorsed pathways that would reduce offshore energy costs to less than £100/MWh by 2020.<sup>26,27</sup> Reunion participants told us that this

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thorough analysis inspired confidence – from politicians and stakeholders – that the government’s ambitions were bold but realistic.

### **A bump in the road: Treasury and select committee concerns**

However, the Treasury and DECC were at loggerheads on electricity market reform. Chancellor George Osborne, sceptical of renewables’ viability, supported a large role for gas-based power for the transition away from coal, telling the 2011 Conservative Party conference: “We’re not going to save the planet by putting our country out of business.”<sup>28</sup>

There were particular clashes between Osborne and Ed Davey, who replaced Chris Huhne as secretary of state for DECC in February 2012. Osborne, agreeing with his adviser Dieter Helm, opposed DECC’s CfD proposals, and instead wanted to focus on just increasing carbon prices (which wouldn’t disincentivise investors from investing in gas).<sup>29</sup>

In a letter leaked to the *Financial Times*, Osborne said he wanted to insert a clause into the Energy Bill enabling the government to shut down the CfD programme at any time, and that he wanted the government to give “a clear strong signal that we regard unabated gas as able to play a core part of our electricity generation to at least 2030”.<sup>30,31</sup> Davey, meanwhile, supported some investment in gas to ease the transition to renewables,<sup>32</sup> but saw renewables as the future of UK energy, and supported CfDs as the mechanism to deliver that transition.

Reunion participants told us there was “massive debate” about the size of the levy control framework (LCF), how much of the funding pot would go to CfD contracts versus earlier transitional FiDeR contracts, and when the government should begin using competitive auctions to allocate CfD contracts. They confirmed that DECC recommended splitting the pot equally between FiDeR and the CfD, aiming to use the FiDeR contracts to boost early supply chain development before the CfDs accelerated demand. In an October 2013 consultation, DECC proposed plans to transition to competitive CfD auctions as soon as was “practicable”, and in the meantime to offer at least 50% of the first round of CfD contracts on a “first come, first served” basis.<sup>33</sup>

However, reunion participants told us that the Treasury had concerns about the costs of these transition measures, and in particular the risk that early contracts would commit too much of DECC’s LCF budget too early, and offer worse value for money than competitive auctions. As a DECC report later summarised, the “tension at the heart of the LCF” was the need to incentivise investors while minimising costs for consumers.<sup>34</sup> Offering the right budget for FiDeR contracts, and then the auctions, would be crucial for maintaining investor confidence while reaching competitive prices.

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Major disagreements about design were ultimately decided in meetings between the Quad (Cameron, Clegg, Osborne and Danny Alexander) described as a critical “forcing mechanism” for decision making. Participants particularly recognised the role of Jeremy Heywood, the cabinet secretary, in “brokering” the fine details with senior civil servants, facilitating more efficient, productive conversations by the time ministers put issues for final decisions to the Quad.

Policy design was also shaped by parliamentary scrutiny. In July 2012, an Energy and Climate Select Committee report scrutinising DECC’s draft Energy Bill raised concerns that the policy design was “unworkable”,<sup>35</sup> citing “genuine uncertainty about whether any [CfD] contracts would be legally enforceable” (DECC said that the settlement agent would share payment liability collectively between suppliers and generators, but it was unclear how this would work in practice). They also argued that investors would face an unacceptable risk of losing out on a CfD after investing considerably in an otherwise fully consented project, and warned that the barriers for independent generators to obtain financing were too prohibitive. DECC had to decide how it would act on this guidance to resolve the committee’s concerns.

To help decide how the auctions would run, DECC sought advice from external auction design experts, which reunion participants said was invaluable. The main decision for policy makers was whether to give developers free rein to choose their suppliers, or to include stipulations that projects had to use a certain percentage of domestic supplies (the former keeping auctions fully focused on price competition, the latter helping grow a domestic supply chain).

### **Supporting reforms**

Beyond price support, the government also had to decide what reform was needed in supporting areas to ensure new capacity could be installed quickly once projects had secured finance. DECC’s July 2011 roadmap set out its strategy.<sup>36</sup> Alongside specific priority actions for offshore wind – including plans to invest £30m in innovation and £60m in new wind manufacturing facilities at port sites in England – it recognised the wider cross-cutting actions needed to speed up renewables deployment: facilitating access to the grid, developing supply chains, and tackling delays in the planning process.

On grid access, in 2009 DECC and Ofgem had launched new competitive tenders for transmission licences, designed to ensure new wind farms had cost-effective transmission links. Continuing work initiated under the previous government, DECC also introduced a new ‘connect and manage’ model in February 2011, allowing new energy projects to apply for a fast-tracked grid connection once they had met certain project milestones.<sup>37</sup> However, there is little evidence that the government had anticipated at this stage the scale at which grid infrastructure would need to expand in future to accommodate new renewable energy.<sup>38</sup>

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Plans to develop supply chains were also in the early stages; the Offshore Wind Cost Reduction Task Force had warned of “a number of potential bottlenecks within the supply chain” as the scale and pace of offshore wind installation increased, and the government promised to consult a new Offshore Wind Developers Forum to decide further steps.<sup>39</sup>

Planning reform was further ahead. As promised in the coalition’s programme for government, to fast-track major infrastructure planning processes the Localism Act 2011 moved responsibility for major projects out of the dissolved Infrastructure Planning Commission, to a new Major Infrastructure Planning Unit within the Planning Inspectorate.<sup>40</sup> This would consider applications for energy infrastructure and recommend a decision to the secretary of state for energy and climate change, with the aim of providing a guaranteed, faster timeline for planning decisions, and ensuring a secure future energy supply as older power stations were decommissioned. To reduce delays related to environmental disputes, the roadmap also set out plans to improve the evidence base for strategic environmental assessments, and to understand and negotiate the implications of marine conservation zones on offshore projects.

While DECC was leading electricity market reform strategy and price support design, the Department for Business, Innovation and Skills (BIS) had responsibility for setting up the Green Investment Bank (GIB), as promised in the programme for government.<sup>41</sup> Its objective was to use public funding to leverage private capital to meet the substantial investment need for green infrastructure (in the order of “hundreds of billions of pounds” by 2025).<sup>42</sup>

The key decision for government was to determine the extent of the GIB’s powers, which could range from a fund – a means of allocating government money to private projects – to a bank, able to raise its own finance and offer a range of products tailored to meet commercial needs, including loans, equity investment and risk-reduction finance. The government’s Green Investment Bank Working Group (established in August 2010) and the Environmental Audit Committee both recommended the latter, but the government had to balance this against its fiscal objectives to reduce public sector net debt and balance the fiscal deficit.<sup>43</sup>

From September 2012, BIS also began leading a renewed government focus on industrial strategy, spearheaded by the secretary of state, Vince Cable. It aimed to embed long-term strategic planning in industrial policy, and introduce a co-ordinated government approach to manage “genuine market failures”, including where “the costs of environmental damage are underestimated by markets”. BIS identified renewable energy as a key sector where government and industry could work together to maximise commercial opportunities and support large-scale investment in the UK supply chain, but it had not at this stage developed specific plans to support the offshore wind sector.<sup>44,45</sup>

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## Policy decisions

In November 2012, the government published its response to the select committee's report into the draft Energy Bill, and introduced the redrafted bill to the House of Commons. It laid out the proposed electricity market reforms in detail, including a document setting out the standard terms for CfD contracts. After much arbitration between departments (co-ordinated by the cabinet secretary, Jeremy Heywood), one reunion participant confirmed that this document had been approved "line by line" by the Quad, which meant that once it had been decided it was "relatively plain sailing" on the politics for rest of the coalition years.

The Energy Act received royal assent in December 2013.

### Electricity market reform

On price support, the government revised the contracts for difference approach to respond to the select committee's concerns. To ensure investor confidence and legal accountability on both sides, the CfD contracts were delivered via a new government-owned company – the Low Carbon Contracts Company – through which strike price subsidies (or arrears) were administered.

To resolve the issue of investors risking missing out on a CfD very late in the investment process, while still minimising the risk of investors being granted a CfD for a project that did not deliver, the government incorporated a two-step CfD allocation process. This allowed developers to apply for a CfD earlier in the investment process after clearing "lower, but still meaningful hurdles" like having planning permission and securing a grid connection, and then clearing further hurdles post CfD-award to retain the contract.

Responding to the select committee's criticism that the policies did not provide enough support for independent generators, the government included powers in the Energy Act to enable it to intervene if necessary to improve liquidity and promote the availability of power purchase agreements, both of which would remove barriers to entering the energy market.

To pay for price support, the Treasury set the levy control framework (LCF) maximum budget at £7.6 billion (in 2012 prices) by 2020/21, just under the £8bn recommended by the Climate Change Committee. DECC apportioned £5bn of this to existing and projected new commitments under the previous feed-in tariff and renewable obligation schemes. It allocated a further £1.2bn to FiDeR contracts, leaving £1.4bn available for all CfD contracts paying out in 2020/21.<sup>46</sup>

Responding to its October 2013 consultation on Electricity Market Reform implementation, and a subsequent January 2014 consultation specifically on CfD contract allocation processes, DECC abandoned its first come first served transition mechanism.<sup>47</sup> It instead announced plans to move straight to competitive auctions, citing the "strong progress of the renewables pipeline" and the associated risk of



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“high demands” on the LCF budget.<sup>48</sup> Interviews after the policy reunion confirmed that this decision was primarily guided by the Treasury, which advised that moving to competitive auctions would offer the best value for money, while DECC’s original approach would risk unacceptably exceeding its budget envelope.

Following its new delivery plan, DECC allocated £350m for developers to bid for in the first competitive CfD auction, which ran from October 2014 to March 2015. The auction was split into two pots: pot 1, featuring more developed technologies, competed for £65m; and pot 2, featuring less developed technologies, then including offshore wind, competed for £235m.<sup>49</sup>

Alongside price support, and the already operational carbon price floor, the Energy Act introduced the emissions performance standard – setting a limit on CO<sub>2</sub> emissions from new power plants. It also granted the government powers to set up a capacity market, where companies (either electricity generators, demand response companies, or electricity storage companies) would compete for contracts granting them regular payments in exchange for pledging electricity capacity to be available whenever it was needed in a particular year.

The ‘capacity market’ was introduced to ensure future energy supply, protecting against the risk of insufficient supply as old fossil fuel power stations were decommissioned and replaced with less reliable renewable energy sources. As a result, the Energy Act excluded renewable energy generators receiving any form of government price support from participating in the capacity market, so it primarily funded non-renewable energy.<sup>50</sup>

## **Green Investment Bank**

In May 2011 Vince Cable, the secretary of state, set out BIS’s vision and rationale for the Green Investment Bank.<sup>51</sup> Balancing the need for the bank to have sufficient powers without breaking the government’s fiscal limits, BIS set out a three-phase plan for implementing the GIB:

1. an incubation period while BIS waited for state aid approval from the European Commission, during which the government would allocate funding for private green projects
2. a subsequent phase where the GIB would become established as a stand-alone institution, able to provide a range of financial products to secure and provide investment but not able to raise its own funds through borrowing
3. the Treasury would grant the GIB powers to borrow and upscale its activity from April 2015, subject to public sector net debt falling as a percentage of GDP.

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\* In 2023, as renewable energy supplies and storage technologies (like batteries) have become more developed, the government has announced plans to reform the capacity market to reduce its reliance on non-renewable energy sources. It plans to allow renewable energy generators to join the capacity market if they pass tests to prove their security of supply, and will require oil and gas generators to reduce their emissions (e.g. through carbon capture and storage) if they want to join it.

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A GIB board and management team would be responsible for designing the bank's portfolio once it was established, but BIS planned for it to provide a range of equity and debt products to leverage private capital investment in green projects.<sup>52</sup>

## Supply chains

To manage supply chain concerns, developers were asked to include supply chain plans in their CfD applications to ensure that their bid was feasible. The auctions themselves were kept 'pure', without any domestic supply chain requirements, which reunion participants told us was to avoid any risk of breaking World Trade Organization rules requiring imports to compete on an equal footing with domestic products. This threatened the government's second principal aim – building a factory to supply parts for the expanded offshore wind pipeline. Siemens, for instance, was close to committing to a turbine blade factory in Hull, but cautious about building it without more assurances that there would be a domestic market.

Reunion participants told us that Treasury opposition to DECC's reforms further jeopardised this:

**"The things [George Osborne's] team said in the press were stoking Siemens... saying 'post-2020, is there going to be a pipeline? We don't know.' And Siemens were saying 'if there's no pipeline to produce the turbines for, why are we going to do it?'"**

DECC went to great lengths to get Siemens back on board, including exploring options like government-sponsored private insurance for their investment (as Siemens was building at a private port, state aid rules made them ineligible for direct support). Following "a massive fight, and a whole series of decisions to make people comfortable", Siemens went ahead with the factory; it opened in 2016, and has produced turbine blades for most of the major UK wind farms constructed since, including Hornsea One and Two (the world's largest offshore wind farm).<sup>53</sup> Siemens expanded the factory in 2021 and the Hull Green Port credits it with directly creating over 1,300 new local jobs since 2016 (alongside local supply chain benefits).<sup>54</sup>

In August 2013, BIS published its Offshore Wind Industrial Strategy, setting out its wider plans to grow the UK's offshore wind manufacturing base, build a competitive supply chain, and support innovation.<sup>55</sup> It announced that the government would set up a private-sector-led Offshore Wind Investment Organisation to promote international investment in and trade with the UK's offshore wind supply chain.<sup>56</sup> It also introduced a £20m offshore wind supply chain growth programme to be delivered by the Manufacturing Advisory Service, and granted £46m to the Offshore Renewable Energy Catapult Centre, a partnership between industry, academia and government established earlier in 2013 to promote innovation. These proposals were targeted to facilitate supply chain growth, but were relatively modest resource commitments given the scale of the challenge.

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## Planning and grid connections

On planning, following the implementation of the Localism Act 2011, the government committed to an 18-month timeline between a project's application and decision. New national policy statements gave developers guidance to help them submit successful applications. Participants told us that this change largely shifted work from post-application to pre-application – an expensive decision for developers – but that “one of the extraordinary successes was that companies were willing to come and do that, in the hope that they will get a consent at the end”. In return, it gave them certainty that they would have a timely decision.

On grid connections, between 2010 and 2015 DECC and Ofgem's new competitive offshore licensing processes secured contracts for 11 offshore links worth £1.9bn, contributing to a total of £16bn investment in onshore and offshore transmission over the same period.<sup>57</sup> However, DECC acknowledged that much faster progress was needed; it estimated a further £34bn investment would be required between 2014 and 2020 to meet demand for new onshore and offshore network connections.<sup>58</sup>

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# Implementation, a new government and political challenges

In March 2013, DECC launched its final investment decision enabling for renewables (FiDeR) scheme: the transition programme awarding early negotiated contracts to renewable projects due to reach their final investment decision before CfDs were introduced. It received 57 applications and signed contracts with eight projects in May 2014, five of which were for offshore wind farms.<sup>59</sup>

The government ran the first CfD auction from October 2014 to March 2015. Twenty-seven renewable projects were awarded CfDs to deliver a total of 2.1GW of electricity, with two offshore wind farms contributing over half of this.<sup>60</sup> The average strike price for these wind projects was £117/MWh, lower than the £145/MWh average strike price for FiDeR wind projects but still above the government's 2020 target of under £100/MWh.<sup>61</sup>

The new price support systems faced political challenge. In 2013, energy prices rose at up to eight times the rate of earnings since 2010, and government faced criticism for not keeping the 'big six' energy companies in check. Labour leader Ed Miliband set out a plan for a 20-month energy price freeze if Labour won the 2015 election, putting pressure on the government to do the same, or reduce energy bills through another means. Reunion participants described this as "a terrible period to be in No.10", with political pressure both from Labour and from a tranche of climate-change sceptic or anti-wind Conservative backbenchers. Participants argued that if not for the counter-pressure and "competitive attention" the Liberal Democrats exerted from inside the coalition then the government would have dropped its energy reforms and resiled from its EU renewable energy commitments.

## **Cameron drops the 'green crap'**

But the peak moment of 'jeopardy' for the reforms came in 2015, when the Liberal Democrats left government after the election. The new Conservative majority government then ditched what David Cameron dubbed "green crap" policies, such as the Green Deal energy efficiency scheme and plans for all new homes to be carbon neutral.<sup>62</sup> It also changed planning laws to introduce a de facto ban on new onshore wind.<sup>63</sup> One reunion participant confirmed that offshore wind "was absolutely in their sights as well". Another suggested that the chancellor wanted to revoke the first round of CfD contracts, only not doing so because they were private law contracts which it would have been very costly not to honour.

There was particular scrutiny on the value for money of DECC's reforms. Following the first CfD auction, in June 2015 the Office for Budget Responsibility (OBR) forecast that DECC would exceed its LCF budget envelope by over £2bn by 2020–21, prompting major concern at the Treasury. This was due to three factors: a drop in wholesale energy prices (increasing the cost of meeting CfD strike prices), higher

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than expected take-up of the government's feed-in tariffs and renewable obligation schemes, and renewable projects with CfD contracts producing more energy per year than DECC expected.<sup>64</sup>

One reunion participant argued that this showed that DECC did not understand the renewables market as well as it should have. Tom Kelly, a former DECC non-executive director, similarly concluded in a government-commissioned report that DECC had focused too narrowly on its own "assumptions and forecasts", had failed to continuously monitor the developing renewable sector, and had not retained the agility to respond to this changing market.<sup>65</sup> Responding to the OBR's forecast, DECC reduced spend on the renewables obligation by closing it to applications from fast-deploying solar and onshore wind projects' earlier than anticipated. It also reduced spend on its feed-in tariff scheme by reducing tariffs and introducing a cap.<sup>66</sup>

In this context, the second round of CfD auctions was far from guaranteed. The new Conservative secretary of state at DECC, Amber Rudd, argued its case. Joining forces with Oliver Letwin, minister for government policy, she persuaded George Osborne that it was worth having a second round of auctions if they could secure a sufficiently low strike price. Participants noted that, from the Treasury's side, they were sceptical of the auction's ability to deliver value for money so the tone was very much "let them see if they can do it". One former official recalled huge debate about whether to set the maximum strike price companies could bid at £100/MWh, as the Treasury preferred, or £105/MWh, which DECC said was the minimum they could do without "completely killing the industry".

DECC won that argument. The second auction ran from March to September 2017, with a maximum strike price of £105/MWh, still considered so low that one former official recalled "sleepless nights" about not getting any bids. The results surpassed all expectations. Three offshore wind projects won contracts – one at £75/MWh and two at £58/MWh – to deliver an additional 3.2GW of electricity, making up 96% of the total capacity awarded contracts in this round.<sup>67</sup>

Reunion participants told us that this clear win settled any debate about the auctions' efficacy, reaching the government's goal to reduce costs below £100/MWh comfortably in advance of the 2020 target.

Complementing DECC's price support, BIS began implementing its plans to establish a GIB. It set up a forerunner – UK Green Investments – in November 2011, which was able to allocate government investment to privately managed green funds. After the European Commission granted state aid approval in October 2012, BIS formally launched the GIB as an independent institution with a £3bn budget to invest over three years.<sup>68</sup> The department identified offshore wind as one of its initial priority areas for investment, due to the size and urgency of investment required and the GIB's ability to deploy relevant financial solutions for the sector.<sup>69</sup>

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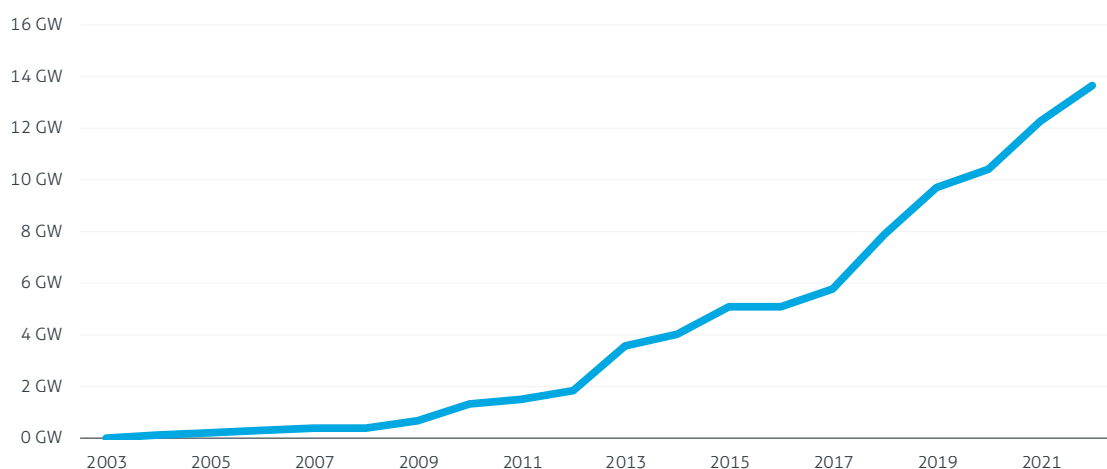
Following the 2015 election, which saw Sajid Javid appointed secretary of state for BIS, the government announced that – rather than allowing the GIB to borrow to raise its funds – it would seek to privatise it.<sup>70</sup> The sale process began in March 2016 and completed in August 2017, when the bank was sold to Macquarie for £1.6bn with a small retained government stake.<sup>71</sup>

Javid also changed tack on industrial strategy, preferring a less interventionist ‘industrial approach’, which saw little government support for offshore wind supply chains in his tenure from May 2015 to July 2016.<sup>72</sup> The government has since resumed more focused work on offshore wind industrial strategy; in 2019, it published an Offshore Wind Sector Deal setting out joint government and industry commitments designed to grow the sector in the decade to 2030.<sup>73</sup>

## Outcomes after 2016

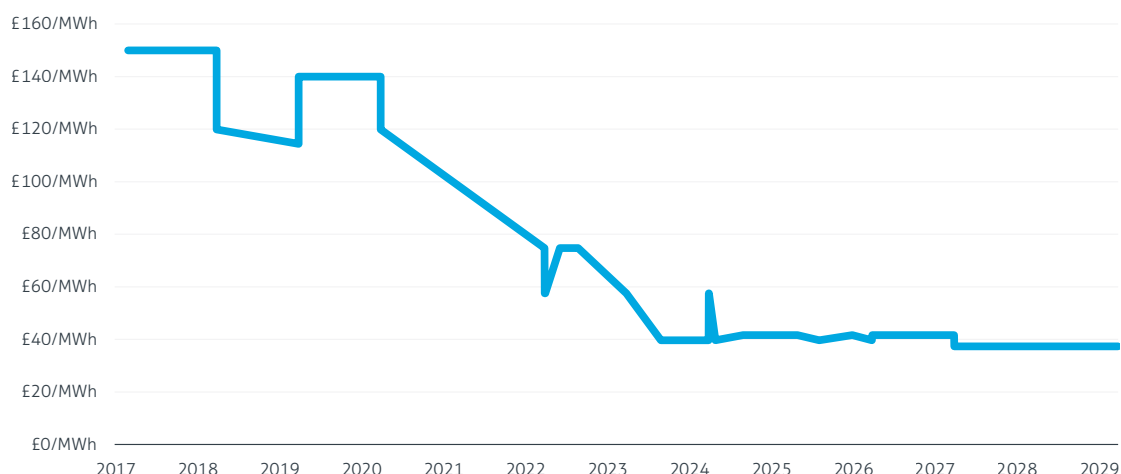
Offshore wind policy from 2010 to 2016 succeeded in its major aims. The UK now has 13.9GW of installed offshore wind capacity, almost all of which (89%) has been installed since 2010. Due to the new availability of low-cost capital, and rapid technology innovation, the strike prices agreed for CfD contracts declined to a low of £37/MWh in 2022 (for contracts starting in 2026–27). 10MW turbines have been installed in the Seagreen project off Scotland’s east coast, twice the power of the largest turbine installed in 2009.

Figure 3 **Cumulative UK offshore wind capacity, 2003–22**



Source: Institute for Government analysis of US Department of Energy Office of Energy Efficiency & Renewable Energy, *Offshore Wind Market Report 2023*, 2003–2022.

Figure 4 **Agreed UK offshore wind strike prices, delivery years 2017–30**



Source: Institute for Government analysis of Low Carbon Contracts Company, 'CfD Register 18-Aug-2023#', 2017–30. Notes: Dates are the target commissioning dates initially agreed in FiDeR and CfD contracts. Strike prices are reported in 2012 prices.

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The CfD auctions have been rightly credited as the major factor in this success, and have been copied by countries like Spain and Germany. Reunion participants said that one of their proudest achievements was winning the political battle to make offshore wind an integral part of the UK's future energy mix and path to net zero. As one participant put it: "It's now completely unquestioned, despite all the tensions between parties." There is a strong case that getting the price down so successfully was the only way to achieve this kind of political consensus around the sector.

There is less consensus on the FiDeR contracts' success. A National Audit Office (NAO) report concluded that too much of DECC's Treasury-allocated funding was committed in FiDeR contracts, and apportioning more of this into the CfD auctions instead would have been better value for money.<sup>74</sup> It stated that DECC had underestimated the pace at which demand and market confidence in the renewable sector had increased, and therefore had over-committed funds into earlier contracts which it should have negotiated lower through competitive auctions.

Reunion participants agreed that the strike prices set for FiDeR contracts were, in retrospect, too high. Some participants felt that, as per Tom Kelly's reflections on DECC's projected LCF overspend, DECC did not have a strong enough understanding of the offshore wind market and should have anticipated this at the time. However, other participants felt that the pace at which prices were going to fall could not have been reasonably predicted in 2013, and the FiDeR contracts provided much-needed certainty for the industry.

One participant reflected: "I don't think DECC could have gone to auctions sooner... the supply chains and the developers were already spooked." Another said: "I can absolutely tell you from first-hand activities, it was the five [FiDeR] projects that caused Siemens to get the [turbine blade] factory built." After DECC's remedial actions and the successful second CfD auction, DECC ultimately overspent the levy by £800m: still significant, but less than half the overspend forecast by the OBR in 2015.<sup>75</sup>

The Green Investment Bank (GIB) also had mixed reviews. Some participants recognised its strengths as an international political signal that the UK government backed renewables technology. They told us that it particularly helped give sovereign wealth investors and pensions funds – both of which would not typically invest in emerging technologies – the confidence to invest in the UK renewables market. This is reflected in its outputs: over the course of its lifetime as a public venture, the GIB financed 100 projects, using £3.4bn of its capital to leverage a further £8.6bn of private investment.<sup>76</sup> Nearly half of its portfolio was comprised of offshore wind projects, and in 2017 the NAO estimated the GIB's portfolio in 2016–17 alone would fund 13% of the UK's projected renewable electricity production in 2020.<sup>77</sup> Aligning with the government's fiscal objectives, the GIB's sale secured an overall public profit of £186m.



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Inside HMT there were disputes about whether it made sense to sell the GIB, as some felt it was useful for supporting the leading edge of investment, helping in the early stages to grow a technology before stepping back so the market could take it forwards. In 2017 the NAO reflected that the sale's value for money would only become clear over time, and a "key test" would be "whether the government needs to intervene again in this way to stimulate growth in the green economy".<sup>78</sup> Following the decision to establish the UK Infrastructure Bank in 2021, opponents of the GIB's sale have argued that the government failed this test.<sup>79</sup>

However, some reunion participants approved of the sale, telling us that the GIB was not nimble or unrestricted enough to be as effective as a private bank in securing new investments. They particularly noted that it was unable to keep up with the pace of the private markets and that, as it was constrained by state aid rules, it was never going to be "a free rein bank that could invest at 0% on a non-commercial basis", as may have been most desirable.

Alongside securing investment, the government's efforts to boost the domestic supply chain were partially successful – Siemens built its turbine blade factory, while the supply chain benefited from some investment following the government's Offshore Wind Industrial Strategy. But participants told us that overall not enough was done to prepare supply chains for the transition the sector would undergo as a result of the new price support. As one participant told us:

**"The developers have outcompeted each other to screw the supply chains to the floor, because you need every penny off your strike price if you're going to win, and that has caused structural issues in the supply chain."**

Participants explained that the government had few policy options to improve the domestic supply chain, as it had to abide by World Trade Organization rules and avoid unfairly advantaging domestic suppliers (as demonstrated by a dispute last year).<sup>80</sup> But they argued that the UK could have done more to grow supply chains, particularly if it had provided a better offer for accessing large, international offshore markets (especially in Europe). One participant reflected that the supply chain plans introduced were more of a signalling exercise than a robust strategy: "We ended up doing supply chain plans but there's no requirement for that to actually say anything meaningful." When asked why industrial strategy was so far behind the developed energy policy, participants cited a "naivety" that the long-term opportunities CfDs offered would create a supply chain market by themselves. They also noted that DECC did not have ownership over industrial strategy for energy as part of its Electricity Market Reform remit, while BIS did have ownership of it but limited resource, so there was no "holistic" strategic approach driving industrial policy for energy.

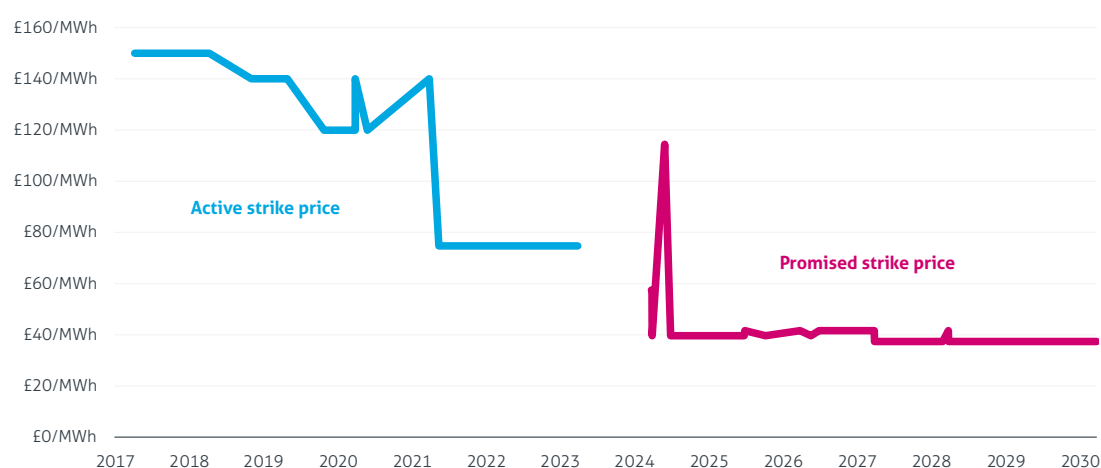
# Impact on today – and future challenges to the offshore wind sector

In response to high inflation due in large part to Russia’s war in Ukraine, on top of these existing supply chain issues, the offshore wind industry has warned that the future pipeline is under threat. There is reasonable concern that developers may not be able to deliver contracts agreed in the 2022 CfD auction.

The lowest strike price currently active for offshore wind is £75/MWh, nearly twice the £40 strike price of some projects promised to deliver in 2024 (Figure 5). One project – a 1.4GW development off the Norfolk coast by Vattenfall – has stopped work, citing high supply chain costs making the project unviable. Other developers with fully installed projects awarded CfDs in the 2017 auction have delayed the start of their contract to take advantage of higher wholesale prices (this is because as soon as their contracts start, they will have to pay the difference between the wholesale and strike price back to consumers via the Low Carbon Contracts Company).

It is not clear if they will activate these CfDs before the final deadline agreed in the contract, or if the government will need to terminate them. The new Department for Energy Security and Net Zero (DESNZ) has called for developers to “act fairly”, and has now updated the CfD contracts to restrict the options of delayed contract entry in future.<sup>81</sup>

Figure 5 UK offshore wind strike prices, active and promised, delivery years 2017–30



Source: Institute for Government analysis of Low Carbon Contracts Company, 'CfD Register 18-Aug-2023', 2017–30. Notes: Strike prices relate to both FiDeR and CfD contracts. Active strike prices are plotted at the date the contract was activated. Promised strike prices are plotted at the date the contract is expected to be activated. All strike prices are reported in 2012 prices.

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The 2023 auction set back the future offshore wind pipeline even further. The government set the maximum strike price too low – despite warnings from industry – and not one developer entered a bid. As one participant commented (before the 2023 auction), setting the maximum strike prices is difficult as policy makers have to balance what industry is telling them against what they think industry can achieve; the significant drop in prices in the 2017 auction illustrated that what is achievable is not always clear. In general, the auctions are vulnerable to 'gaming', and one participant said that the government updates the auctions each round to manage this.

The 2023 auction was also the first of the government's new annual auctions, so developers may have (quite reasonably) strategically delayed their bids to 2024, hoping that by next year their cost pressures will have either declined or will be priced into the maximum strike price.

As the government looks ahead to this next auction, for which it will be announcing the maximum strike prices in November 2023, it has to make decisions about its priorities. In the long term, prices may reduce again, but in the meantime the government is losing out on new capacity, which it had planned to be a major component of meeting its renewable energy targets.

There are also other problems on the horizon that the government needs to address if it is to have a chance of meeting its target to deploy 50GW of offshore wind energy by 2030. In July 2022, it appointed Nick Winser as electricity networks commissioner, tasking him with recommending how the government can reduce timelines for delivering the transmission networks the UK needs to connect new renewable energy projects to consumers. Winser's report, published in August 2023, warned that new offshore wind capacity may be built faster than it can be connected, risking "wasting" the UK's hard-won offshore capacity and bringing "very high congestion costs for consumers".<sup>82</sup> He set out a roadmap for reducing the timescale for building the networks the UK needs from 14 years to seven.

The government's offshore wind champion, Tim Pick, has also warned that the time taken to gain planning consent for projects has ballooned way beyond the statutory 18 months, due to the rising number, size and complexity of applications (particularly due to overlaps with marine protected areas).<sup>83</sup> One participant noted that the planning system was fit for purpose from 2010–2016, but has struggled to cope with the expanding pipeline:

**"When you look back, you had a very steady set of large projects that were coming through and so it was manageable, not just for the planning sector but for Natural England and the Environment Agency and others involved in consenting too. Whereas now the scale is astronomical."**

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Speaking in May 2023, reunion participants commented that this should not take away from the success of policy from 2010–2016, arguing that focusing on reducing the price was the right objective for that period, and the policies introduced – on price support, green investment, and planning – were the right ones to meet it. But they told us that this approach is now “outdated”, and called for the government to take the same political drive and resource commitment to the issues around supply chains, the grid, and planning infrastructure, as it did to prices in the early 2010s.

The latest auction results make clear the costs of not doing so. The high costs currently faced by industry are undeniable, and in the short term they are unlikely to come down substantially. China, the US and the EU are entering the offshore wind market in a major way, which has added to cost pressures and increased demand on already strained, highly specialised supply chains (such as the boats used to install turbines).<sup>84,85</sup>

The government needs a robust strategy to manage the increasing demand new offshore wind projects will put on supply chains, the planning system and national grid infrastructure. One participant said: “I think on planning and grid we’re now going to be doing as much in the next 10 years as we’ve done in the last 30.” Prime Minister Rishi Sunak has recognised this in a speech in September 2023, describing insufficient grid infrastructure as “one of the biggest constraints to reaching net zero”.<sup>86</sup>

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## Lessons for policy making

Reunion participants reflected on what made offshore wind policy a success between 2010 and 2016, and what the government could learn from this about effective policy making. They identified three key factors behind the coalition government's rapid progress:

- the clear mandate DECC had, arising from the UK's legal commitments, David Cameron's leadership and the particular coalition government dynamic
- the capacity and capability of DECC officials to deliver well-designed policy, in concert with useful scrutiny processes
- effective mechanisms in the centre of government that could negotiate disagreements between departments and manage a co-ordinated cross-government approach to offshore wind.

Reunion participants also identified problems with how policy has been designed and implemented since 2016, from which the government should learn.

### **DECC had a clear mandate to deliver the policy, which protected it from political attacks**

Participants emphasised how having a clear, stable direction for policy gave DECC the confidence and power to deliver effective long-term policy despite some political resistance. This mandate came first from the government's legal commitments to increasing the UK's renewable energy capacity – the EU renewable energy directive and the 2008 Climate Change Act – introduced by the previous Labour government. One participant told us that these were crucial for maintaining policy direction amid ministerial churn, as with "a number of energy ministers the first conversation was 'do we have to do all this?', and the answer was 'well it is in law'".

As discussed earlier, the coalition's programme for government negotiated between Nick Clegg and David Cameron created a strong mandate for DECC by setting a clear, agreed agenda for the next five years. Participants also particularly emphasised that Cameron as prime minister set a clear direction for policy – the "absolute, principal objectives" of electricity market reform were to reduce the cost of capital for renewable projects and build a new turbine blade factory. They said this "overwhelming push to policy" brought a "laser focus" and co-ordinated approach to the policy across government departments, helping to maintain its direction.

DECC's status as a key Liberal Democrat-led department also brought it a more secure mandate to deliver policy. One former minister told us that, as the Liberal Democrats owned this policy area and made it clear that it was one of their top political priorities, "it gave the government the ability to close down some debate on the right of the Conservative Party", both from those who did not believe in anthropogenic climate change, and others who opposed wind farms as an eyesore. Other participants agreed

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that the Liberal Democrats, led by Clegg, were able to use their position as the junior coalition partner to create enough political pressure to see off opposition, not just from backbenchers but also from Conservative ministers, including the chancellor (although participants did point out this might have been a different story if Cameron had not also supported developing the renewables sector). With eyes on the Liberal Democrats' new department, participants emphasised how DECC had an energy and direction that allowed it to be ambitious with policy. As one participant noted: "A lot of government is 'how do we stop events happening to us', so to lean in to doing something really ambitious was unusual and bold." Further evidence of the importance of net zero policy for the Liberal Democrats in government comes from how the policy changed shortly after they left office, with the Conservative government after 2015 leading a purge of "green crap" policies, and participants telling us that the first round of CfD contracts were only honoured because the chancellor was unable to retract them without great expense.

Looking ahead to a probable 2024 election, this experience shows any new government that setting out key priorities early in a clear, authoritative programme for government can help bring stability, direction and longevity to policies. It is not just a coalition government that can benefit from such an approach. But it does require consistent, strong political leadership to avoid such a programme drifting or being blocked by backbenchers' interests or cross-government disagreements.

### **DECC officials and ministers had the capacity and capability to design and implement policy well**

Reunion participants noted that much of offshore wind policies' success from 2010 to 2016 can be traced back to DECC, which had not just the leadership but also the capacity and capability to deliver well-designed policy.

Participants argued that it was important to have a dedicated department responsible for energy. When DECC was merged into the business department in 2017 to create the Department for Business, Energy and Industrial Strategy, ministers and officials were pulled in too many directions, so "didn't have the capacity, the hours in the day or the brain space" to properly understand and engage with the complicated content of electricity market reform. Having dedicated representation at cabinet meetings was also crucial; as one former minister put it: "Whichever department you are representing, you fight for, and if you haven't got somebody who is energy and climate change, it is incidental to everybody else".

Others noted that DECC had a large number of civil servants working on electricity market reform. They emphasised that having this capacity enabled the department to put resource into delivering well-designed policy, of which the dividends are now clear.

Former ministers did not hold back in their praise of DECC's officials, emphasising their "commitment, drive and integrity". One participant commented: "We liked each other, we worked well together, and we wanted to deliver the same outcome"; contrasting

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that with less harmonious departments: “If you’re denigrating civil servants day by day and undermining them, you’re not going to get the best relationship.”

As many officials had worked on electricity market reform under the previous Labour government, they had built up expertise in the area. As one participant described: “We had the space and the time to actually do the analysis, and think about the different combinations of policies that might work,” so by the time the new DECC ministers joined, they had two years of work to use as a base for rapid progress on policy design. As the UK approaches an election, participants noted that current officials should ensure that policy knowledge is carried into the next government, whatever its composition, so that it can similarly hit the ground running.

This capacity and capability within DECC manifested itself in good policy making. In particular, DECC adhered to several principles that made its offshore wind policy well-designed:

- DECC understood the policies’ key objectives, and had a clear strategy to meet these. Ministers and officials prioritised getting the cost of capital down for new renewables’ projects, recognised that investor confidence was key to this, and designed policy that would achieve this.
- Officials had the skills, knowledge and relationships with industry experts to set an ambitious but reasonable target. Ministers’ target of reducing costs to less than £100/MWh by 2020 was initially met with “a collective gasp” from industry, but the department gathered evidence and planned a roadmap – drawing on advice from industry through the Offshore Wind Cost Reduction Task Force – for how that target would be delivered, and ultimately reached it comfortably in time.
- DECC had the “self-confidence” to engage fully with stakeholders to inform policy. Through this process, officials tested their ideas, ensured they understood stakeholders’ needs and how reforms were going to affect them, and designed additional support where necessary to manage any negative impacts of policy.
- The department designed a package of well-evidenced policies to work together in concert: the emissions performance standard, capacity market, carbon price floor and CfDs. The mutual consequences of policies were fully considered; ministers and officials planned that as the carbon price floor increased the cost of carbon-intensive electricity, the cost of subsidies for renewables via the CfDs would decrease, with minimal impact on consumers.
- The department retained flexibility in policy. As it was not yet known which technologies would be most successful at reducing costs, DECC based the auctions on price alone. Within the auction pots different technologies could compete on equal terms, allowing offshore wind to emerge as a clear winner through its rapid innovation without officials having to predict this.

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- The department commissioned external experts where appropriate. DECC drafted external auction experts in to design a complex process, which officials knew they did not have the in-house capacity and capability for.
  - DECC listened to feedback from parliamentary scrutiny. Following select committee scrutiny of the draft Energy Bill, the department redesigned CfDs so they would constitute private legal contracts signed with a government-owned company. Reunion participants told us that this water-tight agreement was the most important aspect of CfD design for gaining investors' confidence and making the UK the most competitive offshore wind market to invest in internationally.

However, this is not to say that DECC delivered electricity market reform perfectly. In particular, there remain debates about whether the department needed to invest so much of its budget into the early FiDeR contracts, which were poor value for money compared to CfD contracts agreed through competitive auction. While it engaged with industry extensively, the department also did not respond quickly enough to important developments in renewable energy markets (as demonstrated when it overspent its budget envelope, and offered a maximum strike price for offshore wind in the 2017 auction that was revealed to be far too high). This delicate balance between not getting 'gamed' by industry while also securing a continuous offshore wind pipeline, remains a central challenge for offshore wind policy today.

### **There were effective mechanisms in the centre of government to resolve disagreements between departments**

The Institute for Government has long said that a good centre of government arbitrates over cross-government disagreements, negotiating a clear, agreed direction for policy that departments can then deliver.<sup>87</sup>

Reunion participants – in concord with past Institute for Government analysis<sup>88</sup> – noted that the Quad was very effective in this regard, providing a “driving mechanism” through which the terms of the CfD policy could be agreed “line by line”. This was particularly necessary to arbitrate over disagreements between the Treasury and DECC: a thorny relationship that slowed progress on some policy elements (like the Siemens factory), but also secured better policy design on others (like proceeding to fully competitive auctions earlier than originally planned).

The smooth operation of this mechanism was primarily due to the role of expert civil servants. Participants credited Jeremy Heywood, the cabinet secretary, for his “skill of brokering” the fine details of policy. They also recognised Oliver Letwin, the minister for government policy, as a key “sponsor in the Cabinet Office” able to facilitate negotiations (particularly between DECC and the Treasury) to reach agreed advice that could then “be put through to the PM to sign off”.

One participant particularly praised the quality of special advisers at the centre who became “real experts” in electricity market reform, contrasting this with the lesser expertise of some of their successors, which has “really impacted the debate and the contextual discussions they have in departments as well”.



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## **The government should also learn from more recent policy developments**

Reunion participants also offered reflections on more recent policy developments. They noted that the focus on reducing the CfD strike prices for offshore wind was important in giving a clear goal for policy, and helping to fend off opposition from government backbenchers. However, they argued that since 2016 other issues had become major barriers to deploying increased offshore wind capacity, and had not had the same focused policy response. These included squeezed supply chains, delays in the planning process as projects became more numerous, large and complex, and insufficient national grid infrastructure to incorporate the accelerating future offshore wind pipeline.

The government has commissioned reports to grapple with the last two of these – Nick Winser, the electricity networks commissioner, has recommended a roadmap to meeting the UK’s electricity transmission needs in seven years, while Tim Pick, the offshore wind champion, has recommended reforms to fast-track offshore wind projects through the planning process. It is welcome that Prime Minister Rishi Sunak has trailed “comprehensive new reforms” responding to their recommendations in a September 2023 speech, including committing to Winser’s key recommendation: a strategic spatial plan for energy infrastructure.<sup>89</sup>

The failure of the 2023 CfD auction, as described above, has revealed a vulnerability in the CfD process to getting the strike price for offshore wind wrong. This is a particular problem for the government’s renewable energy targets as offshore wind is able to deliver much higher capacity than other technologies at present: a factor expected to stay true for the foreseeable future as other leading technologies like solar and onshore wind are limited by tighter planning restrictions. The government should consider if the auction design needs to change to reflect this changing dynamic.

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## Conclusion

Offshore wind has emerged as a great success story of the 2010s, underpinned by work led by each of the three main parties.

In the 2000s, Tony Blair and Gordon Brown's Labour governments signed up to ambitious legal climate change commitments, securing a long-term government agenda to increase the UK's renewable energy capacity which has withstood changes of government and ministerial churn. Under Ed Miliband, DECC invested time and resource to kick-start progress towards these targets, developing internal expertise on the range of electricity market reform policy options that gave the coalition government a running start on policy design.

The 2010–15 coalition government developed and implemented policies that delivered this major transition to renewables. It introduced well-designed price support, clear new planning process deadlines, competitive transmission licences, a Green Investment Bank, and industrial policy (albeit limited) to grow domestic supply chains. Combined, these policies created an environment that unblocked investment, accelerated innovation and encouraged the offshore wind industry to thrive.

The 2015 Conservative government, while scrapping some green policies, retained the crucial CfD and delivered – out of constructive DECC and Treasury disagreement – auctions that reduced prices to far lower than had been dreamed in 2010. It has since committed to deploying 50GW of offshore wind by 2030, and has accelerated the CfD auctions' frequency to meet this (albeit with disappointing results in 2023). The resulting growth in the offshore wind sector is a testament to these policies' success.

It is now clear that a series of new hurdles face the sector if the government is to reach its aim of deploying 50GW of offshore wind energy by 2030. It is good that the government has started to grapple with grid transmission and planning issues by inviting advice from its appointed experts. It now urgently needs to implement their recommendations. In contrast, it appears the government does not have a clear plan to manage rising material costs and supply chain issues in the sector.

These challenges illustrate a wider lesson for net zero policy; transitions (whether to decarbonised electricity, housing, or vehicles) require change across a whole infrastructure ecosystem. While it is helpful to have core targets leading a direction for policy, these have to work as part of a wider strategy for delivering a transition. If not, the government faces a 'problem of success' in that the policies in supporting areas – like industrial strategy, adjoining infrastructure and planning processes – are not equipped to keep up, as has been true for offshore wind in the last few years. The government should ensure the right lessons are learned from the failed 2023 auction, to ensure that offshore wind continues to be a UK success story in future.

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