Impact assessment

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1. Summary of proposal

To assist in meeting the UK's 2050 Net Zero emissions target and the 2030 Clean Power mission, a substantial amount of new, low carbon power sources will need to be built before 2050. The Contracts for Difference (CfD) scheme is the Government's main support mechanism for new low carbon electricity generation projects in Great Britain.

Considering the complex transformation required of the energy system to meet these targets, the Government recognises the need for the CfD to evolve so as to address the ongoing challenges posed by the transition. Equally, since its introduction as part of the Electricity Market Reform (2013) programme, the scheme has been regularly reviewed and adjusted to ensure it remains the most appropriate support mechanism, provides value for money for electricity consumers and is aligned to wider decarbonisation aims. As such, consideration has been given as to how the CfD can best support the necessary pace of renewable electricity deployment in the next Allocation Round.

The Government recently consulted on changes to the CfD design, this Impact Assessment (IA) only considers the policy proposals relating to Phased CfDs for floating offshore wind (FLOW) and Repowering – these are the changes proposed for the next Allocation Round. It does not consider Allocation Round auction parameters, which will be published ahead of the round opening.

All other proposals from the consultation are not being considered for the next Allocation Round and a further consultation (and Impact Assessment) will take place if these are to be implemented for future Allocation Rounds.

2. Strategic case for proposed regulation

The CfD scheme is the UK's main mechanism for supporting new low-carbon electricity generation projects in Great Britain, with the Government committing to the 2030 Clean Power mission. Changes to the CfD scheme are necessary to enable it to best support new generation in line with our decarbonisation, cost reduction, and innovation ambitions, and provide value for bill payers in coming years.

The key rationale behind the proposed changes for the next Allocation Round are described below. Further detail can be found in the consultation document[1], and Government response[2], the latter being published alongside this IA.

Repowering:

When generation sites come to the end of their life, it is possible for some technologies to repower rather than decommission. Full repowering, as opposed to life extension, often involves full replacement of key components, such as wind turbines in the case of onshore

[1] DESNZ. Proposed Amendments to CfD for the next Allocation Round. Available at: https://www.gov.uk/government/consultations/proposed-amendments-to-contracts-for-difference-for-allocation-round-7-and-future-rounds

[2] For more detail, see the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment

wind (ONW). The rationale for the proposal is explored below, focusing on repowering facilitating the commercial viability of ONW, capturing efficiency gains in the ONW sector, aiding in decarbonisation goals, and helping to secure the supply of renewable energy.

A significant portion of renewable assets may be coming to the end of their operational life during the late 2020s and throughout the 2030s. The Government is proposing to enable some repowering projects to apply for the CfD in the next Allocation Round, in limited circumstances, for ONW projects.

The CfD is designed to support investment into new build renewable projects by protecting against the risk of high upfront capital costs and the sustained price risk across the asset's operating life. Under the proposed policy, full repowering projects would need to incur similar risk and cost profile to support their case for intervention. For these projects to achieve this, it is likely that the replacement of key components involved in recommissioning the original site would incur similarly high upfront capital costs than that of a new build.

Through solely supporting repowered projects with similar circumstances to new build projects, the proposal provides sufficient protection to consumers. Restricting repowering to projects with comparable costs to new build projects ensures that we do not overcompensate projects which could otherwise apply without having to incur the significant upfront capital expenditure and costs of capital that come with fully repowering. Therefore, for the next Allocation Round only ONW is eligible to apply for the CfD as a repowered project. This aligns with the majority of views expressed in the recent consultation on the proposal. This is supported by an initial review of evidence on costs from ARUP, which the Department recently commissioned. However, the Department's position on relative costs continues to evolve. Live research is ongoing, and the Department intends to conclude (and, where sufficiently robust, publish the conclusions of) this alongside the next Allocation Round, which will inform decisions around auction design designed to ensure a balance between deployment, fair competition and costs to consumers. For future Allocation Rounds, the eligibility of other technologies will be considered.

Overall, merchant (unsubsidised) renewable projects face increasing revenue risk from the late 2020s onwards due to the increased likelihood of price cannibalisation and economic curtailment[3] in the future wholesale electricity market. As such, in the case of intermittent renewable technologies, the opportunities for merchant deployment are limited in the face of this growing financing risk. This risk is reflected in repowered ONW projects, as with new projects, due to their similar cost profiles. Therefore, it is the Government's view that to ensure the commercial viability of repowered ONW, intervention is necessary to de-risk financing.

Equally, the Government views supporting repowered ONW as an opportunity to secure the supply of renewable energy and incentivise the deployment of intermittent renewable assets at scale to meet decarbonisation goals. Analysis suggests that there could be in the region of 1 GW of ONW capacity coming to the end of its operating life within the delivery years for the next Allocation Round, with this likely increasing in future allocation rounds as more wind capacity reaches its end of life[4]. Should existing renewable projects retire at the end of their

[3] Price cannibalisation illustrates the increasing phenomenon whereby renewable generation is correlated, and so, wholesale electricity prices are reduced at times of high output from intermittent, weather-driven generation, such as solar, onshore and offshore wind. This reduces the revenue that renewable generators can earn in the wholesale market. Economic curtailment refers to a deliberate reduction in output below what could have been produced to balance energy supply and demand.

[4] DESNZ assessment based on Renewables Obligation plant data.

life rather than repower during this period, this capacity would also need to be replaced in addition to existing deployment expectations, with this impact increasing as demand for renewables increases in coming years.

Moreover, by repowering these sites with new ONW technology, the proposed policy may allow these assets to access efficiency gains and, therefore, increase their existing capacity. Analysis suggests that the load factor[5] for ONW turbines increases over time[6]. When repowering, sites which are approaching their end of life would then likely be able to replace their older turbines with more efficient technology. As such, the proposed policy may aid in realising efficiency gains within the renewable energy sector and, so, could secure more capacity at these existing sites through technological improvements. Equally, repowered ONW represents an opportunity for an efficient reuse of land, incurring further efficiency gains.

As a secondary benefit, existing sites tend to already be in communities which are supportive of or have adapted to existing infrastructure. Equally, by supporting sites within these communities to repower, rather than decommission, the proposal may support highly skilled green jobs in repowered site's local communities. Therefore, there are potential localised benefits to the proposal, as well as primary benefits relating to efficiency gains, decarbonisation, and security of supply.

Phasing:

Phasing policy was designed to allow fixed-bottom offshore wind projects to be built out in multiple stages ('phases'), reflecting the commercial realities of constructing offshore wind farms[7]. Phasing allows for a de-risking of the construction process which can be restricted by the long installation times per turbine and weather conditions. Through a reduction in overall project risk, phasing is therefore intended to facilitate lower overall financing and capital costs.

The Government aims to radically increase the deployment of offshore wind (OFW) capacity. Currently, FLOW is an emerging technology, with only c.200 MW of capacity deployed worldwide[8]. The Government views FLOW as having the possibility of playing an increasing role in low carbon power generation, contributing to the wider OFW ambition.

The Government views it necessary to extend phasing to FLOW to realise the technology's role in future low carbon generation. Due to the construction process of FLOW not yet being industrialised, the risks rationalising the original phasing policy are now mirrored in FLOW site development. For example, the slow buildout rate for this technology is partly linked to limitations of suitable port capacity and adverse weather conditions.

In extending the option of phasing to FLOW, the Government will also maintain the 1.5 GW capacity rule, whereby a phased project cannot exceed this capacity limit in total. For FLOW, this likely protects against developers securing funding for projects which they do not have

[5] Load factors are defined as expected annual generation as a percentage of theoretical maximum generation.
[6] DESNZ. Electricity Generation Costs Report 2023. Available at: https://www.gov.uk/government/publications/electricity-generation-costs-2023
[7] DECC. Draft Renewables Obligation Order 2011 – Offshore Wind Phasing. Available at: https://assets.publishing.service.gov.uk/media/5a78ff99ed915d07d35b4103/1056-ia-ro.pdf
[8] RenewableUK EnergyPulse

significant material experience to deliver due to the industry's nascency[9]. As the industry matures, the Government will keep this rule under review for future Allocation Rounds.

Therefore, the proposed policy extends the ability to build projects in multiple phases to FLOW, de-risking the construction process, increasing investor confidence, reducing capital costs and increasing the sector's overall commercial viability.

3. Policy objective

The Government's proposals, and its rationale for intervention in order to improve the CfD scheme ahead of the next Allocation Round, strive to appropriately align with the statutory considerations as set out in the Energy Act 2013, by seeking to appropriately balancing the UK's decarbonisation aims with maintaining security of supply and having regard to costs to consumers. We are also satisfied that the proposals appropriately align with subsidy control principles. More specifically, the proposals aim to do the following:

Decarbonisation

- **Make progress in delivering net zero:** The CfD scheme plays a key part in the Government's commitment to Net Zero by 2050 and the 2030 Clean Power mission. The Governments' proposals ensure the scheme continues to secure significant levels of renewable electricity to continue to help achieve the 2030 and 2050 Net Zero ambitions over the coming years. Simultaneously, the Government is, for example through its rapid and sustained scale-up of low carbon electricity deployment, balancing this deployment with the need to ensure that the CfD scheme provides value for money for consumers. This balance is achieved by encouraging deployment of renewable capacity at the lowest cost to consumers and supporting cost reductions. The implementation of repowering and the extension of phasing to FLOW projects align with these aims by increasing and de-risking the deployment of these specific renewables respectively.
- **Encourage the capturing of potential efficiency gains:** The Government wants to ensure that ONW sites which are coming to the end of their operating life continue to generate rather than losing potential capacity gains. Frequently, these sites have the best topography and possess existing network infrastructure. In tandem with the possibility that they be repowered with newer, more efficient technologies, the repowering proposal also aims to capture potential increases in capacity from repowering with modern wind turbines now facilitating higher generation than older models.
- **Increase commercial viability of emerging technologies:** FLOW remains a nascent sector which is yet to industrialise, this, alongside short weather windows for construction lead to development timelines which can reduce the commercial viability of these projects. By allowing FLOW to phase, the CfD will be more aligned with FLOW construction timelines and can contribute to the Government's ambition to radically increase the deployment of offshore wind (OFW) capacity.

[9] See the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment for more on the rationale for this decision.

Security of supply

- **Maintain and develop UK energy security:** Supporting the ONW and FLOW sectors to develop and generate an increased amount of decarbonised electricity within the UK through these proposals helps ensure that Great Britain is less exposed to fluctuations in global gas prices.
- **Increase certainty of FLOW projects:** The phasing proposal aims to de-risk deployment of FLOW technology by mitigating construction risk developers face, plausibly increasing the certainty that projects will be delivered.

Consumer costs

- **Limiting cost to billpayers:** The repowering proposal aims to increase the supply of low-cost ONW projects through increased competition in the allocation process and/or deployment at low cost. Where project risk, and specifically construction risk is decreased by extending phasing to FLOW, this could theoretically reduce financing costs, resulting in the delivery of renewable generation at a lower cost to the consumer under some scenarios. As such, the proposal encourages deployment of renewable energy capacity while having regard to the cost to consumers, which aligns with the central CfD purpose to encourage low carbon electricity, while also providing value for money for consumers.

4. Description of proposed intervention options

The following options are considered in this IA:

Option 0: Do Nothing: Under this option there is no change to the CfD scheme. This option represents the counterfactual against which the costs and benefits of the policy proposals are assessed.

- **Maintain the current CfD approach to repowering:** Repowering projects would not be able to bid into the CfD scheme unless developers could sufficiently present the project as a new build i.e. the project met all of the new-build criteria set out by the CfD. As such, it is unlikely that a significant amount of repowering projects would be eligible to apply for a CfD, as the criteria is not designed to meet their project specifications and support them to enter the bidding process. Therefore, continuation of the existing regulatory framework (the CfD (Allocation) Regulations 2014 and the Allocation Framework) would likely prevent repowering projects from applying to the CfD. With their high upfront capital costs, it is likely without support from a CfD, the projects become commercially unviable and are incentivised to decommission rather than repower. In this case, the generative capacity of these sites is lost when they retire.
- **Maintain exclusion of FLOW from CfD phasing:** Under this option, developers of FLOW projects continue to receive support under the CfD scheme but cannot apply to phase their projects like fixed-bottom offshore wind. This could disincentivise financing of FLOW due to the level of risk associated with the construction of large floating projects, which could result in increased financing costs, which are ultimately passed

onto the electricity consumer. This may lead to a resultant risk in the reduction of deployment of FLOW and, so, risk the technology's role in meeting the UK's decarbonisation commitments. Equally, this shortfall in renewables deployment would have to be made up elsewhere. Simultaneously, with FLOW being an emerging sector, this may negatively impact its development. Consequently, while these are secondary benefits that flow from the CfD, the UK could miss out on economic benefits from promoting financing into the FLOW supply chain and infrastructure (in particular ports) required to support project buildout. The negative impact on developers' confidence in being able to construct large floating projects within the allocated delivery years could result in them being broken down into smaller capacities, with a plausible impact on project and so consumer costs due to the loss of economies of scale.

Option 1: Changes to the CfD Scheme: This option reflects the proposals set out in the consultation and Government response. The key aspects of these proposed changes considered in this Impact Assessment are:

- **Enable repowered ONW projects to bid into the CfD for the next Allocation Round:** Extending the eligibility of the CfD scheme to fully repowered ONW projects aims to maintain or increase capacity of these sites which would otherwise decommission. Repowered ONW projects will be able to bid into the CfD for the next Allocation Round on the basis that they are fully repowered projects, not life extension. This aims to restrict the proposal to projects with high upfront costs, comparable to new build projects. This is to ensure repowered projects are not overcompensated by the CfD scheme. Equally, these projects must reach the end of their operating life by/before the end of their applicable the next Allocation Round Delivery Year and cannot be in receipt of any other subsidy for electricity generation at that point.
- **Extend CfD phasing to FLOW:** The extension of phasing to FLOW projects would provide developers the ability to build projects in multiple phases in order to help de-risk the overall construction process and improve the sector's commercial viability and development.

5. Regulatory scorecard for preferred option

The regulatory scorecard considers in Table A the overall and stakeholder impacts of the policy changes, with Table B reflecting on the proposals' impacts on wider Government priorities. These directional rating of the policies are considered based on plausible impacts of the policy changes compared to the counterfactual "Do Nothing" option.

Table A: Overall and stakeholder impacts

(1) Overall impacts on total welfare		**Directional rating** **Note: Below are examples only**
Description of overall	**Repowering** By allowing ONW repowering projects to bid within the CfD, developers will be able to access support against the risk of the	**Positive**

expected impact	high upfront capital costs they face[10]. Through supporting developers to repower sites which are reaching their end of life, the proposal induces benefits associated with the deployment of low carbon power by securing the supply of renewable energy and aiding in decarbonisation goals. Equally, the proposal balances the aims of working towards meeting the UK's decarbonisation commitments whilst seeking to minimise costs to the consumer, in line with the statutory considerations set out in the Energy Act 2013 and subsidy control principles. The aggregate impact on bills from this policy on its own is expected to be small. However, whether it increases billpayer (levy) costs at all will depend on future auction parameters and the outcomes of the competitive process, which cannot be easily forecasted in advance. **Phasing** Through extending phasing to FLOW, the CfD reflects the commercial realities of these projects and mitigates against the risks faced by developers when constructing these sites. Through de-risking financing into FLOW, the policy may support projects which otherwise would not be commercially viable, especially due to the nascency of the industry[11]. This supports the Government's ambition to radically increase the UK's OFW capacity. Moreover, this may have a positive impact on consumers by contributing to the decarbonisation of the UK economy. The analysis contained within this assessment considers impacts principally at the societal level for both repowering and phasing.	**Based on all impacts (incl. non-monetised)**
Monetised impacts	**Repowering** The costs and benefits associated with the introduction of the repowering proposal for the next Allocation Round is contingent on future decisions around the design of future CfD Allocation Rounds (including the budget made available), the outcome of future competitive auctions, and the nature of the bids received. Noting the inherent uncertainties surrounding a competitive auction process, it is not possible to accurately forecast wider societal impacts. This means that monetised benefits and costs only partially capture the impact of the policy overall. Equally, uncertainty remains around the repowered ONW pipeline capacity that could seek to participate during the next Allocation Round. To address this uncertainty a 500 MW – 1000 MW range is assumed, see the Evidence Base section for more information on pipeline estimation. Based on these pipeline estimates of 500 MW – 1000 MW of repowered ONW in the next allocation round, the savings associated with greenhouse gas emissions and the support (levy) costs of this proposal are monetised. The estimated greenhouse gas emissions savings are estimated to be	**Neutral** **Based on likely £NPSV**

[10] For more detail, see the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment.
[11] Ibid.

	between £400m - £700m, assessed over the lifetime of an ONW farm[12]. The direct support (levy) costs are estimated to be between £700m - £1500m, assessed over the 15-year period of CfD support. However, this estimated increase in support costs would be contingent on deployment of repowering projects being secured through an auction budget which is theoretically larger than it would have been in the counterfactual, without the repowering policy change. No decisions have been taken on future auction parameters and so the likelihood of this remains highly uncertain. The estimated levy cost impact is not the same as the net impact of increased renewables deployment on electricity bills (which is more complex) – other competing factors may offset or outweigh some or all of this impact. This is explored further in the Evidence Base section. Importantly, an estimated increase in support costs does not reflect the net impact to consumer bills. Deploying renewables at scale is expected to place downward pressures on wholesale prices and lead to increased network costs associated with supporting new capacity. In general, UK household electricity bills are determined by many factors including international gas prices, the different technologies that generate electricity, investments in the electricity network and how households use electricity. Further, the precise impact on consumer bills will be dependent on factors including the outcome of the competitive auction process and future wholesale electricity prices, both of which remain uncertain. See the Evidence Base section for more information on underlying assumptions. **Phasing** The monetised analysis is only applicable to the repowering policy proposal considered in this Impact Assessment, with phasing analysed through consideration of non-monetised impacts.	
Non-monetised impacts	**Repowering** It is the Government's view that allowing ONW sites which are reaching their end of operating life to repower allows the efficiencies these sites offer to be maintained, such as relatively high topographical benefits to generation and access to pre-existing network infrastructure[13]. In addition to this, should existing renewable projects retire at the end of their life rather than repower during this period, this capacity would also need to be replaced in addition to Government's deployment expectations, in line with 2030 and 2050 targets. As such, enabling repowering for ONW efficiently uses pre-existing resource whilst working towards the Government's decarbonisation aims.	**Positive**

[12] Assumed to be 25-years based on DESNZ's Generation Costs 2023 report.
[13] DESNZ. Proposed Amendments to CfD for the next Allocation Round. Available at: https://www.gov.uk/government/consultations/proposed-amendments-to-contracts-for-difference-for-allocation-round-7-and-future-rounds

	Equally, existing ONW sites tend to be in areas where the community have already adapted to existing infrastructure. Allowing these sites to repower rather than decommission could aid in support communities where the sites are based. Maintaining or increasing renewable capacity has the potential to realise a secondary benefit and support highly skilled green jobs. **Phasing** The introduction of phasing to FLOW is likely to de-risk the deployment of the technology whilst increasing confidence in its delivery and its ability to aid in decarbonisation of the UK economy[14]. This is due to phasing allowing larger FLOW projects to become more commercially viable by mitigating the construction risk they often face due to challenging construction conditions, such as severe weather. Through decreasing overall project risk, primarily due to the mitigation of this construction risk, it is also plausible that the proposal may reduce financing costs for FLOW. The proposal may exert a downward pressure on the cost of the technology due to the subsequent reduction in construction risk, lowering financing costs.[15] If enabling phasing for FLOW led projects to bid into an earlier allocation round than they otherwise would, there could be a cost to consumers if this meant capacity was less likely to benefit from downward cost pressure from technology learning over time. The extent to which this is the case is highly uncertain - forecasting technology cost reductions is very difficult in advance, and we cannot say with certainty that there will be significant reductions between two annual allocation rounds. Some of this impact would theoretically be offset by a reduction in financing costs and the emissions and wider economic and societal benefits of low carbon electricity generation, if the change enabled earlier deployment. The primary purpose of the CfD is to encourage low carbon electricity and this must drive the decision making relating to the overall scheme. There may be secondary advantages to the proposal: for example, in considering the relative nascency of the technology, the UK may benefit from early-mover advantages in the sector. By potentially increasing the attractiveness of the UK's FLOW sector, this may lead to increased export opportunities for business and wider economic spillovers for society.	
Any significant or adverse distributional impacts?	**Repowering** The distributional impact of the proposal is contingent on future decisions around the design of future CfD Allocation Rounds (including the budget made available), the outcome of future competitive auctions, and the nature of the bids received. Analysis suggests with an increase in the subsidy cost, an	**Uncertain**

[14] For more detail, see the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment.
[15] Ibid.

	upper bound estimate on an increase to the average annual 'per household' levy cost is £1 per year across the 15 years of CfD support (undiscounted). In practice, levy costs will be borne by both domestic and non-domestic electricity consumers. The above only considers the impact on domestic households, but it should be acknowledged that non-domestic electricity consumers currently pay for the majority of CfD-related levy costs. Importantly, the estimated subsidy (levy) cost impact is not the same as the net impact of increased renewables deployment on electricity bills (which is more complex) – other competing factors may offset or outweigh some or all of this impact. This is explored further in the Evidence Base section. Despite this, the Government recognises that any material impact on subsidy costs borne by electricity consumers has the potential to disproportionately impact disadvantaged households (for example, disabled individuals and older individuals). However, through increasing renewable generation, the proposal also decreases emissions. In the counterfactual emissions would remain at a higher level, this may have disproportionate effects on disadvantaged households, due to not having access to technologies to mitigate the effects of climate change (e.g. air conditioning) or having poorer access to healthcare required during extreme weather[16]. **Phasing** The proposal of phasing is considered likely to reduce the risk of financing FLOW technology, plausibly leading to a decrease in the cost of financing or at least mitigating increases to financing costs[17]. However, the impact on bills remains uncertain. The likely reduction in financing costs will not necessarily lead to savings for consumer bills. Despite this, by de-risking the FLOW industry and increasing investor confidence, the proposal may lead to increased deployment. Through increasing renewable generation against the counterfactual, this will likely have a positive impact on emissions. In the counterfactual, whereby emissions are likely higher, disadvantaged households may be disproportionately impacted by the effects of climate change (e.g. access to air conditioning) or having poorer access to healthcare which is required during extreme weather.	

(2) Expected impacts on businesses

Description of overall	**Repowering** Businesses affected both directly and indirectly by the proposal are likely to be net beneficiaries. Developers of repowered	**Positive**

[16] Stanford explainer: Social cost of carbon. Available at: https://news.stanford.edu/2021/06/07/professors-explain-social-cost-carbon/#Definition

[17] For more detail, see the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment.

business impact	ONW farms face similarly high upfront capital costs to new build sites[18]. As such, by allowing repowered projects to apply for a CfD this supports developers against the risk of these capital costs, likely stimulating investor confidence. **Phasing** Developers of FLOW sites will benefit due to being able to mitigate construction risk through phasing, and so attract financing into their projects. Whilst investors will likely gain due to being able to have increased confidence in their financing of FLOW.	
Monetised impacts	Monetised impacts for repowering are captured at a societal level, as described in Table A. Phasing is not assessed through monetised impacts.	**Positive** **Based on likely business £NPV**
Non-monetised impacts	**Repowering** By allowing developers to apply to the CfD to repower their ONW site, this prevents them from otherwise having to decommission their site due to high upfront costs associated with full repowering. **Phasing** Developers are likely to benefit from the proposal as phasing is likely to de-risk FLOW projects and increase investor confidence. Additionally, non-monetised benefits which relate to the capturing of early-move advantage in the FLOW sector are described at the societal level and apply similarly to businesses.	**Positive**
Any significant or adverse distributional impacts?	Distributional impacts are considered at a societal level in Table A above.	**Positive**

(3) Expected impacts on households

Description of overall household impact	Whilst it is not anticipated that phasing will increase consumer bills, it is possible that the introduction of repowering may increase consumer bills by a small amount under certain scenarios. This is explored more in the Evidence Base section. Despite this, overall, households stand to benefit in the long run from a more sustainable and diverse energy mix due to the proposed policies increasing the likelihood of investment in renewable energy generation. Decarbonisation gives rise to non-monetisable benefits from a household and consumer	**Neutral**

[18] For more detail, see the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment.

	perspective and reduces bill payer exposure to long term gas prices over time. As such, the Government considers a potential rise in cost to billpayers to be offset by significant non-monetised and non-power sector impacts.	
Monetised impacts	Monetised impacts on repowering are considered at a societal level in Table A. Phasing is not assessed through monetised impacts.	**Uncertain**
Non-monetised impacts	Non-monetised impacts are likely to include the benefits associated with a more sustainable energy mix, decarbonisation, and reduced exposure to long-term gas prices.	**Positive**
Any significant or adverse distributional impacts?	Distributional impacts are considered at a societal level in Table A above.	**Uncertain**

Table B: Impacts on wider Government priorities

Category	Description of impact	Directional rating
Business environment: **Does the measure impact on the ease of doing business in the UK?**	**Repowering** In the aggregate, the Government anticipates that the proposals will ease doing business in the UK. Foremostly, both proposed policies address the current barriers faced by developers within the repowered ONW sector and FLOW sector, respectively. On the former, repowered ONW projects face high upfront capital costs, like that of new ONW projects. By addressing this barrier through allowing repowered ONW projects to bid into the CfD, thereby mitigating the revenue risk investors otherwise face, the policy makes investment into repowered wind more attractive for developers. This only applies for ONW in the current proposal, whilst this may prevent other technologies from repowering, this is to protect consumers against projects which may not have the same high upfront cost as repowered ONW and so, could repower or life extend without CfD support[19]. **Phasing** Considering the phasing policy, a similar impact on the business environment is likely to be achieved via the increase in commercial viability of FLOW facilitated by the proposal. The proposal follows the approach taken for fixed	**Supports**

[19] For more detail, see the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment.

	bottom offshore wind, which is now an established industry in the UK. By extending the opportunity of phasing to FLOW, the proposal moulds the CfD to fit the construction realities of the development of larger FLOW sites. By engaging with these commercial realities, the proposal reduces risk faced by investors and developers and, so, is expected to promote financing for the sector.	
International Considerations: **Does the measure support international trade and investment?**	The Government anticipates that the proposals will likely have a neutral impact on international investment. **Repowering** Repowering for the next Allocation Round is restricted to ONW, with an anticipated pipeline of 500 – 1000 MW estimated for this period. Given international levels of deployment of ONW, it is anticipated that this proposal will have minimal implications on international trade and investment. **Phasing** Whilst the proposal is likely to have a positive impact on FLOW UK supply chains and infrastructure due to supporting a nascent industry, it is not anticipated to have a significant impact on international trade or investment.	**Neutral**
Natural capital and Decarbonisation: **Does the measure support commitments to improve the environment and decarbonise?**	**Repowering** It is estimated that the proposal will save between £400m – £700m in carbon costs for the next Allocation Round, measured over the expected lifetime of an ONW site[20]. Beyond monetised benefits, through supporting developers to repower sites which are reaching their end of life, the proposal induces benefits associated with the deployment of low carbon power by securing the supply of renewable energy and aiding in decarbonisation goals. **Phasing** A similarly positive impact is expected to be achieved by phasing. By offering support to FLOW developers through mirroring their commercial realities, the policy aims to stimulate deployment of FLOW. The impact of this should further ambitions to decarbonise the UK economy.	**Supports**

[20] Assumed to be 25-years based on DESNZ's Generation Costs 2023 report.

6. Monitoring and evaluation of preferred option

M&E Objective 1: To provide timely learnings about the implementation of the proposed policy changes at the next Allocation Round to inform for AR8.

A process evaluation conducted following the launch of the next Allocation Round will provide timely insights into the policy proposals. This evaluation would aim to provide direct insights and recommendations to feed into the development of AR8.

The process evaluation would consist of:

- Interviews / workshops with DESNZ colleagues involved in the design and launch of the next Allocation Round to provide learnings about how internal processes could be improved.
- Interviews with applicants (successful and unsuccessful) to understand experiences of participating in the auction. This would provide learnings about how scheme design could be improved.
- Interviews with ONW projects at end of life and FLOW projects which could have participated in the next Allocation Round but chose not to. This would help us understand whether policy design acted as a barrier to participation.
- Interviews with other technologies which were not permitted to bid as repowering projects. This would provide insight into the demand from other technologies within the renewable energy sector for repowering support.

M&E Objective 2: To monitor short and long-term benefits from the proposed policy changes, enabling course-correction as needed.

A robust monitoring and benefits realisation plan will be designed and implemented alongside launch of the next Allocation Round to monitor progress and outcome metrics. Specific metrics to be monitored will need to be developed, with the intention that these will provide valuable insights to allow deeper investigation or course-correction as needed (e.g. linked to a non-delivery disincentive process).

M&E Objective 3: To evaluate the impact of the proposed policy changes, and the extent to which the proposed policy objectives have been realised.

Five years following the implementation of the proposals there will be a post-implementation review. This review will look to answer the following questions:

1. To what extent is the existing regulation working?
2. Is the existing form of Government regulation still the most appropriate approach?
3. Is Government intervention still required?
4. If this regulation is still required what refinements could be made? (What scope is there for simplification, improvements?)
5. If this regulation is not required, but Government intervention in some form is, what other regulation or alternatives to regulation would be appropriate?

Evidence from the process evaluation, monitoring and wider evaluation activities and analysis in this space will be used to inform this review.

9. Minimising administrative and compliance costs for preferred option

Repowering:

It is not anticipated that a repowering application will incur additional costs to developers which would not already be borne by those applying to the CfD. To minimise potential administrative burden caused from the introduction of a new policy within the CfD, the Government is seeking to mitigate this by clearly outlining the requirements a repowering application must satisfy in its Allocation Framework which will be published before the next Allocation Round begins. Equally, clear guidance will be given to National Grid ESO and Ofgem to inform the appeals process to mitigate any potential additional burden the change in eligibility criteria may cause.

Phasing:

The Government anticipates that there may be a small additional cost to developers who apply for a phased CfD due to additional information required by the National Grid ESO for up to three phases rather than just one. Equally, if they are successful in a round, each phase will have a separate contract, which could involve some small additional administrative burden, although in practice, LCCC tend to manage phased contracts as a single project as far as possible. Despite this potential small additional administrative cost, developers can choose not to phase their project and instead apply for a non-phased CfD if the costs outweigh the benefits of this approach.

Declaration

Department:

Department for Energy Security and Net Zero

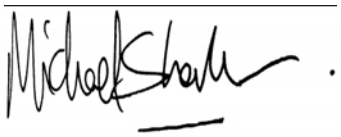
Contact details for enquiries:

ContractsforDifference@energysecurity.gov.uk

Minister responsible:

Michael Shanks MP

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed:	
Date	17/10/2024

Evidence base

Repowering: Monetised costs and benefits of preferred policy option

The following monetised analysis considers solely the repowering proposal, with the phasing proposal being explored through an illustrative scenario in the Section Phasing: Analysis of impacts under illustrative scenarios. The impact of the phasing proposal has not been monetised due to uncertainty around the phasing FLOW pipeline for the next Allocation Round. Specifically, challenges around quantification of scenarios based on what the up-take of phasing may be in the next Allocation Round and how projects may choose to phase (e.g. capacity phased across 'phases', how many years they choose to phase for). As such, the decision has been made to assess the FLOW proposal through illustrative scenarios and a discussion of likely impacts stemming from these scenarios.

On the monetised impacts for the repowering proposal, these have only been assessed for the next Allocation Round. Further technologies may become eligible for repowering in future Allocation Rounds, these subsequent rounds would be subject to further analysis in the context of repowering. Whilst the proposal is likely to have impacts which reach beyond the next Allocation Round, monetisable impacts are inherently dependent on the future project pipeline, which is highly uncertain beyond the next Allocation Round. Government will keep the policy under review and may make further changes ahead of future allocation rounds, which would be subject to additional analysis.

Furthermore, the costs and benefits associated with the introduction of the repowering proposal to the next Allocation Round is largely contingent on future decisions around the design of future CfD Allocation Rounds (including the budget made available), the outcome of future competitive auctions, and the nature of the bids received. Noting the inherent uncertainties surrounding a competitive auction process, it has not been possible to calculate precise estimates for wider societal impacts.

Two illustrative scenarios (Scenario A and Scenario B) have been constructed to demonstrate the potential impacts (and their scale) that the repowering proposal could have. The illustrative scenarios are as follows:

- Scenario A: In this Scenario, the budget available in the next CfD auction is not augmented to capture additional repowering capacity in the bid pipeline, potentially leading to increased competition for the same budget.
- Scenario B: In this Scenario, the extra capacity represented by repowered ONW is reflected by a material budget increase to secure some of this technology. As such, additional capacity is secured because of the policy change in the next Allocation Round.

The monetised analysis quantifies the difference between impacts under the repowering policy package and the 'Do Nothing' option based on the following components:

- **Support cost impacts:** These are calculated as the difference between the projected intermittent market reference price assumed to be captured by CfD assets over the course of their 15-year contract, and the strike price assumed to be given to winning projects. This represents a transfer between consumers and generators, but the illustrative

magnitude of support costs has been estimated to demonstrate the potential differences in costs to consumers across the options set out.

- **Greenhouse gas impacts:** The change in generation facilitated by the estimated ONW repowering pipeline for the next Allocation Round is used to estimate the change in emissions from the proposal. In line with the Green Book supplementary guidance on valuing greenhouse gas emissions for changes to grid electricity, the long run marginal grid electricity emissions factors are utilised to estimate emission savings from the proposal. These emission factors vary over time as there are different types of power plants generating electricity across the day and over time, each with different emissions factors. This incorporates the view that over time more renewables will come online and so the degree to which repowered ONW generation reduces carbon emissions decreases with time. The resulting emissions are using appraisal carbon values in line with the supplementary Green Book guidance[21].

The following impacts of the repowering proposal are assessed through the two illustrative scenarios set out above and within a range of likely repowered ONW in the pipeline for the next Allocation Round. This range considers the scenarios within the context of an estimated 500MW – 1GW of repowered ONW available for the next Allocation Round, based on internal DESNZ analysis. This represents a purely illustrative scenario and not the Government's prediction of auction outcomes which are inherently uncertain in advance.

The illustrative scenarios are framed by a set of assumptions as to explore these impacts. It is assumed that half of each pipeline capacity would be deployed in the two sets of respective delivery years for the next Allocation Round, which we consider to be 2027/28 and 2028/29. On prices, it is assumed that the costs of a repowering ONW project are likely to be similar to the high capital costs faced by new ONW projects[22]. As such, to estimate support costs, the ONW AR6 and AR5 clearing price are used to estimate the price of repowered ONW. Despite this, the cost of repowering project relative to new ONW projects remains uncertain. As such, this impact will continue to be assessed in future Allocation Rounds. Finally, it is assumed that repowered ONW has similar load factors to new ONW, and so the load factor of 45% is used based on the 2023 Electricity Generation Costs report and CfD AR6 Standard Terms Notice[23]. In line with this approach, it is also assumed that repowered ONW will have the same operating lifetime as new ONW.

Support cost impacts

The illustrative impact on support costs shown in Table 1 has been estimated as the total support costs for the policy change over the 15-year CfD contract period. We consider it reasonable to assume that the cost of repowered ONW is similar to that of new ONW projects, for more detail see Section 2. To gain an estimate of the next Allocation Round's clearing price for repowered ONW, we use both the ONW AR6 and AR5 clearing price. This allows us to capture a range of estimated support costs, testing an assumed clearing price for repowered ONW at both £50.90/MWh to £52.29/MWh (2012 prices). This is to reflect the uncertainty of auction outcomes and policy impacts under a competitive allocation process.

[21] See https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal

[22] For more detail, see the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment.

[23] See https://assets.publishing.service.gov.uk/media/65e85ee662ff48001a87b243/cfd-ar6-standard-terms-notice.pdf, Table J.

Equally, these results are illustrative only and should not be read as an indication of Government policy on ASPs for future Allocation Rounds.

Table 1: Illustrative change in support costs under policy scenarios compared to the "Do Nothing" counterfactual. Measured over the lifetime of the CfD, 2024 prices, discounted, £m, rounded to nearest £100m.

Repowered ONW Capacity (MW)	Scenario A	Scenario B
500	0	700 - 800
1000	0	1500

In Scenario A, repowered ONW projects can bid into the next Allocation Round but the budget available in the next CfD auction is not augmented to capture additional repowering capacity in the bid pipeline. As such, support costs are necessarily no more than zero under this scenario, as the budget is unchanged from the "Do Nothing" option. So, support costs are unchanged for the next Allocation Round between the introduction of the proposal in Scenario A and the "Do Nothing" option.

Under Scenario A where repowered ONW does bid competitively, so makes successful bids, it is possible additional renewable energy capacity is secured in the next Allocation Round whilst maintaining broadly equivalent support costs, compared to the "Do Nothing" option. Through the introduction of repowered ONW into the bid pipeline, competition possibly increases. With increased competitive tension, the average bid price may decrease which would allow additional capacity to be secured within the same budget, and without support cost increases.

Under Scenario A, even if repowered ONW does not bid competitively, it is likely that support costs and capacity secured remain unchanged compared to the "Do Nothing" option. In this instance, the introduction of repowered ONW does not increase competitive tension, as the bids placed by repowered projects are not competitive. As such the average bid price for the next Allocation Round is likely to be broadly equivalent to the "Do Nothing" option.

In the case of Scenario B, it is assumed that an additional 500 – 1000 MW of repowered ONW is secured by a change in the available budget for the next Allocation Round. This budget change is based on the range of assumed clearing prices set out above, and necessarily increases as the clearing price increases. In this Scenario, additional repowered capacity bids into the next Allocation Round and successfully secures a CfD, with the support costs of this likely increasing if more capacity bids in, as explored in Table 1. However, this does not quantify for the likelihood that increased competitive tensions through the introduction of repowered ONW may lead to a decrease in average bid prices. This is counter to Scenario A, where competitive tensions likely lead to only some of the repowered ONW capacity being secured at the same cost as the "Do Nothing" scenario, whereas in Scenario B, all the repowered ONW in the pipeline can be secured, preventing the loss of these assets.

Greenhouse gas impacts

The estimated value of changes in greenhouse gas emissions from electricity generation for the illustrative scenario is set out in Table 2.

Table 2: Illustrative change in carbon costs under policy scenario from 2027 to 2052, scenarios compared to the "Do Nothing" counterfactual. 2024 prices, discounted, £m, rounded to nearest £100m.

Repowered ONW Capacity (MW)	Scenario A	Scenario B
500	0	-400
1000	0	-700

Under Scenario A, repowered ONW projects can bid into the next Allocation Round but the budget available in the next CfD auction is not augmented to capture additional repowering capacity in the bid pipeline. Either repowered ONW projects can successfully place a competitive bid and be awarded a CfD, or they bid uncompetitively, so are not awarded a CfD.

If repowered ONW bids uncompetitively, then there are no carbon cost savings achieved under the introduction of the proposal. This is due to no extra capacity being secured, so capacity achieved under the next Allocation Round is unchanged from the "Do Nothing" option. In the "Do Nothing" option, ONW farms which are reaching their end of operating life cannot formally repower with support from the CfD scheme, so likely cease operations all together. A similar outcome is likely to occur if repowered ONW bids uncompetitively, as although it can apply for the CfD in the next Allocation Round, it does not successfully secure support due to being outbid in the competitive allocation process. As such, in both option "Do Nothing" and Scenario A where repowered ONW is uncompetitive the ONW farms shut down, likely to be replaced, in the short term, by higher carbon generation.

Alternatively, if repowered ONW bids competitively under Scenario A, it is possible the carbon saving associated with the policy is non-zero. In this instance, there is no additional budget available to secure repowered ONW projects, however if the introduction of repowered ONW stimulates increased competitive tensions this may decrease the average bid price. This could lead to additional capacity being secured compared to the "Do Nothing" scenario, but at the same budget. As such, there would be carbon savings associated with Scenario A in this instance. The extent of these carbon savings relies on other bids received, the competitive allocation process and the Allocation Framework which will be published ahead of the next Allocation Round. As such, the extent of carbon savings possible under Scenario A is unclear, but as an illustrative scenario, it demonstrates that the lower limit carbon savings of the policy are zero when no additional budget is allocated.

Under Scenario B, for the additional capacity of repowered ONW available, it is assumed that there is a change in available budget for the next Allocation Round to capture this. For each estimate of the repowered ONW pipeline presented, the carbon cost savings are monetised through a comparison to the counterfactual. In the counterfactual, the 500 – 1000 MW of capacity from repowered ONW is not secured as these projects are not able to apply for the CfD. This capacity then considered to be met by a more carbon-intensive capacity mix from the energy system. These calculations are based on the current operational lifetime assumptions for ONW[24] and factor into the analysis that over time we assume increased renewables entering the capacity mix.

In Scenario B, the support (levy) costs associated with repowering outweigh the monetised carbon cost savings. However, that does not mean we anticipate the net impacts of the policy to be negative. The estimated levy costs should not be interpreted as the net impact of increased renewables deployment on electricity bills, since this is dependent on other competing factors that may offset or outweigh some, or all, of this impact. The levy costs are associated with significant uncertainty and therefore, may be an overestimate in the illustrative scenarios. Additionally, the levy costs do not account for the non-monetised

[24] Generation Costs Report 2023. Available at: https://www.gov.uk/government/publications/electricity-generation-costs-2023

benefits associated with low carbon electricity deployment. As previously discussed, competitive tensions increasing due to the proposal will likely lower average bid prices and lower the repowered ONW clearing price, with support costs monetised in this IA reflecting an upper estimate. Equally, whilst the monetised greenhouse gas emissions impact captures the direct impact of the proposal on the carbon reduction by increasing renewable generation on the grid, it does not account for further emissions savings related to repowering. For example, permitting repowering projects to apply for a CfD may secure the use of existing sites with the best topography for electricity generation and existing network infrastructure. It could also improve the efficiency and optimisation of those sites and could even increase the capacity produced from the same site significantly, providing additional efficient carbon abatement.

Phasing: Analysis of impacts under illustrative scenarios

The impact of the phasing policy is explored discursively through two scenarios. In Scenario 1, the phasing proposal leads to a FLOW project becoming commercially viable, whereas in the counterfactual the project cannot go forward as it is not permitted to apply for a phased CfD and is not otherwise financially viable. In Scenario 2, the phasing proposal allows projects to phase which were already commercially viable.

Under Scenario 1, the construction process of FLOW projects may be de-risked by being able to build out capacity in multiple phases. This de-risking process is linked to the short weather windows which permit the construction of FLOW sites, subsequently driving up construction risk and the cost of financing[25]. Equally, as FLOW remains a nascent sector, the construction process has not yet been industrialised. This can lead to further construction risk, for example, limitations on suitable port capacity could delay construction. Through the phasing proposal, a FLOW project can limit this risk by building out generating capacity in multiple stages and earn revenue on available capacity whilst constructing further turbines. Under Scenario 1, the proposal will likely contribute to the UK meeting its ambition of to radically increase OFW capacity.

Under Scenario 2, developers of FLOW projects, which were already commercially viable, can choose to phase their project. This could lead to a delay in the generation from FLOW in the UK. If in the counterfactual projects would have been commercially viable and not permitted to phase, they would likely build all of their capacity at once and as quickly as possible to generate and access CfD payments. In Scenario 2, these projects could choose to build part of their project in ‘Phase 1’, for example, and then build out the rest of the total capacity in further phases. In the long term, the generative capacity is unchanged, however, in the short term, there could be less renewable energy being generated from FLOW whilst further ‘Phases’ were in the pipeline. The Government considers this outcome under Scenario 2 to be highly unlikely. Developers are economically incentivised to build out capacity as quickly as possible so as to be able to access both revenue and CfD payments from as large a generative capacity base as possible. As such, it is unlikely that the introduction of phasing would materially impact the real timelines for project build out but would reduce the perceived risk of meeting contractual timelines. This risk is further mitigated by the proposal stipulating that at least 25% of the projects overall capacity must be built out in the first phase.

[25] For more detail, see the Government response to consultation on policy considerations for future rounds of the Contracts for Difference scheme published alongside this Impact Assessment.

Considering Scenario 2, it is also possible that smaller projects which are commercially viable may choose to band together multiple projects under one bid. For example, it is possible that smaller projects may band together to artificially appear as a single, large project. In doing so, they may seek to lock in a strike price in the next Allocation Round and build out phases in future years at a higher strike price, with the likelihood that strike prices for FLOW will fall as the technology matures. This could exert an upward pressure on costs and reduce benefits to consumers. However, an upward pressure on subsidy (levy) costs from the proposal is not equivalent to a net impact of increased renewables deployment on electricity bills (which is more complex). Regardless, the Government views Scenario 2 to be unlikely. For smaller projects to present themselves as a single, large project would be logistically challenging. Despite this, the risk of this is also mitigated due to the 1.5 GW capacity cap which was deliberately designed to prevent applicants submitting one bid to develop several different projects. As such, it is likely that under Scenario 2, where projects can phase but are commercially viable without phasing, that these projects are not incentivised to apply for a phased CfD.

Non-monetised cost and benefits of preferred policy options

Impact on small and medium businesses (SAMBAs)

The Government anticipated the repowering proposal to have a minimal impact on SAMBAs as most developers of ONW farms are large developers.

In relation to phasing, FLOW facilities are owned, broadly speaking, by large multinational corporations. As such, the impact on small business is likely to be limited. However, some medium-sized businesses in the FLOW supply chain may indirectly benefit due to the policy likely de-risking and potentially stimulating financing into the sector.

Impact on jobs

Through supporting sites to repower and the ONW industry more broadly, it is likely that the proposal may support highly skilled green jobs. However, the magnitude to which the policy change may impact jobs is dependent on the specification and results of future allocation rounds.

The extension of phasing to FLOW will likely increase deployment of the technology and, consequently, the expansion the sector. As such, it is considered likely that this will support highly skilled green jobs by the development of both the FLOW sector and the supply chain.

Business environment

Firstly, the repowering proposal aims to formally introduce a route to repowering for ONW projects into the CfD scheme. Currently, there is no established route for repowering projects to bid into the CfD scheme, and instead, they are assessed on a case-by-case basis. It is possible that this proposal will impact ONW developer and investor behaviour as it may signal a route to market for repowering projects.

A caveat is that the policy may lead to the displacement of financing into new segments of the ONW sector and other parts of the renewable energy industry, due to the higher load factors frequently characteristic of sites with potential to repower. This impact may be further

exacerbated in future allocation rounds whereby the pipeline of repowering projects is likely to increase as more ONW projects reach their end of operating life. However, overall, it is considered more likely that this policy will increase the overall level of financing by increasing the commercial viability of another source of renewable generation whilst maintaining continued support for new renewable projects.

Considering the extension of phasing to FLOW, the Government considers it likely that the policy will have a positive impact on the business environment. The proposal supports the CfD to better match the construction realities of the sector, as such, the proposal reduces construction risk faced by investors and developers. Through this reduction in risk, the policy is likely to increase financing into the sector.

Trade implications

It is expected that trade implications from both proposals will be minimal. On repowering, the estimated pipeline for repowered ONW in the next Allocation Round is between 500 – 1000 MW. Given international levels of deployment of ONW, it is not anticipated that the proposal has significant trade implications. Similarly, whilst the phasing proposal is likely to have a positive impact within the UK, it is not anticipated there will be significant trade implications.

Environment: Natural capital impact and decarbonisation

It should be noted that each project awarded a CfD will, naturally, have an impact on the local environment of that project. Whilst a CfD project is under construction, there may be secondary effects impacting the local environment. For example, increased road traffic or some impact on the local environment. To mitigate this, every project that applies for a CfD must have valid planning consent. At this stage, if any concerns are raised over the impact on the local environment, then the project developers work with the local community to overcome their concerns. The costs and benefits to the environment from the proposal of repowering is considered quantitatively in previous sections of this Impact Assessment. Considering the proposal of the extension of phasing to FLOW, the Government considers the proposal to have a positive impact on decarbonisation of the UK economy through a qualitative assessment. By facilitating increased deployment of FLOW, the proposal will likely aid in decarbonisation of the UK's electricity supply and support the Government's 2030 offshore wind ambitions.

Summary

The Government recognises the need for the CfD to evolve as to address the complex transformation required of the energy system to meet the UK's 2050 Net Zero emissions and 2030 Clean Power mission. This IA considers two policy changes to the CfD design which the Government recently consulted on: Phased CfDs for FLOW and Repowering. Both are assessed by this IA to have a likely net positive impact.

The Phased CfDs for FLOW proposal aims to mitigate construction risk faced by FLOW projects and, so, de-risk financing and the technology's deployment. A qualitative, discursive, and scenario-based approach was taken to assess this likely impact of the policy change. The analysis found the policy to likely be low risk, largely linked to economic incentives faced by developers and the policy design.

Through repowering, at the end of a site's operational life developers can choose to replace the key components of their site rather than decommission. The benefits of this include facilitating the commercial viability of ONW, capturing efficiency gains in the ONW sector, aiding in decarbonisation goals, and helping to secure the supply of renewable energy. Monetised scenario-based analysis of both the support costs and emissions savings, alongside an assessment of non-monetised impacts, were used in the assessment of the proposal. The overall finding of the analysis was that whilst in certain scenarios it appeared monetised costs outweighed monetised benefits, on the whole, this likely captured an upper estimate of costs and did not fully quantify benefits. As such, overall, considering quantified and non-quantified costs and benefits, the policy is regarded to have a net positive impact.

The impacts of both proposals will depend on future auction parameters and the outcomes of the competitive process in the next Allocation Round, which cannot be easily forecasted in advance. As such, this IA aims to consider the impacts based on a range of scenarios for each policy proposal, finding both to have a likely net positive impact. Monitoring and evaluation is planned to assess the policy changes once implemented. This is to enable course-correction, as needed, to gain an understanding of short and long-term benefits of the proposals and to evaluate the extent to which policy objectives have been realised.