Title: Proposed amendments to Allocation Round 6 - Making generators directly supplying offshore oil and gas facilities ineligible for the Private Network CfD Agreement **IA No:** DESNZ011(C)-23-EI **RPC Reference No:** N/A **Lead department or agency:** Department for Energy Security and Net Zero **Other departments or agencies:** N/A	**Impact Assessment (IA)** **Date:** July 2023 **Stage:** Final **Source of intervention:** Domestic **Type of measure:** Other **Contact for enquiries:** BEISContractsForDifference@beis.gov.uk

Summary: Intervention and Options

RPC Opinion: Not Applicable

Cost of Preferred (or more likely) Option (in 2022 prices)			
Total Net Present Social Value: -£25m to -£135m	**Business Net Present Value** N/A	**Net cost to business per year** N/A	**Business Impact Target Status** Non qualifying provision

What is the problem under consideration? Why is government action or intervention necessary?

The Contracts for Difference (CfD) scheme is the Government's primary means of supporting new low carbon power generation. Under the terms of the Private Network (PN) CfD Agreement, generators are eligible to receive CfD payments for electricity supplied via private wire, such as to hospitals for dedicated onsite consumption, and also currently to an Oil and Gas (O&G) platform. Government is aware that use of PN CfD Agreements may increase in future, to support the electrification of offshore O&G facilities, to meet emissions reductions targets committed to by the offshore O&G industry in the North Sea Transition Deal (NSTD). Without intervention, this could result in electricity consumers, who ultimately fund the CfD scheme, subsidising renewable electricity that is directly supplied to offshore O&G facilities. The offshore O&G sector's emissions reduction targets under the NSTD were not conditional on financial support for electrification from government or from electricity consumers. Nevertheless, the sector may receive financial support for electrification through the decarbonisation investment allowance under the Energy Profits Levy (EPL). There is no specific evidence that it is necessary and proportionate for consumers to provide additional financial support through the CfD scheme.

What are the policy objectives of the action or intervention and the intended effects?

The objective of the policy change proposed at consultation is to prevent consumers from subsidising renewable electricity that is directly supplied to offshore O&G facilities, which would represent a new burden on household energy bills. The intended effects are to ensure that the scheme can continue to support the decarbonisation of the electricity system while ensuring value for money for consumers.

These objectives and intended effects align with the central purpose of the CfD scheme, which is to support low carbon electricity generation, whilst taking into account cost to consumers and other key considerations set out in the Energy Act 2013.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 0 - Do nothing: Renewable generators that directly supply offshore O&G facilities remain eligible to apply for the PN CfD Agreement. Consumers, who ultimately fund the CfD scheme (via a levy on electricity suppliers), could subsidise renewables generation that is directly supplied to these facilities.

Option 1 (preferred) – Amend the Allocation Framework and the PN CfD Agreement to make renewable generators that directly supply offshore O&G facilities ineligible to apply for that Agreement. This is our preferred option as it avoids a new cost burden on consumers – electricity supplied solely for offshore O&G facilities would not be subsidised via consumer electricity bills.

Will the policy be reviewed? It will not be reviewed. **If applicable, set review date:** N/A				
Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	**Micro** No	**Small** No	**Medium** No	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** 0.9-4.4	**Non-traded:**	

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 by the responsible Minister:  Date: 11th July

Summary: Analysis & Evidence

Policy Option 1

Description: Amend the Private Network (PN) Contracts for Difference (CfD) Agreement to make renewable generators that directly supply offshore oil and gas (O&G) facilities ineligible to apply for that Agreement. Supplying and receiving electricity via a private network, also referred to as 'private wire' supply, avoids certain network charges and some policy costs, including those imposed on licensed supply to fund renewable support schemes, such as the CfD. The savings are shared between the generator and the end-user so that the latter buys electricity below the retail cost of grid electricity while the former sells above the wholesale market price.

FULL ECONOMIC ASSESSMENT

Price Base Year 2022	**PV Base Year** 2024	**Time Period Years** 21	**Net Benefit (Present Value (PV)) (£m)**		
			Low: -25	**High:** -135	**Best Estimate:** N/A

COSTS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Cost** (Present Value)
Low			**-25**
High			**-135**
Best Estimate			**N/A**

Description and scale of key monetised costs by 'main affected groups'

The cost of this proposal depends on the final decisions of O&G platforms to pursue electrification following the implementation of this policy. Illustrative scenarios have been estimated to demonstrate some potential impacts on carbon costs, although there is uncertainty on the impact of this proposal and expected natural decline of the sector. The results suggest a potential cost increase, as there could be a risk of an increase in carbon costs if some platforms decide not to electrify but would otherwise have done so if the CfD private network arrangements remained unchanged. However, the key monetised costs presented here are subject to considerable uncertainty given the number of assumptions used for the analysis.

Other key non-monetised costs by 'main affected groups'

The cost of electricity for O&G electrification may be higher than if the proposed change was not implemented, if the platforms would have benefited from the current private network arrangements. Under current private wire supply terms, the generator would be able to receive CfD payments for electricity supplied to the O&G platform, which could enable generators to charge a lower price.

BENEFITS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Benefit** (Present Value)
Low			
High			
Best Estimate			**N/A**

Description and scale of key monetised benefits by 'main affected groups'

We do not consider there to be any key monetised benefits from this proposal.

Other key non-monetised benefits by 'main affected groups'

The savings to electricity consumers are a transfer from generators to consumers, therefore this is not presented as a cost or benefit in this assessment. Illustrative analysis presented in Section 7.3 provides an indication of the potential savings to consumers from this proposal.

Key assumptions/sensitivities/risks	**Discount rate (%)**	3.5%

Use of private network arrangements in the counterfactual: Although the Innovation and Targeted Oil & Gas (INTOG) leasing round results do provide some insight into how many projects could be eligible for a PN CfD Agreement, there is still some uncertainty regarding the potential take-up if the current private network arrangements remained unchanged.

Overall impact on O&G platform electrification: There is uncertainty about the impact of this proposal on electrification and decommissioning, or if the proposed change will materially impact decisions to electrify at all. If the expected price of electricity to the O&G platform increases significantly, compared to its current fuel cost, platforms may decide not to pursue electrification, or decommission early which could potentially put some level of production at risk.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			**Score for Business Impact Target (qualifying provisions only) £m:**
Costs: N/A	**Benefits:** N/A	**Net:** N/A	N/A

Evidence Base

Section 1: Private Network (PN) Contracts for Difference (CfD) Agreement – Current Policy

For the purposes of the CfD scheme, and as set out in the most recently published Private Network (PN) CfD Agreement[1], a generator is deemed to be a Private Network Generator if:

(A) it is exempt from the requirement to hold a licence for the generation of electricity pursuant to the Electricity (Class Exemptions from the Requirement for a License) Order 2001;
(B) the Facility generates electricity solely or partly for supply to a Private Network; and
(C) the Facility Metering Equipment is not, and is not required to be, registered in accordance with the BSC[2] (except, where the Facility is a Dual Scheme Facility, in respect of the Boundary Point Metering System used to measure the Imported Input Electricity).

Regarding point (A), considering the likely applicability of the four generation class exemptions available under the 2001 Order, this effectively limits the generator to providing less than 50MW of power from a generating station with a declared net capacity of up to 100MW (ignoring power supplied to consumers on the same site).

The CfD scheme currently recognises two forms of possible private network generation: 'hybrid' generation and 'islanded' generation.

The PN CfD Agreement defines a Hybrid Generator as 'a Private Network Generator which has access to a Grid Connection and has a Market Supply Agreement with an Onsite Customer'.[3]

The PN CfD Agreement defines an Islanded Generator as 'a Private Network Generator which has a Market Supply Agreement with an Onsite Customer, but which does not have access to a Grid Connection'.

In a CfD allocation round, if an applicant wishes to apply for a PN CfD Agreement (as opposed to a generic CfD Agreement or other contract variant), they must specify this in their application.[4] As a prerequisite for applying for a PN CfD Agreement, the applicant must be a licence-exempt generator, in accordance with point (A) of the 'Private Network Generator' definition provided above.

The PN Agreement allows a generator to receive CfD payments for electricity supplied via private wire. Generators supplying O&G facilities through a private wire, but not receiving CfD payments for the electricity supplied, would still have to apply for a PN Agreement. Under the generic CfD Agreement, electricity supplied via private wire cannot receive CfD payments due to the current licensing regime and Balancing and Settlement Code requirements.

Section 2: Problem under consideration and rationale for intervention

The government is aware that more projects may wish to apply for a PN CfD Agreement in future, to support the electrification of offshore O&G facilities. The offshore O&G industry has committed to emissions reductions targets as part of the North Sea Transition Deal, including a 50% reduction in offshore production emissions by 2030 against a 2018 baseline, which constitutes the sector's effort share for carbon budgets.

Under the terms of the PN CfD Agreement, if an offshore wind project with a PN CfD supplies electricity to an O&G platform via private wire, it would receive CfD payments for this supply. These CfD payments would then allow the generator to supply electricity to the O&G platform around the wholesale price, so consumers would effectively subsidise its electrification. In effect, there would be an additional cost for general consumers without the new low carbon electricity going to the national grid.

Section 3: Policy objective

The change to the PN CfD Agreements seeks to prevent electricity consumers, who ultimately fund the CfD scheme (via a levy on electricity suppliers), from subsidising renewable generation that is directly supplied to offshore O&G facilities. These facilities currently generate their own electricity from gas or diesel. Therefore, any support through the CfD scheme for this electricity would be a new burden on electricity bills.

Indicators of success of the proposal would be:

[1] https://www.gov.uk/government/publications/contracts-for-difference-cfd-allocation-round-5-standard-terms-and-conditions

[2] The Balancing and Settlement Code that is provided for in Standard Condition C3 (Balancing and Settlement Code (BSC)) of the Transmission Licence.

[3] This has the same meaning as 'partial connection' in the CfD application process, i.e. where a generator's output is exported to both the transmission or distribution system and a private network.

[4] Post-award, a CfD holder may agree bilaterally with the counterparty, the Low Carbon Contracts Company, to change the type of Agreement, but the counterparty is under no obligation to do so.

1. A reduced consumer burden from supporting the CfD scheme, compared to the counterfactual where generators could receive CfD payments for electricity supplied to the O&G platforms.
2. Development of offshore wind projects is not negatively impacted and electrification of O&G platforms, and the sector's ability to meet its decarbonisation targets, is not impacted.

Section 4: Summary and preferred option with description of implementation plan

The preferred option would be implemented via contract changes, coming into effect in time for AR6 in Spring 2024.

The policy objective is ultimately not to allow a potential increase in CfD support costs as a result of O&G platform electrification. The modelled scenarios indicate a potential increase in greenhouse gas emissions which has been valued as a carbon cost from an increase in traded emissions for the O&G sector (using traded carbon values) in the region of £25-135m (2022 prices) across the appraisal period (2024-2045), in comparison to the counterfactual scenario of private wire electricity to O&G platforms remaining eligible for CfD payments. We assume that, although other government support is available by way of allowances, if CfD payments are not available for private wire supply, then there is a risk that the platform electrification doesn't happen.

Section 5: Description of options considered

Option 0 - Do nothing

Renewable generators that directly supply offshore O&G facilities remain eligible to apply for the PN CfD Agreement. Consumers could subsidise renewables generation that is directly supplied to these facilities.

Option 1 (preferred) – Amend the Allocation Framework and the PN CfD Agreement to make renewable generators that directly supply offshore O&G facilities ineligible to apply for that Agreement.

The change to the PN CfD Agreement seeks to prevent electricity consumers from subsidising renewables generation that is directly supplied to offshore O&G facilities. These facilities currently generate their own electricity from gas or diesel. Therefore, any support through the CfD scheme for this electricity would be a new burden on electricity bills.

Section 6: Monetised and non-monetised costs and benefits of each option

6.1 Overview of approach

In order to assess the impact of the proposals, an illustrative cost-benefit analysis has been undertaken, rather than projecting a central outcome. There is uncertainty in this assessment of impacts for a number of reasons, such as, how far O&G platforms choose to electrify i.e. capacity within scope; the rate of natural decline of O&G production. Attempts have been made to mitigate some of these uncertainties by using results from the Innovation and Targeted Oil & Gas (INTOG) leasing round (See Section 7.1), and through sensitivity analysis throughout.

Stakeholders have had the opportunity to comment on the proposed amendment to the PN CfD Agreement via the Allocation Round 6 (AR6) consultation[5], or provide alternative approaches to meet similar objectives, as per question 1 in the consultation. This final stage assessment of the impact of the proposed change has considered the responses to this consultation, which supports our assessment. The response to the consultation demonstrated broad support for the proposal and relevant evidence received has been considered, noting that some respondents within the O&G sector disagreed with the proposal.

6.2 Cost-benefit analysis approach

The cost-benefit analysis quantifies the difference between impacts under the policy package and the 'do-nothing' option based on the following components:

- **Greenhouse gas impacts:** These are estimated by applying an assumed greenhouse gas intensity per MWh of generation for O&G platforms, based on estimates of power generation required by offshore facilities and associated power emissions[6]. The resulting emissions are valued using traded carbon values in line with the supplementary Green Book guidance on valuing greenhouse gas emissions[7].

Whilst not forming part of the cost-benefit analysis, the following are also considered:

[5] Considerations for future Contracts for Difference (CfD) rounds - https://www.gov.uk/government/consultations/considerations-for-future-contracts-for-difference-cfd-rounds

[6] UKCS Energy Integration Final Report Annex 1. Offshore electrification (August 2020) - https://www.nstauthority.co.uk/media/6629/ukcs_energy_integration_annex-1-offshore-electrification-final-august-2020.pdf

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

- **Support cost impacts:** These are calculated as the difference between the market prices assumed to be captured by the floating offshore wind technology and the strike price assumed to be given to winning projects. This does not form part of the cost-benefit analysis as it represents a transfer between consumers and generators, but the illustrative magnitude of support costs has been estimated to demonstrate the potential differences in costs and impact on consumers bills.

All impacts have been monetised in 2022 prices and discounted in accordance with the HM Treasury Green Book[8].

Further details of the analytical approach and key assumptions are set out in Annex A.

Section 7: Cost-benefit analysis

7.1 Innovation and Targeted Oil & Gas (INTOG) Leasing Round

The cost-benefit analysis considers the results of this leasing round (see Annex A), particularly as these results suggest that the majority of projects are not expected to be eligible to apply for a PN CfD Agreement under current CfD terms and conditions, noting that these are only initial agreements at this stage. This assumption has been based on the projected capacities presented in the INTOG leasing round results.

Our analysis has been based on projects successful in this leasing round as the Central North Sea area, where all projects will be located, has been identified as a key area for electrification due to the remaining lifetime of assets located there (NSTA (previously Oil & Gas Authority), 2020). Furthermore, power demand from other areas is expected to decline faster. This assumption does remain uncertain, therefore a range of capacity in scope has been assessed in our analysis.

7.2 Impact on greenhouse gas emissions

The O&G industry has committed to cut upstream emissions by 10% by 2025, 25% by 2027 and 50% by 2030 (against 2018 baseline), as part of the North Sea Transition Deal (NSTD) signed by the government and industry in March 2021. In the latest North Sea Transition Authority (NSTA) Emissions Monitoring Report[9], the sector is projected to meet its 2025 and 2027 targets, but further abatement via platform electrification is required to meet the 2030 target – see Figure 13 (NSTA, 2022) below:

[8] Available at: https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent (accessed March 2023)

[9] Emissions Monitoring Report 2022, North Sea Transition Authority - https://www.nstauthority.co.uk/media/8439/emr-2022-final-v2.pdf

Figure 13: Technical projections of UK upstream oil and gas GHG emissions: baseline emissions projections and abatement scenarios, 2021–2050

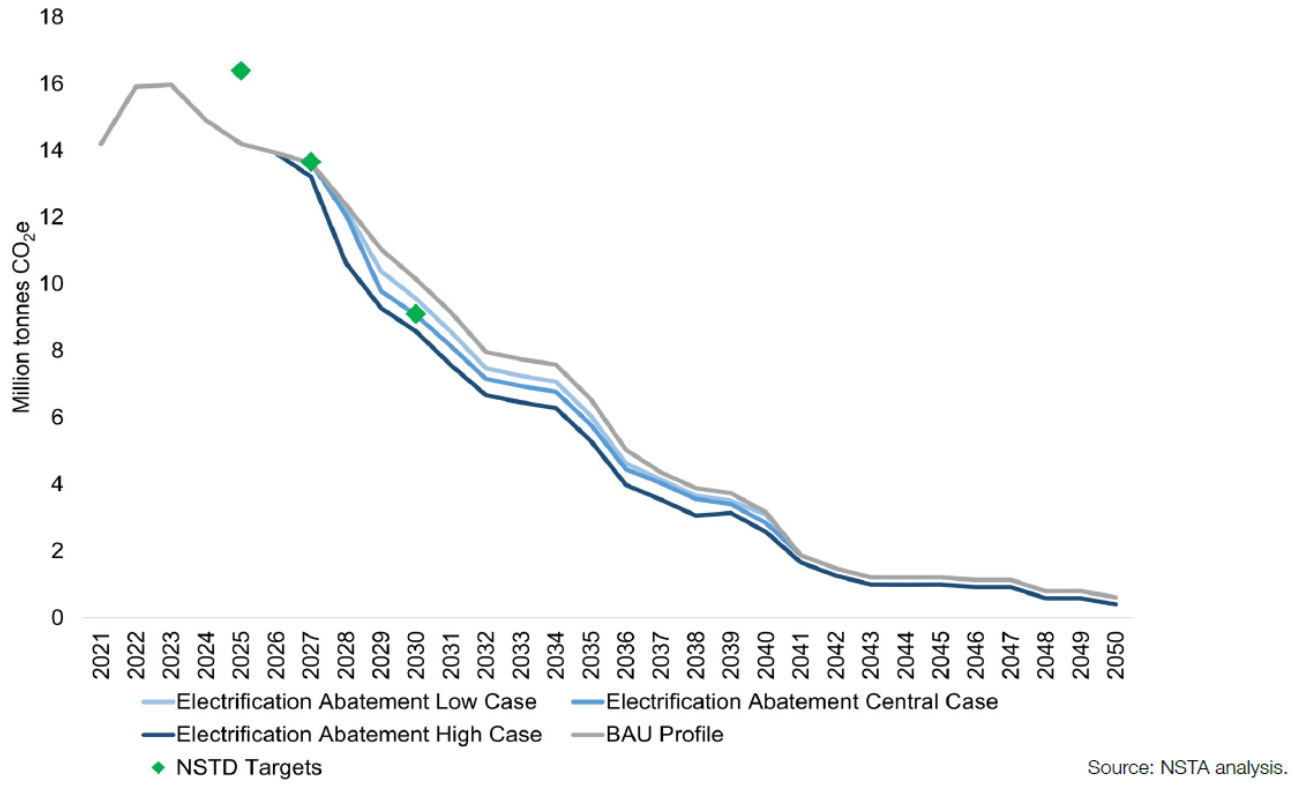


Figure 13 also shows the emissions reductions expected from the cessation of production from platforms alone. The business as usual (BAU) scenario shows a c.90% decrease in emissions during the appraisal period (2024-2045), which covers from the start of AR6 (when the policy is planned to be implemented from) until the end of AR8 support period (final allocation round we expect capacity within scope to be delivered). We have assumed that this policy will not have a negative effect on emissions reductions from cessation of production.

This proposal may impact the ability of the O&G sector to meet its emissions reduction target, which underpins the sector's NZ effort share, if some platforms decide not to pursue electrification as a result of the policy change. However, it should be noted that there are existing incentives for O&G electrification e.g. the investment allowance in the Energy Profits Levy (EPL)[10]. Although the INTOG leasing round results provide some insight into the possible use of private network arrangements for O&G platforms, we expect some projects could still be eligible to apply under current arrangements, and therefore may be impacted by the proposed changes.

We have considered a range of impacts on emissions based on the percentage of electrification not occurring. The range between 10-50% reflects the results from the INTOG leasing round, which suggests that three out of the eight 'TOG' projects could be eligible to apply for a PN CfD Agreement based on their estimated capacity. We expect these projects could be at higher risk of not progressing if the proposal goes ahead. The carbon cost is based on the respective percentage reduction in the Central Case emissions abatement projection mentioned above:

Table 1: Illustrative changes in carbon cost of the policy proposal across the appraisal period (2024-2045), present value 2024, 2022 prices, £m, rounded to the nearest £5m

PV, £m	**Percentage reduction in emissions abatement resulting from electrification, due to proposal**				
	10%	**20%**	**30%**	**40%**	**50%**
Value of reduction in greenhouse gas emissions abatement, £m	-25	-55	-80	-110	-135

Reduction in emissions abatement has been calculated from halfway through 2028 (calendar year), to align with the start date of the first delivery year considered in the analysis (2028/29).

This illustrative analysis is based on a number of uncertain assumptions and should be interpreted as only an indication of the potential impact of this proposal.

[10] The EPL includes an 80% investment allowance for qualifying expenditure on decarbonising upstream oil and gas production.

We have considered the impact on power sector emissions from this proposal, if developers choose not to go ahead with their projects and so the floating offshore wind capacity is not built at all (assuming a grid connection). Considering the INTOG leasing round results, which indicates that most projects will not be eligible to apply for a PN CfD Agreement under current arrangements, we do not expect that this proposal will impact the deployment of floating offshore wind. Furthermore, we do not consider there to be any impact on power sector emissions as a result.

7.3 Support costs

The support costs in this context are the estimated CfD payments to generators, when the wholesale electricity price captured by floating offshore wind generators falls below the strike price set in the respective allocation round. The illustrative impact on support costs shown in Table 2 has been estimated by assuming a potential range of demand for renewable power from O&G platforms (15-45 MW power draw), based on the projected capacities of projects from the latest INTOG leasing round[11]. In this analysis we have assumed that all potential future projects are most likely to have come through this round and we have specified where we expect private network arrangements could be used. The figures represent the estimated savings from not supporting this power sent directly to the O&G platforms linked to the proposed projects.

Table 2: Illustrative savings to consumers following proposed change across the appraisal period (2024-2045), 2022 prices, £m, rounded to nearest £100m (undiscounted)

£m	**MW**		
	15	**30**	**45**
Illustrative savings to consumers over the 15-year CfD lifetime (AR7 and AR8)	-100	-300	-400

7.4 Impact on consumer bills

The CfD scheme is funded by a levy on suppliers, where the difference between the wholesale price of electricity and strike price is paid through consumer electricity bills. This represents a transfer between generators and consumers. Therefore, the support costs estimated in Table 2 represent the potential savings to consumers as a result of the policy proposal.

7.5 Impact on price of electricity charged to O&G platforms

This is likely to increase under the proposed change, for platforms which could have benefited from the current private network arrangements. Under current private wire supply terms, the generator would be able to receive CfD payments for electricity supplied to the O&G platform which could enable the platform to buy electricity within the region of the GB national wholesale electricity price. Where the generator is unable to receive CfD payments for electricity supplied to the O&G platform, it is likely that the generator would seek a price from the platform that is equal to or greater than the strike price, partly given higher lifetime costs of electricity production associated with floating offshore wind, as an emerging technology.

7.6 Impact on technology cost of floating offshore wind

Floating offshore wind is an emerging technology with significant cost reduction potential over time, driven partly by technology costs reductions resulting from learning as deployment increases. The projected c.5GW capacity that the Targeted Oil and Gas (TOG) element of the INTOG leasing round could deliver is likely to contribute to technology cost reductions, but the vast majority of this capacity is ineligible to apply for a PN CfD Agreement. Therefore, we consider the proposed change would not have a significant impact on the ability of the floating offshore wind sector to achieve the necessary cost savings for mass deployment.

Section 8: Limitations, risks and uncertainties

The key areas of uncertainty identified are:

- **Use of private network arrangements in the counterfactual**: Although the INTOG leasing round results do provide some insight into how many generators could be eligible for a PN CfD Agreement, there is still some uncertainty regarding the potential take-up if the current private network arrangements remained

[11] Results available here: https://www.crownestatescotland.com/news/intog-13-projects-selected-to-support-green-innovation-and-help-decarbonise-north-sea

unchanged. We have estimated a range of renewable power capacity that may be eligible, to estimate the electricity supplied via private wire and associated CfD payments.

- **Overall impact on O&G platform electrification**: The sector is expected to reduce production significantly up to early 2040s as O&G platforms reach current planned production cessation dates. However, there is uncertainty about the impact of this proposal on electrification and decommissioning, or if the proposed change will materially impact decisions to electrify at all. If the expected price of electricity to the O&G platform increases significantly, compared to its current fuel cost, platforms may decide not to pursue electrification, or decommission early which could potentially put some level of production at risk.

If the take-up of PN agreements is higher than we estimated in the counterfactual, then the potential savings to consumers could be greater, but the risk to electrification of the O&G sector will also increase if developers decide to not proceed with their projects for platform electrification without private wire CfD support.

Section 9: Impact on small and micro businesses

There is a possibility that platform decommissioning dates could be brought forward as a result of this proposal, if O&G platforms consider the cost of electrification to be too high. There could be an indirect impact on secondary small businesses, however, it is not expected that the proposed PN CfD change if implemented would have a disproportionate impact on small businesses.

O&G facilities are owned by large multinational companies, and the INTOG leasing round results suggests that the successful applicants are large businesses as well.

Section 10: A summary of the potential trade implications of measure

We do not expect there will be any trade implications of the proposed change to the PN CfD Agreement since the change would not have ramifications for auction design or generator participation.

Section 11: Summary

The government's final position is to implement the proposal to make renewable generators that directly supply offshore O&G facilities ineligible to apply for the PN CfD Agreement. This is to prevent consumers from subsidising this electricity, which would represent a new burden on household energy bills. The cost of this proposal depends on the final decision of O&G platforms to pursue electrification following the implementation of this policy. There could be a risk of a reduction in emissions abatement (additional to natural decline of the sector), if some platforms decide not to electrify, but would have done so if the CfD private network arrangements remained unchanged. However, this would potentially be contrary to the offshore O&G sector's (non-binding) commitments in the North Sea Transition Deal. Even with the proposed changes, the O&G industry may choose to continue with electrification, making use of the investment allowance in the EPL, or alternative emissions reductions could occur.

Section 12: Monitoring and Evaluation

The monitoring and evaluation for this contract change will form part of a planned wider review of CfD Monitoring & Evaluation. The government continuously reviews and adapts the CfD scheme to ensure it remains appropriate whilst considering factors such as security of supply, carbon targets and budgets, and cost to consumers, as required by the Energy Act 2013.

Section 13: Public Sector Equality Duty

The CfD aims to maintain value-for-money to help reduce impact on consumer energy bills. An increase to consumer energy bills would disproportionately impact disadvantaged households (for example, disabled individuals and older individuals). The consideration of Private Wire CfDs aims to reduce the risk of increased consumer bills, and the net effect of the proposal is to avoid higher consumer bills across all groups to a similar degree compared to the counterfactual.

This proposal could impact on the electrification of the O&G sector, and therefore lead to a reduction in emissions abatement from this sector. If this were to occur, it is expected that the direct effect of this will impact all groups to a similar degree compared to the counterfactual. However, the impact of increasing emissions in general 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[12].

Therefore, we consider this proposal will have low impacts on groups with protected characteristics. To fulfil the requirements of the Public Sector Equality Duty as set out in section 149 of the Equality Act 2010, equality analysis has been undertaken to provide more explanation on our position.

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

Annex A: Key assumptions for support costs

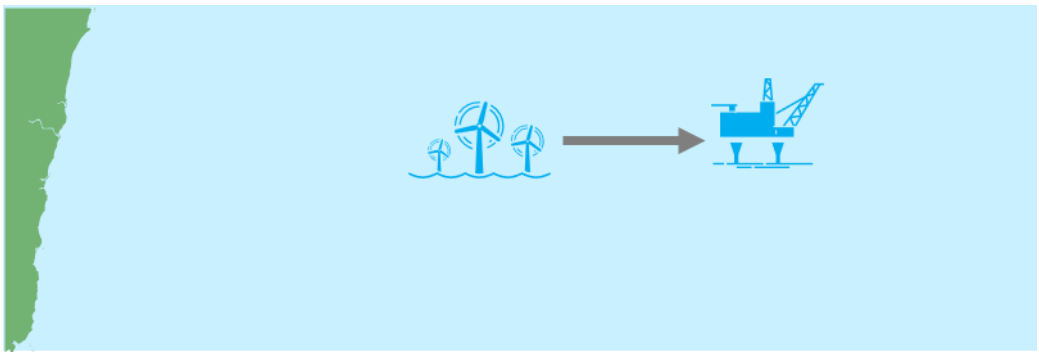
- **Capacity**: In March 2023, Crown Estate Scotland announced the results of the INTOG leasing round, which was designed to attract investment in innovative offshore wind projects (IN) and to directly supply offshore oil and gas platforms (TOG). Thirteen projects have been offered Exclusivity Agreements, eight of which are for TOG, with a proposed capacity of up to 499MW for IN and 5GW for TOG[13]. As mentioned in Section 1, a key condition of the Private Network (PN) CfD Agreement is that the generator is exempt from the requirement to hold a licence for the generation of electricity pursuant to the Electricity (Class Exemptions from the Requirement for a License) Order 2001. Given the likely applicability of the four generation class exemptions available under the 2001 Order, this effectively requires the generator to provide less than 50MW of power from a generating station with a declared net capacity of up to 100MW (ignoring power supplied to consumers on the same site). Five out of the eight TOG projects are expected to have a declared net capacity greater than 100MW. Therefore, under the scheme's existing private network arrangements, these projects would likely not be eligible to apply for a PN CfD Agreement. For context, the total capacity between these five projects is 4.9GW (c.99% of up to 5GW TOG capacity). The three remaining projects (total capacity of c.35MW) may be eligible to apply for a PN CfD Agreement based on their proposed capacities, although they would still need to fulfil the other conditions of the Agreement. We have evaluated projects with a declared net capacity of over 100MW to not be eligible for a PN CfD Agreement and therefore would not be impacted by the proposals.
- **Technology:** Crown Estate Scotland have confirmed that all 13 INTOG projects are based on floating offshore wind technology[14].
- **Strike price:** The analysis assumes the latest Allocation Round 5 Administrative Strike Price (ASP) – a set price ceiling at auction for each individual technology – as the best estimate of the strike price for Allocation Round 7/8 for floating offshore wind (£116/MWh, 2012 prices)[15]. Given the nascency of the technology, it is uncertain how far technology costs (and therefore strike prices) are expected to decrease throughout the next decade.
- **Delivery years:** This proposed change would take effect from AR6 (Spring 2024), but it is likely that most electrification projects will not be ready to bid into the CfD auction until AR7. Furthermore, latest estimates from the National Grid suggest the queue for generators looking for a connection to the electricity transmission system in England and Wales currently extends into the next decade[16]. However, proposed changes to queue management could enable projects further back in the queue to proceed ahead of projects which have stalled. Considering this, we assume projects are most likely to bid in at AR7 (estimated delivery years - 2028/29 and 2029/30) and AR8 (estimated 2029/30 and 2030/31).

Annex B: Platform electrification approaches

There are three main approaches to electrification which have been identified:

The private network arrangement is applicable to the following **Approach 1**, where the electrification projects would be 'islanded'. Power is supplied directly from the wind farm to the O&G hub or platform, and there is no connection to the grid.

Figure 1a. Approach 1 – Offshore microgrid:



It could also be applicable to **Approach 2,** where the O&G platform receives direct supply from the offshore wind farm, which also has a grid connection to onshore. If the generator is eligible to apply for a PN CfD Agreement,

[13] INTOG leasing round results available here: https://www.crownestatescotland.com/news/intog-13-projects-selected-to-support-green-innovation-and-help-decarbonise-north-sea

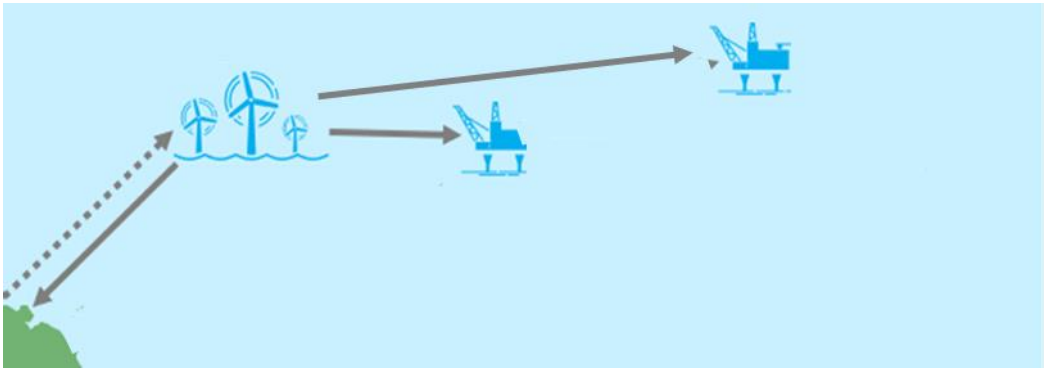
[14] Briefing available here: https://www.crownestatescotland.com/resources/documents/briefing-innovation-and-targeted-oil-gas-intog-leasing

[15] Contracts for Difference (CfD) Allocation Round 5: core parameters: https://www.gov.uk/government/publications/contracts-for-difference-cfd-allocation-round-5-core-parameters

[16] Queue management: the next step in accelerating grid connections, National Grid, November 2022 - https://www.nationalgrid.com/electricity-transmission/queue-management-next-step-accelerating-grid-connections

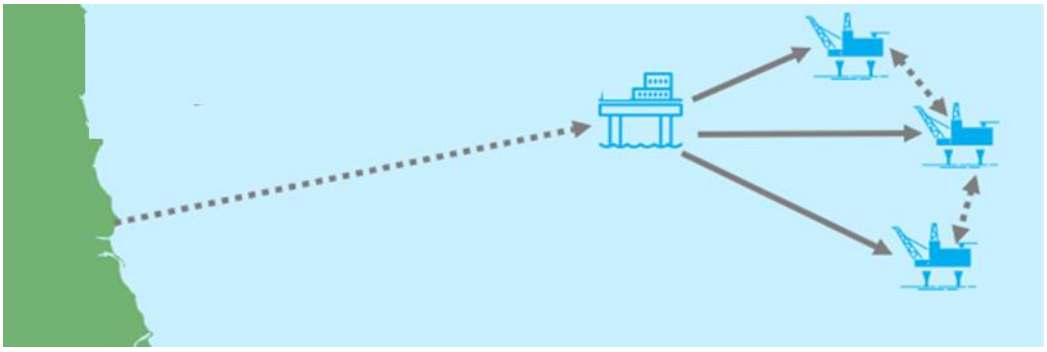
then the generator could receive CfD payments for electricity supplied to the national electricity grid or via the private wire to the O&G platform (assuming it is successful in a CfD auction).

Figure 1b. Approach 2 – Power from windfarm:



Approach 3 is a direct connection to the onshore grid, and therefore does not involve any private wire or cable connection to a wind farm.:

Figure 1c. Approach 3 – Power from shore



We assume that most generators would opt for Approach 2 as the grid connection would ensure a future revenue stream after the O&G platform decommissions. However, we consider it more likely that the electrification projects based on Approach 1 would not go ahead if CfD support is removed. The platform is likely to face a higher cost of electricity, which could increase the risk that electrification becomes too costly, and there is no other customer for the microgrid or turbine.