

The Electricity (Class Exemptions from the Requirement for a Licence) (Amendment) Order 2024

(132kV array transmission licence class exemption)

Lead department	Department for Energy Security & Net Zero
Summary of proposal	The Government propose a class exemption to enable offshore wind farms to use high voltage array systems where it is optimal to do so.
Submission type	Impact assessment (IA) – 14 March 2024
Legislation type	Secondary legislation
Implementation date	2024
Policy stage	Final
RPC reference	RPC-DESNZ-5341(1)
Opinion type	Formal
Date of issue	20 May 2024

RPC opinion

Rating¹	RPC opinion
Fit for purpose	The Department has correctly monetised the direct impacts on business in the EANDCB figure, against a clear counterfactual, justifying its use of data and extended appraisal period. The proposal offers potential net benefits to business, including small businesses; and the SaMBA is sufficient.

Business impact target assessment

	Department assessment	RPC validated
Classification	Qualifying provision	Qualifying regulatory provision (OUT)
Equivalent annual net direct cost to business (EANDCB)	-£23.8 million	-£23.8 million (2019 prices, 2020 pv)
Business impact target (BIT) score	-£119.0 million	-£119.0 million
Business net present value	£587.7 million	
Overall net present value	£587.7 million	

¹ The RPC opinion rating is based only on the robustness of the EANDCB and quality of the SaMBA, as set out in the [Better Regulation Framework](#). RPC ratings are fit for purpose or not fit for purpose.

RPC summary

Category	Quality²	RPC comments
EANDCB	Green	The IA establishes a clear counterfactual but could benefit from more evidence to demonstrate the disincentives to invest in the counterfactual scenario. The IA scales up Carbon Trust lifetime benefit estimates by the assumed amount of annual offshore wind deployment and the number of projects, but could benefit from providing some further explanation of the assumptions and how the Carbon Trust benefits were estimated. As the monetised impacts are the same for Options 1 and 2, the IA could provide more detail on Option 2 to support the selection of the preferred option - the class exemption (Option 1).
Small and micro business assessment (SaMBA)	Green	The proposal is deregulatory (and permissive) in nature and benefits all businesses, including small businesses. It is reasonable, therefore, to assume that there are no disproportionate burdens faced by small or micro businesses (SMBs), or need for exemption or mitigation. Furthermore, the IA indicates that most of the businesses on which the order would have an impact, are unlikely to be SMBs, although the IA would benefit from presenting further data to support this. The IA could consider the impact on medium-sized businesses.
Rationale and options	Satisfactory	The IA outlines the problem under consideration and how the proposal will address this by issuing a class exemption for the requirement to hold a transmission licence. The IA considers two options against a do-nothing option. The IA does not consider a non-regulatory option. As the proposal is deregulatory, and the issue being addressed is a regulatory inflexibility, this is considered reasonable, but the IA could consider any further options.
Cost-benefit analysis	Weak	The IA would benefit from a clearer assessment of the different impacts between options 1 and 2. In particular, it could develop further the difference in administrative costs and justify why the number of

² The RPC quality ratings are used to indicate the quality and robustness of the evidence used to support different analytical areas. The definitions of the RPC quality ratings can be accessed [here](#).

projects adopting 132kV are assumed to be the same.

Wider impacts	Satisfactory	The IA provides a high-level description of the wider impacts associated with the proposal, including potential competition and environmental impacts. The IA could benefit from considering further environmental and innovation impacts of the proposal, such as how it would lower the costs of meeting net zero through reducing the overall cost of offshore wind generation.
Monitoring and evaluation plan	Satisfactory	The IA commits to completing a post-implementation review (PIR) within five years of the class exemption coming into effect and considers how unintended consequences from the policy could be identified. The IA also considers an indicator that could be used and states the data sources it will use to find, and obtain, this metric. In the expected absence of benefit data, the IA could also consider other alternative research questions for the PIR and the data it will use to answer those, including any qualitative sources.

Response to initial review

As originally submitted, the IA was not fit for purpose for the following reasons:

1. The counterfactual scenario was not justified sufficiently in the IA. The Department assessed the business impacts of the proposal against a counterfactual scenario where high voltage array systems were not included, but conversely stated in the IA that exemptions are currently issued through secondary legislation. This implies that there is an existing case-by-case process and, therefore, savings from the preferred option would be the incremental administrative savings for these projects.
2. The IA's use of an extended 51-year appraisal period appeared unjustified and required further explanation.
3. The IA relied heavily on estimates from the Carbon Trust to estimate the benefits and should provide further explanation of the calculations involved in retrieving those estimates, as well as further discussion on the quality of the data source; and should have considered other data sources.

A number of changes to the IA have been made to address the above points:

1. The IA now clarifies the counterfactual and confirms that case-by-case exemptions to use 132kV array systems are not available in the counterfactual scenario, stating that there is no policy to issue these exemptions as a matter of routine. Case-by-case exemptions are now

included in the IA as a separate policy option (Option 2) and the IA states that each exemption would require a separate policy decision.

2. The Department has explained the approach to the 51-year appraisal period more clearly, stating that the benefit values in the IA calculate the net present values for projects deployed over the years 2030-2050 capturing 25-year benefits through to 2074. This extended appraisal period is considered appropriate to reflect the long life of typical wind farm projects.
3. The IA now includes some discussion on the robustness of the Carbon Trust data source.

Summary of proposal

Array cables, which connect wind turbines to offshore platforms, currently typically operate at 33kV or 66kV. Electricity conveyed in offshore systems rated 132kV, and above, are classed as offshore transmission under the Energy Act and this voltage falls under the offshore transmission regime, which requires system to be divested to an independent operator. High-voltage array systems become more efficient as offshore wind farms increase in size, and use larger turbines. The next step-up in array system voltage is expected to be 132kV following the offshore wind sector transitioning from 33kV to 66kV systems being the norm over the past decade. Without intervention, current regulations are expected to act as an unintended barrier to the uptake and realisation of benefits associated with the next generation of array systems.

The Department considers three options within the IA:

- Option 0: Do nothing – high voltage array systems would not be built without intervention
- Option 1: Preferred option - class exemption for 132kV+ array systems: a single broad exemption from the requirement to hold a transmission licence for operating 132kV+ array systems could be issued to apply to all offshore wind farms meeting the relevant criteria.
- Option 2: An alternative implementation of Option 1, where individual exemptions would be issued to projects on a case-by-case basis. Each exemption would require a separate policy decision.

Under the central scenario, the IA has modelled the preferred option of the proposal to have an EANDCB of -£23.8million, with a business net present value of £587.7million over 51 years. This largely consists of lifetime cost savings associated with using high voltage array systems.

EANDCB

The counterfactual

The IA states that in the counterfactual scenario - existing primary legislation (The Energy Act) disincentivises the use of high-voltage technology by requiring a

transmission licence for high-voltage electricity and prohibiting persons from holding both a transmission licence and a generation licence.

The IA has clarified that case-by-case exemptions to use 132kV array systems are not issued in the counterfactual scenario, stating that there is presently no legislative or regulatory means to issue case-by-case exemptions. These are now included as a separate policy option (Option 2).

Assessment of business impacts

The Department identifies that the main direct impacts of the proposal are lifetime cost savings for offshore wind farms, minus a small familiarisation cost. This is expected to produce a net benefit for businesses of nearly £24 million per year.

The lifetime cost savings for wind farms using 132kV array systems are comprised of upfront capital cost savings due to a reduction in the number of cable strings, and lost and unavailability savings due to a reduction in the probability of failure when using 132kV systems. These benefits have been estimated by the Carbon Trust to be between £32 million and £50 million per farm, relative to the current standard of 66kV array systems and have been scaled up in the IA by applying assumptions on the expected amount of annual offshore wind deployment and the number of projects using 132kV. The Department briefly explains these assumptions, but could benefit from providing some further explanation on how the number of projects using 132kV systems was estimated in the IA, clarifying why it models 28 offshore wind farms with 132kV being built between 2030 and 2050, and whether this number accounts for the typical 25-year lifetime of windfarms (and their inevitable replacement of windfarms after this ends).

Selection of preferred option

As the monetised impacts are the same for Options 1 and 2, the IA would benefit from providing more detail, and potentially monetising the additional (currently non-monetised) costs that are expected in Option 2. For instance, the IA could monetise the administrative savings accrued in the preferred option (although likely to be very small) to support the selection of the preferred option (Option 1). This is explained further below in the cost-benefit section.

Classification of business impacts

The IA has classified all monetised costs and benefits as direct impacts on business. This is in line with RPC guidance for permissive legislation. As the legislation is permissive (by not explicitly requiring businesses to use high voltage array systems), the absence of the legislation is the only thing to prevent businesses from using 132kV array systems, and the impacts are considered direct.

Evidence and data

The Department relies heavily on estimates from the Carbon Trust to estimate the benefits. The IA provides some discussion on the quality of the data source, stating that it is robust as many different wind farm configurations were tested and the

Carbon Trust collaborated with developers and operators who owned a large proportion of the UK's wind farm capacity. However, the IA could provide further explanation of the calculations involved in retrieving those estimates, as well as consideration of other data sources. Equally, the IA could benefit from utilising (or provide justification against utilising) information provided directly by industry during consultation in the cost-benefit analysis and the EANDCB.

Appraisal period

The Department uses a 51-year appraisal period, explaining that this ensures the policy impacts are captured for the 25-year life of wind farm projects deployed between 2030 (the first year that high voltage array projects are expected to be deployed) and 2050. The IA explains that the appraisal period begins in 2024 to include the period immediately following commencement, where legal clarity begins supporting the development of the first high voltage array projects and there are small familiarisation costs, and ends in 2074 because this is the assumed end of operational life of projects that are deployed in 2050. The benefit values in the IA calculate the net present values for projects deployed in the years 2030-2050, expressed in the year of deployment.

This extended appraisal period is considered appropriate to reflect the long life of typical wind farm projects. However, the IA would still benefit from explaining why the appraisal period does not capture projects deployed after 2050, confirming whether this is because by 2050 all projects deployed in 2024 will have reached the end of their 25-year operational life or because 2050 is a key date for offshore wind policies.

SaMBA

The IA indicates that most of the businesses on which the proposals are likely to have an impact are not likely to be SMBs, as the operations of projects in the early stages of development are generally owned by consortia of large businesses, and operational wind farms projects would not be small businesses due to the value of their assets. However, the IA would benefit from presenting some data on the size of businesses in the industry to support and evidence this argument.

The IA states that it is not appropriate to exclude any potential SMBs because the policy is deregulatory (and is permissive) in nature, and this would create regulatory uncertainty and prevent small businesses from realising benefits. The IA does not consider whether there could be disproportionate burdens faced by SMBs, but it is reasonable to assume that there are not, due to the deregulatory and beneficial nature of the policy and the small proportion of SMBs on which the proposals are likely to have an impact, as detailed above. However, the IA could clarify this and could still benefit from discussing any potential mitigations for the impact on SMBs, such as providing guidance to assist SMBs.

Medium-sized business considerations

In addition to the existing SaMBA, the IA should also assess the potential impact of the proposal on medium-sized businesses (with 50-499 employees).

Rationale and options

Rationale

The IA outlines the problem under consideration, explaining how electricity conveyed in offshore systems rated 132kV or above are classed as offshore transmissions and require a transmission licence, acting as an unintended barrier to the uptake of benefits realised with the next generation of 132kV array systems. The proposal will address this by issuing a class exemption for the requirement to hold a transmission licence. The IA could benefit from further evidence of this disincentive. This would support the rationale, confirming that wind farms do not just choose to divest their array cable assets in the counterfactual scenario as they become classed as offshore transmission (which would alter the overall impact of the proposal). Furthermore, the IA states that consultation found broad agreement with the potential for significant reductions in array system costs and could benefit from using and providing further detail on these responses to support the rationale for intervention.

The IA states that licencing enables activities in the electricity sector to be effectively regulated and certain obligations are placed on licensees to maintain the security and quality of electricity supply. As the proposal is a deregulatory measure to exempt the requirement for a transmission licence for 132kV array systems, the IA would benefit from providing more policy context on this point, and from clarifying how the proposal does not subsequently pose a risk to the security and quality of electricity supply.

Options

The IA considers two options against a do-nothing option, including an alternative implementation of Option 1 (preferred option) where individual exemptions would be issued to projects on a case-by-case basis. The IA does not consider a non-regulatory option. As the proposal is deregulatory and the issue being addressed is a regulatory inflexibility this is considered reasonable, but the IA could benefit from justifying this argument.

Cost-benefit analysis

Methodology

The IA states the net present value is £600 million over the 51-year appraisal period. As referenced in the EANDCB section, the IA would benefit from providing some further detail on the calculations involved in retrieving key project level estimates from the Carbon Trust.

The IA should also provide a more-detailed cost-benefit analysis for Option 2, the option which covers the impact from implementing individual case-by-case exemptions for 132kV array systems. As the monetised costs are virtually the same for Options 1 and 2 in the IA (excluding familiarisation costs), a more-detailed cost-benefit analysis would help to justify further the selection of the preferred option (Option 1).

For instance, the IA could develop further the difference in administrative costs between Option 1 and Option 2 and shown more clearly that Option 2 has a higher administrative cost. In order to do this, the Department could utilise administrative data from other offshore transmission licence exemptions that have already been granted.

Furthermore, the number of projects adopting 132kV in Option 2 (with case-by-case exemptions) is equal to the number in Option 1 (the preferred option with a class exemption), which also drives the equal monetised costs and benefits between both options. The IA should, therefore, explain further the reasoning behind the estimated number of case-by-case exemptions in Option 2 and should provide further evidence to justify this assumption. In particular, the IA should justify why Option 2 is expected to result in the same number of projects adopting high voltage array systems as Option 1, when there is an additional need to apply for individual exemptions under Option 2, which could disincentivise some projects.

The IA would also benefit from justifying why familiarisation costs have not been included for Option 2 but have been included for Option 1. There is no evidence in the IA to suggest that wind projects and transmission licence holders would not have to familiarise themselves about individual exemptions under Option 2.

Non-monetised benefits

The IA states that regulatory clarity is a non-monetised benefit for Option 1. As the benefits for each option should be compared against the counterfactual scenario (even when non-monetised), and there is no evidence in the IA of regulatory confusion in the counterfactual scenario, the IA would benefit from clarifying this benefit. Option 1 has a reduced regulatory burden compared to Option 2, but this could be set out separately with a clear comparison, and each option should still be individually compared to Option 0 (the counterfactual option) before being compared against each other.

Risks and uncertainty

The IA considers some key risks to analysis (such as the key assumptions in the lifetime saving estimates, and possible increased costs of other wind farm components when using 132kV arrays) but could also consider the risk of further increased voltage (higher than 132kV) becoming the norm in the future, a potential increase in the number of future wind farms, as well as the increased cost of wind farms compared to other sources of energy due to their replacement costs, and consider how the analysis and the proposal could mitigate against this. This is particularly important due to the extended appraisal period.

Wider impacts

The IA provides a high-level description of the wider impacts associated with the proposal, including potential innovation, competition and environmental impacts.

The IA states that innovation impacts are expected, as removing the barriers for the use of 132kV array systems is likely to support commercial development of the technology by providing more certainty to its supply chain. An overarching innovation impact from the proposal is also referenced throughout the IA, as the main benefit of the proposal is expected to be reduced lifetime cost savings for offshore wind farms using 132kV array systems. However, the IA could benefit from summarising this impact in the wider impacts section. As the proposal will enable the use of high voltage array systems, changing business practices in the offshore wind industry and reducing the cost of offshore wind generation, offshore wind farms will be able to increase in size and use larger turbines, increasing their growth, value and productivity. The IA could benefit from discussing these efficiencies further.

The IA states there will be a small environmental benefit from the proposal, as enabling the use of high voltage array systems reduces the disruption on seabed habitats and marine flora and fauna. The IA would also benefit from considering some further overall environmental impacts from the proposal. For instance, although the proposal may lower the costs of meeting net zero through reducing the overall cost of offshore wind generation, there could be an opposing impact on other forms of energy production, where investment may be driven out due to the fact that wind energy is subsidised through energy cost levies and tax transfers. The IA could benefit from discussing this impact.

The IA also references potential pass-down impacts to consumers and households through lower energy bills. The Department states that this rate of pass-through is uncertain but could benefit from indicating this potential impact using previous examples of how energy efficiency is passed down to have an impact on consumers' energy bills, perhaps in the form of case study illustration.

Monitoring and evaluation plan

The IA commits to completing a PIR within five years of the class exemption coming into effect and considers how unintended consequences from the policy could be identified. The IA also considers an indicator that could be used to evaluate the success of the policy; the uptake of high voltage arrays in projects going through planning and states that it will use data from the Crown Estate and the Crown Estate Scotland, as well as the Planning Inspectorate to find and obtain this metric. The IA states that the PIR will verify whether projects have benefitted from the exemption by identifying the proportion of projects that use high voltage arrays, but that the actual monetised benefits of the policy will not be reviewed, as it is unlikely that there will be projects that will be operational. However, the IA could benefit from detailing the planned methodology it might use to gather this information at a later date. In the absence of this data on benefits, the IA could also consider other alternative research questions that it could answer in the PIR (for example, to understand the potential competition and administrative impacts) and the data it will use to answer those, including any qualitative data sources.

Regulatory Policy Committee

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