

| | |
|---|---|
| Title: Draft Renewables Obligation Order 2011 – Offshore Wind Phasing Lead department or agency: DECC Other departments or agencies: Ofgem | Impact Assessment (IA) |
| | IA No: 10D/1021 |
| | Date: 17/11/2010 |
| | Stage: Development/Options |
| | Source of intervention: Domestic |
| | Type of measure: Secondary legislation |
| Contact for enquiries: Birgit Wosnitza | |

Summary: Intervention and Options

| | |
|--|-----------------------------|
| What is the problem under consideration? Why is government intervention necessary? Offshore windfarms have long construction times and currently developers of offshore wind turbines need to accredit their entire capacity in one go, which implies less than 20 years of support for those turbines being built later. This impacts on the developer’s decision to build offshore windfarms due to less certainty of financial support. Government intervention with the appropriate form of Renewables Obligation support addresses the significant market failures facing offshore wind generation, such as information failures and positive externalities. An appropriate process to accredit new offshore wind turbines, which commission their capacity not in one go, but over a number of years, give developers more certain financial support. | |
| What are the policy objectives and the intended effects? <ul style="list-style-type: none"> To ensure deployment of large multi-phase offshore wind farms to increase renewable wind capacity. | |
| What policy options have been considered? Please justify preferred option (further details in Evidence Base) <ul style="list-style-type: none"> Option 1: “Do nothing” – Allowing a single RO accreditation date (from which support can be received for renewable generation on the station) for multi-phase offshore wind farms Option 2: Allowing tranches of capacity to be registered at different times and thus receive 20 years of support for all phases of capacity, which might allow some more of these projects to go ahead. <p>Our preferred option is Option 2 as compared to “do nothing” as it provides quicker support for developers, increases deployment of renewable wind electricity; will bring further innovation benefits; further diversify the energy mix; further reduce dependence on fossil fuels; and will bring further business and employment opportunities.</p> | |
| When will the policy be reviewed to establish its impact and the extent to which the policy objectives have been achieved? | It will be reviewed 11/2012 |
| Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review? | Yes |

SELECT SIGNATORY Sign-off For consultation stage Impact Assessments:

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 SELECT SIGNATORY:..... Date:.....

Description: IMPACTS OF ALLOWING PHASING OF OFFSHORE WIND ACCREDITATION

| Price Base Year | PV Base Year | Time Period Years | Net Benefit (Present Value (PV)) (£m) | | |
|-----------------|--------------|-------------------|---------------------------------------|----------------|-----------------------------|
| | | | Low: Optional | High: Optional | Best Estimate: -310 to -630 |

| COSTS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---------------|---|--|----------------------------|
| Low | n/a | n/a | n/a |
| High | n/a | n/a | n/a |
| Best Estimate | n/a | 17-34 | 310-630 |

Description and scale of key monetised costs by ‘main affected groups’

The costs are the net resource cost of additional offshore wind generating capacity, i.e. its total generating costs over and above the costs of the generating capacity it is assumed to displace (a combination of small biomass and onshore wind generation). If a plant brings on the same offshore wind generating capacity even without the phased ROC support, there would be a deadweight RO subsidy cost to consumers.

Other key non-monetised costs by ‘main affected groups’

Non-monetised costs include impacts on balancing costs and on onshore transmission and distribution costs.

| BENEFITS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---------------|---|--|-------------------------------|
| Low | n/a | n/a | n/a |
| High | n/a | n/a | n/a |
| Best Estimate | n/a | n/a | n/a |

Description and scale of key monetised benefits by ‘main affected groups’

Other key non-monetised benefits by ‘main affected groups’

Additional benefits could include increasing the chances of hitting the 2020 renewables target; innovation benefits; diversifying the energy mix; reducing dependence on fossil fuels; and business and employment opportunities in developing and deploying renewable energy technologies. Offshore wind plays a substantial role in reaching the 2020 renewables target under all plausible scenarios. This policy will encourage the offshore wind deployment that is necessary to reach the target.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5%

The key assumptions are that allowing the phasing of offshore wind generation (compared to the do nothing option where it is not allowed) will allow the deployment of a small amount of extra offshore wind plant; and that this additional offshore wind plant will displace generation from small biomass and onshore wind. There is also uncertainty surrounding technology costs of offshore wind, and other electricity generation technologies.

| | | | | |
|-----------------------------------|-------------|-------------------------------------|------|--------------------|
| Impact on admin burden (AB) (£m): | | Impact on policy cost savings (£m): | | In scope Yes/No |
| New AB: | AB savings: | Policy cost savings: | Net: | |

Enforcement, Implementation and Wider Impacts

| | | | | | |
|---|----------------------|-----------------------|-------------------------|----------------------|---------------------|
| What is the geographic coverage of the policy/option? | England and Wales | | | | |
| From what date will the policy be implemented? | 01/04/2011 | | | | |
| Which organisation(s) will enforce the policy? | n/a | | | | |
| What is the annual change in enforcement cost (£m)? | n/a | | | | |
| Does enforcement comply with Hampton principles? | Yes | | | | |
| Does implementation go beyond minimum EU requirements? | n/a | | | | |
| What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent) | Traded: 0 | | Non-traded: 0 | | |
| Does the proposal have an impact on competition? | No | | | | |
| What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable? | Costs: n/a | | Benefits: n/a | | |
| Annual cost (£m) per organisation (excl. Transition) (Constant Price) | Micro n/a | < 20 n/a | Small n/a | Medium n/a | Large n/a |
| Are any of these organisations exempt? | No | No | No | No | No |

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

| Does your policy option/proposal have an impact on...? | Impact | Page ref within IA |
|---|--------|--------------------|
| Statutory equality duties ¹ Statutory Equality Duties Impact Test guidance | No | |
| Economic impacts | | |
| Competition Competition Assessment Impact Test guidance | No | |
| Small firms Small Firms Impact Test guidance | No | |
| Environmental impacts | | |
| Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance | Yes | |
| Wider environmental issues Wider Environmental Issues Impact Test guidance | Yes | |
| Social impacts | | |
| Health and well-being Health and Well-being Impact Test guidance | No | |
| Human rights Human Rights Impact Test guidance | No | |
| Justice system Justice Impact Test guidance | Yes | |
| Rural proofing Rural Proofing Impact Test guidance | No | |
| Sustainable development Sustainable Development Impact Test guidance | No | |

¹ Race, disability and gender Impact assessments are statutory requirements for relevant policies. Equality statutory requirements will be expanded 2011, once the Equality Bill comes into force. Statutory equality duties part of the Equality Bill apply to GB only. The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

References

Include the links to relevant legislation and publications, such as public impact assessment of earlier stages (e.g. Consultation, Final, Enactment).

| No. | Legislation or publication |
|-----|--|
| 1 | Renewables Obligation Order 2011 consultation document, available at: http://www.decc.gov.uk/en/content/cms/consultations |
| 2 | Impact Assessment on biomass sustainability, available at: http://www.decc.gov.uk/en/content/cms/consultations |
| 3 | Impact Assessment accompanying Government Response to consultation on Renewables Obligation Order 2010, available at: http://www.decc.gov.uk/en/content/cms/consultations/elec_financial/elec_financial.aspx |
| 4 | Article 15 of the Renewable Energy Directive 2009/28/EC, available at: http://register.consilium.europa.eu/pdf/en/08/st03/st03736.en08.pdf |

+ Add another row

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

| | Y ₀ | Y ₁ | Y ₂ | Y ₃ | Y ₄ | Y ₅ | Y ₆ | Y ₇ | Y ₈ | Y ₉ |
|---------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Transition costs | | | | | | | | | | |
| Annual recurring cost | | | | | | | | | | |
| Total annual costs | | | | | | | | | | |
| Transition benefits | | | | | | | | | | |
| Annual recurring benefits | | | | | | | | | | |
| Total annual benefits | | | | | | | | | | |

* For non-monetised benefits please see summary pages and main evidence base section



Microsoft Office
Excel Worksheet

Evidence Base (for summary sheets)

Impact Assessment accompanying Government Response to the Statutory Consultation on Renewables Obligation Order 2011

Strategic Overview

The EU Renewables Directive commits the EU to meet 20% of its energy needs from renewable sources by 2020, with the UK's individual target at 15%. In order to meet this, Government needs to financially support large-scale renewable electricity technologies, as current costs are higher than their conventional alternatives and deployment would not occur in the timescales required. Renewable technologies are also needed as part of the global effort to reduce emissions – the need for urgency and the risk of higher damage costs in the future underpin the need for action now. In the electricity sector new technologies can struggle to compete with conventional technologies and policies to support early stage development and bring costs down longer term is critical. The cost of deploying new technologies typically falls as volumes increase, supply chains are established and commitments to further expansion rise.

The market on its own will not deliver the required development and deployment of renewable technologies to achieve the UK's carbon reduction targets. This is because the carbon price is not yet high enough or certain enough to support these higher cost technologies, and there are market failures such as positive externalities from innovation, asymmetric information and uncertainty, and increasing returns to scale in the power sector.

This Impact Assessment assesses changes to the RO that address the offshore wind phasing aspect of the general case for intervention for the RO.

As it stands, the Renewables Obligation provides less than 20 years of support to the later phases of large offshore wind plant which is constructed in multiple stages. Generators can choose to wait until all their generating capacity is built before seeking accreditation; this represents a perverse incentive. The RO banding level for offshore wind is based on 20 years of support, and without the full 20 years of support, some of these large, multi-phase offshore wind stations may not go ahead.

Issue

Since the introduction of the 20 year limit on support under the RO, offshore wind developers have queried the way the policy works in practice.

Offshore wind stations are often constructed over a number of years due to the scale of the projects, and the challenges faced with operating in the marine environment. Offshore wind developers are obviously keen to start receiving RO support as soon as possible for financing purposes. Under the current system, Ofgem can accredit a station at any point after they have commissioned. Ofgem accredit the total capacity of a station upfront, and the 20 year limit starts for the whole station's capacity on that date.

In order to ensure all turbines receive 20 years of support, the developer would need to wait until the whole station had been constructed before applying for accreditation. This would delay receipt of ROC income, and may impact the financial viability of projects.

Therefore, offshore wind developers would ideally like Ofgem to be able to 'phase' the support so they receive 20 years for phases of turbines as they are constructed. Government proposes that offshore wind farms be allowed to register up to five phases of turbines for RO support over a maximum of five years from April 2011 onwards. A minimum number of turbines, equivalent to 20% of the total installed capacity of the station will have to be registered in the first phase, with no minimum size requirement for subsequent phases. The band awarded at initial accreditation of the generating station shall apply to all subsequent phases. Phasing over a five year period (as opposed to a shorter time period) has been chosen, given the consideration that a R3 offshore wind

farm could take three to four years to build. Five years allows the added certainty if for example there is bad weather or ships sink.

Most other technologies do not have the same phased construction issue, and accredit when they are fully operational. Although onshore wind stations may also accredit before all the turbines are fully built, they don't have the same restrictions on building imposed by the offshore environment, and thus construction is not as long. They also tend to be smaller stations, and therefore quicker to complete.

Under the current arrangements, the end date of the RO is 2037, so this will cease to be an issue from 2017, as any new capacity will receive less than 20 years support. From this point, stations will want to accredit all their capacity upfront as the total length of support will be reducing each year. E.g. if a station accredits in 2020, it will receive 17 years of support.

Policy Objectives

- Ensuring cost-effective deployment and helping to achieve 2020 renewables target.
- Deregulate and simplify barriers to investment
- Providing an appropriate level of incentives for multi-phase offshore wind projects to proceed.

The Government has consulted on proposed changes to the Renewables Obligation. Based on the consultation, Government is now giving its response accompanied by two impact assessments. This IA covers the proposed change of offshore wind phasing.

Options considered

- 1) Do nothing
- 2) Allow offshore wind generators to register for ROCs in up to five phases from April 2011 onwards, registering capacity for up to five years from the date of first accreditation.

Analysis of “Option 2”

Impacts are considered against the “do nothing” option.

Benefits of phasing offshore wind support

Under the “do nothing” option, multiphase offshore wind stations will have the choice of accrediting all their capacity when the first phase of the station is ready and receiving less than 20 years of RO support for subsequent phases; waiting till all their capacity is commissioned and receiving 20 years of RO support for all phases; or accrediting at some in-between point in time.

They would face a trade-off between accrediting sooner (and getting income sooner to help pay off their finance costs) and waiting to ensure a longer period of support for their subsequent phases. They would choose the accreditation point in order to optimise their project economics.

Allowing phased support would make a small improvement in the project economics of all the new multiphase offshore wind stations. At the margin, this might make a few more projects economically viable, or allow a larger wind farm on a given site to be viable, and hence it could bring more offshore wind generating capacity online. This would increase the UK's chances of meeting the RES target.

However, some multiphase offshore wind farms may have been built and commissioned without the small improvement in project economics brought about by allowing phased accreditation.

Costs of phasing offshore wind support

There are two possible scenarios, for any individual multiphase offshore wind farm, depending on whether phased accreditation takes them ‘above the line’ in terms of profitability that allows investment to proceed.

Where phasing results in additional deployment due to improved project economics, this deployment will displace investment in other electricity generating capacity and there will be an additional resource and RO subsidy cost.

Where plants would have gone ahead with the same deployment even without the phased accreditation, there will be a small transfer from consumers to producers. The direct net welfare effect of this impact would be zero, and as such it is described under distributional impacts below.

The following provides *illustrative* estimates of costs associated with increased offshore wind deployment.

It is assumed that “Allowing Phasing of Offshore Wind Accreditation” could bring on an additional 200-400 MW of offshore wind capacity to be deployed from 2012 to 2016 (compared to 13GW of offshore wind in 2020 in the RES lead scenario). 2016 is chosen as a cut-off point as under the current arrangements, the end date of the RO is 2037 and the maximum support period is 20 years, so from 2017 the phasing of support will cease to be an issue.

The assumption of an additional 200-400MW of offshore build from 2012 to 2016 represents 4.3%-8.7% of the total assumed offshore wind build over that period. This is based on judgement rather than on hard evidence, used to illustrate the potential impact of allowing phasing of offshore wind accreditation.

If the additional 200-400 MW were to displace equivalent investment into and generation from combined cycle gas turbine generation, a resource cost of between £0.76 to £1.5bn would be placed on the UK economy (cost of offshore generation minus cost of CCGT generation excluding carbon cost), offset by 5.1-10.2 Mt of carbon savings valued at £117-236m (range of £59 to £338m).

However, if it were to displace small biomass generation (~50MW plants), a resource cost of between £230 to 470m would be placed on the economy, but there would be no additional carbon savings assumed. Similarly, if it were to displace onshore wind generation, a resource cost of between £390 to £790m would be placed on the economy, and there would be no additional carbon savings.

However, CCGT generation would not contribute to hitting the 2020 renewables target.

This Impact Assessment assumes that any additionally incentivised offshore wind generation displaces equivalent generation from small biomass and onshore wind, in equal proportions. This gives an illustrative additional resource cost of between £310 to £630m. There are no carbon savings from deploying this offshore wind compared to the chosen, i.e. other renewables, counterfactual.

Distributional impacts

The cost to electricity consumers of the deployment of an additional 200-400MW of offshore wind displacing generation from a combination of small biomass and onshore wind plant would be around £490-990m in RO subsidy.

An illustrative estimate of potential cost to consumers associated with increased support for projects that would be built and commissioned without it, can be calculated by looking at a fictional 300MW offshore wind farm which commissions one third of all their offshore wind capacity in 2012, one third in 2014, and one third in 2016. Without being able to phase accreditation, the first third of the capacity would get 20 years of ROC support, the second 18 years of ROC support, and the last third 16 years of ROC support. This would imply a £1.075bn RO subsidy cost. Getting phased support for this offshore wind park instead would imply an RO subsidy cost of £1.100bn. Therefore, implementing phasing for a 300 MW plant, where the plant would have gone ahead anyway, implies a transfer from consumers to producers of £25m (a 2.4% increase of RO subsidy cost).

Previous analysis

These costs and benefits of the phasing of offshore wind accreditation were included in the assessment of costs and benefits of extending the RO to deliver around 29% renewable electricity in

2020 as part of the Impact Assessment for the Renewable Energy Strategy and in the Impact Assessment accompanying the Renewables Obligation Order 2010. This is because the analysis in effect assumed for simplicity 20 years of RO support was available to all phases of offshore wind projects. Hence it would not be expected that this policy by itself would lead to deployment additional to that assumed in the last Impact Assessment which accompanied the Renewables Obligation Order 2010.

Risks and Assumptions

The key assumption on offshore wind phasing, is how many more plants / capacity might proceed (that would not have done otherwise) as a result of allowing the phasing of accreditation. It is uncertain, but expected to be a fairly small number. The calculations above are to illustrate the potential impacts.

Admin Burden

Allowing phasing of offshore wind support might lead to Ofgem having slightly more accreditations to process, but this would add only marginally to their administration costs.

Wider Impacts

Competition Assessment

The RO is a market-based instrument that operates in a competitive market for electricity. It is open to all participants in renewable generation. The way in which the RO recycles money from the buy-out fund should act as a positive incentive to competition between suppliers, and reduce barriers to entry for renewable electricity generators.

Small firms impact test

The major impact of the RO on the large majority of small business is likely to come from increased costs of electricity which, while affecting all electricity consumers, are likely to represent a larger proportion of income for smaller companies, as they are less likely to have their own generation compared to – particularly - larger industrial users with heavy electricity requirements.

The majority of smaller businesses involved in renewables generation are likely to be transferred over to FITs, the simplicity and income-certainty of which makes them better suited to small business needs. Small businesses involved in licensed electricity supply should not experience any additional burdens from the proposals.

Sustainable Development

The RO is aimed at increasing the deployment of renewable electricity generation in order to move the UK away from fossil fuel dependency towards a low carbon economy in preparation for a future when supplies of gas and oil will become tighter and more expensive.

The RO includes sustainability reporting requirements for the use of biomass in electricity generation. This will be reported annually and will help inform Government policy on sustainable use of biomass for electricity generation.

Carbon Assessment

There are assumed to be no additional carbon savings from allowing offshore wind phasing to be accredited at different points in time. This is because the counterfactual is equivalent generation from other renewables technologies and offshore wind electricity generation is already part of the traded system.

Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added where the Specific Impact Tests yield information relevant to an overall understanding of policy options.

Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

| |
|---|
| <p>Basis of the review: [The basis of the review could be statutory (forming part of the legislation), it could be to review existing policy or there could be a political commitment to review]; To review existing policy on an ongoing basis</p> |
| <p>Review objective: [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?] To consider the effectiveness of these measures as part of a wider exploration of the policy approach to encouraging renewable electricity deployment</p> |
| <p>Review approach and rationale: [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach] Review of monitoring data and assessment of stakeholder views through ongoing consultation.</p> |
| <p>Baseline: [The current (baseline) position against which the change introduced by the legislation can be measured] The baseline is the expected take-up of multi-phase offshore wind projects with less than twenty years of full support.</p> |
| <p>Success criteria: [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives] Deployment of multi-phase offshore wind projects; value-for-money for electricity consumers in paying for increased renewable generation and carbon abatement.</p> |
| <p>Monitoring information arrangements: [Provide further details of the planned/existing arrangements in place that will allow a systematic collection of monitoring information for future policy review] Ofgem collect data on deployment and payments under the RO for the various RO-eligible technologies, and similarly for the new small-scale FIT system. Data is also collected on renewable generation operating capacity and generation for the Digest of UK Energy Statistics (DUKES), as well as on the renewable energy planning pipeline.</p> |
| <p>Reasons for not planning a PIR: [If there is no plan to do a PIR please provide reasons here]</p> |

Add annexes here.