Title: **Draft Renewables Obligation Order 2011** **Lead department or agency:** DECC **Other departments or agencies:** Ofgem	Impact Assessment (IA) **URN: 10D/751** **Date:** 15/07/2010 **Stage:** Development/Options **Source of intervention:** Domestic **Type of measure:** Secondary legislation **Contact for enquiries:** Ben Marriott

Summary: Intervention and Options

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

- The UK will need to radically increase its use of renewable electricity if it is to meet its EU target for renewable energy in 2020. The RO provides a financial incentive to correct various market failures and barriers to renewable electricity deployment.
- Consideration needs to be given to appropriate RO support with regard to offshore wind farms which commission their capacity not in one go, but over a number of years.
- Mandatory changes to REGOs required by the Renewable Energy Directive

What are the policy objectives and the intended effects?

- To ensure the deployment of renewable electricity capacity in order to meet the 2020 renewable energy target in a cost-effective manner, and to maintain investor confidence in the RO
- More specifically in this case to ensure deployment of large multi-phase offshore wind farms.
- To transpose a number of mandatory technical changes made by the Renewable Energy Directive 2009 regarding REGOs, making them consistent across Europe.

What policy options have been considered? Please justify preferred option (further details in Evidence Base)

- Allowing a single RO accreditation date (from which support can be received for renewable generation on the station) for multi-phase offshore wind farms (as now); or 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.

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 07/2012
Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?	Yes

Ministerial 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 Minister:..... Date:.....

Summary: Analysis and Evidence

Policy Option 1

Description: IMPACTS OF ALLOWING PHASING OF OFFSHORE WIND ACCREDITATION

Price Base Year 2009	PV Base Year 2010	Time Period Years 21	Net Benefit (Present Value (PV)) (£m)		
			Low:	High:	Best Estimate: -473

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional		Optional	**Optional**
High	Optional		Optional	**Optional**
Best Estimate	N/A		26	**473**

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).

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
New AB:	AB savings:	Net:	Policy cost savings:	Yes/No

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

Costs and benefits.xlsx

Evidence Base (for summary sheets)

Impact Assessment accompanying Statutory Consultation on Renewables Obligation Order 2011 (excluding biomass sustainability proposals, covered in separate Impact Assessment) and on changes to Renewable Energy Guarantees of Origin certificates

Problems under consideration

The Government is consulting on proposed changes to the Renewables Obligation, some of which would be enacted through the Renewables Obligation Order 2011 and on proposed changes to Renewable Energy Guarantee of Origin certificates, which would be enacted through amendments to the Electricity (Guarantee of Origin of Electricity produced from Renewable Energy Sources) Regulations 2003. There are various specific issues under consideration, detailed below.

1) ***Offshore wind phasing*** *– proposal for inclusion in Renewables Obligation Order 2011*

Whether and how to allow different phases of offshore wind stations commissioning at different times to be registered separately and so receive 20 years of RO support for each phase

2) ***Refurbishment and replacement*** *– call for evidence to support longer-term policy decisions as part of proposed RO banding review*

Whether to allow stations that have undergone major refurbishment or replacement (including repowering of wind turbines) to qualify for RO support and at what level

3) ***RO to RHI transitional arrangements for combined heat and power (CHP) stations*** *- call for evidence to support longer-term policy decisions as part of proposed RO banding review*

What RO and what RHI support to offer to existing and new stations in CHP technologies after the introduction the proposed heat support mechanism.

4) ***Sustainability criteria for biomass*** – see separate Impact Assessment

5) ***Sustainability criteria for bioliquids*** – see separate Impact Assessment

6) ***Mutualisation*** *– call for evidence potentially leading to changes in the Renewables Obligation Order 2012 depending on the information gathered*

Calling for views on whether there is a need to change the mutualisation trigger level following the introduction of obligation level setting through the headroom calculation and whether there is a need to change the cap on the size of mutualisation fund cap levels.

7) ***Changes to Renewables Energy Guarantees of Origin certificates (REGOs)*** *- proposed changes to Electricity (Guarantees of Origin of Electricity produced from Renewable Energy Sources) Regulations 2003*

The Renewable Energy Directive mandates a number of changes to REGOs.

This Impact Assessment only considers the two issues (1 and 7) for which regulatory change is proposed in the coming year (as opposed to regulatory change being considered in the longer term, as part of a planned RO banding review).

Rationale for intervention

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 one aspect of the general case for intervention for the RO above. 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, but this is 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. It is therefore proposed that offshore wind stations be allowed to register their capacity for RO support in up to five separate phases.

Policy Objectives

- Ensuring cost-effective deployment and helping to achieve 2020 renewables target.
- Providing an appropriate level of incentives for multi-phase offshore wind projects to proceed.
- Transposing the changes required to REGOs by the Renewable Energy Directive into GB law.

1) Offshore wind phasing

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.

Most other technologies do not have this 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.

Options considered

1) Do nothing

2) Allow offshore wind generators to register for ROCs in up to five phases, registering capacity at most once a year for up to five years from the date of first accreditation.

3+) Allow more/less phases of accreditation; allow accreditation of phases more/less often

Costs and Benefits of option 2

Impacts are considered against the do nothing option.

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.

It is assumed that option 2 allows 300MW more of offshore wind capacity to be deployed from 2012 to 2016 (compared to 13GW of offshore wind in 2020 in the RES lead scenario). If this were to displace equivalent generation from combined cycle gas turbine generation, a resource cost of around £1.1bn would be placed on the UK economy (cost of offshore generation minus cost of CCGT generation excluding carbon cost), offset by 7.7Mt of carbon savings valued at £180m (range of £90 to £250m).

However, if it were to displace small biomass generation (~50MW plants), a resource cost of around £350m would be placed on the economy, but there would be no carbon savings assumed. Similarly, if it were to displace onshore wind generation, a resource cost of around £590m would be placed on the economy, and there would be no carbon savings.

However, CCGT generation would not contribute to hitting the 2020 renewables target. This Impact Assessment assumes that the additional offshore wind generation displaces equivalent generation from small biomass and onshore wind, in equal proportions. This gives a resource cost of around £470m. There are no carbon savings against from deploying this offshore wind compared to the chosen, i.e. other renewables, counterfactual.

The assumption of an additional 300MW of offshore build from 2012 to 2016 represents 6.5% of the total assumed offshore wind build over that period. It is based on judgement rather than on hard evidence, used to illustrate the potential impact of allowing phasing of offshore wind accreditation.

Distributional impacts
The cost to electricity consumers of the deployment of an additional 300MW of offshore wind displacing generation from a combination of small biomass and onshore wind plant would be around £745m in RO subsidy.

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 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.

Costs and benefits of options 3+

Allowing more than five phases of accreditation for offshore wind farms would allow those with more than five phases to maximise the length of time with RO support. However, more possible phases of accreditation increases the administrative requirement on Ofgem. Conversely, fewer phases would reduce Ofgem's administrative requirements, but reduce the positive effect on the wind farms' economics.

Similarly, phased support could be allowed more or less often than once a year. There is a trade-off between allowing wind farms to optimise their economics (allowing at the margin more projects to go ahead) and increasing Ofgem's administration costs.

Where plant economics improve, this comes through an increased RO cost placed on consumers.

7) Changes to Renewable Energy Guarantees of Origin certificates (REGOs)

Renewable Electricity Guarantees of Origin (REGOs) are transferable certificates which demonstrate that electricity has been produced from a renewable source of energy within the European Union.

Ofgem administers the REGO scheme in Great Britain. There is a single accreditation process for generators to undergo in order to be able to claim any combination of REGOs, ROCs and LECs. REGOs are issued by Ofgem on a monthly or annual basis when requested by a electricity producer (or by the relevant NFFO / SRO[2] purchaser). Once issued, REGOs remain in Ofgem's Renewables and CHP Register and can be transferred between parties until used.

[2] NFFO - Non –Fossil Fuel Obligation and SRO - Scottish Renewable Obligation purchaser – e.g. a purchaser of electricity under a NFFO /SRO arrangement or its equivalent in Scotland.

One REGO is issued per kWh of renewable electricity generated. REGOs are rounded up or down to the nearest whole kWh. REGOs have a unique reference number representing the generating station, technology and country of origin. The REGO also states the period over which the electricity was generated. A REGO can be transferred, usually between the producer (or NFFO/SRO purchaser) and the final electricity supplier or user. REGOs have no shelf life and do not have a value in the way that ROCs or LECs do.

The main purpose of REGOs in GB are as evidence for Fuel Mix Disclosure (FMD) purposes. FMD regulations requires that GB licensed electricity suppliers who supply electricity to customers report the different energy sources used to generate the electricity supplied to their customers. REGOs are used as the main evidence of renewable electricity generation for these purposes.

Suppliers must hold all evidence by 1st July annually, for disclosure by 1st October on customers' bills and through publicity. This means that it is increasingly likely that if a generator is selling electricity to an electricity supplier the supplier may require the generator to provide a REGO to accompany that electricity for FMD purposes.

A number of changes are required to the arrangements governing Renewable Energy Guarantees of Origin (REGOs) by 4th December 2010 . These changes are required under Article 15 of the Renewable Energy Directive (RED). These changes include:

- changes to the definitions of '*renewable energy sources*' and '*biomass*';
- a change to the unit of measurement of a REGO from Kilowatt hour to Megawatt hour;
- expiry of the REGO 12 months after production of the electricity for which it is issued and the requirement for REGOs to be cancelled once used;
- various changes to information to be included in the REGO itself.

Options

1) Do nothing

2) Do minimum – make the changes listed in the four bulletpoints above

3) Extend REGOs to cover heating and cooling.

Costs and benefits

Doing nothing would leave the UK in breach of the Renewable Energy Directive, potentially leaving the UK subject to infraction proceedings, which could lead to an unlimited fine.

The compulsory changes to REGOs will marginally increase administrative requirements on Ofgem and renewables generators. However, they will also facilitate the comparability of REGOs across Europe.

Extending the use of REGOs to heating and cooling would require the development of a reporting and monitoring structure immediately, at extra cost. Delaying the issuing of REGOs for heating and cooling until the introduction of the RHI would allow the monitoring and reporting structure to be in place that is being developed for RHI purposes.

Risks and Assumptions

The key assumption on offshore wind phasing, is how many more plants 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, whilst changes to REGOs are likely to very marginally increase Ofgem and business 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.

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.

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
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
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 consulation.
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.
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.
Monitoring information arrangements: [Provide further details of the planned/existing arrangements in place that will allow a systematic collection 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.
Reasons for not planning a PIR: [If there is no plan to do a PIR please provide reasons here]

Add annexes here.