

Summary

Department for Business,
Enterprise and Regulatory
Reform (BERR)

Title:
Offshore Electricity Transmission – A Joint Ofgem/BERR
Regulatory Policy Update - Impact Assessment (08/731)

Stage: Partial

Version: Final

Date: 13 June 2008

Related Publications: Offshore Electricity Transmission – A joint Ofgem/BERR Regulatory Policy Update (08/730)

Available to view or download at:

<http://www.berr.gov.uk/consultations/>

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

The Government is introducing a new regulatory regime for offshore electricity transmission to connect significant amounts of renewable offshore generation to the onshore electricity network, in a timely and cost effective manner whilst maintaining the integrity of the system as a whole and achieving best value to electricity consumers.

Government intervention is necessary to provide the standards, structure and certainty required by an emerging area of energy resource development where currently none exists.

What are the policy objectives and the intended effects?

To design a regulatory framework that will allow offshore electricity transmission networks to be built in an economic, efficient and co-ordinated manner so that they will enable generators located in offshore waters to deliver their generation to the onshore electricity grid, whilst maintaining the integrity of the system as a whole, at the best value to network users and consumers.

What policy proposals are being considered?

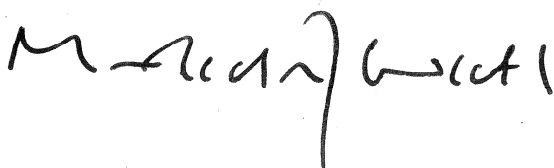
The consultation seeks views on a number of specific proposals relating to the detailed workings of the proposed regime necessary to licence offshore electricity transmission. These include tender design, transitional arrangements, industry codes and technical standards. This IA sets out the costs and benefits of the specific proposals in these areas only. Costs and benefits of previous proposals and decisions, eg adopting a competitive approach to licensing, are covered in previous IAs.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? The Government will undertake a review after the first round of tenders following the implementation of the enduring regulatory arrangements.

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: 13 June 2008

Summary: Analysis & Evidence

All Policy Proposals

Description: Offshore Transmission Regime – Proposals contained in Joint BERR/Ofgem Regulatory Policy Update

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' The costs of all seven proposal areas are included here to provide a summary. They include the costs of calculating revenue streams for the OFTO of Last Resort, establishing and complying with incentives regimes, costs of connection applications, and administrative costs to BERR and Ofgem in establishing the regime.
	One-off (Transition)	Yrs	
	£0.054m-£0.06m	6	
	Average Annual Cost (excluding one-off)		
	£1.25m-£1.37m	6	Total Cost (PV) £8.14m-£8.91m
Other key non-monetised costs by 'main affected groups' There are several areas, particularly in technical rules and industry codes, where we are unable to quantify costs.			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' The main benefits will be through the regime enabling 7GW (over 6 years) of offshore wind to be installed and delivering renewable energy (see para 4.13). In some proposals these benefits are the same but they have not been counted more than once in this summary of benefits (see para 5.4). There are benefits in the reduction of delays to delivering of offshore wind. These benefits are expressed in terms of shadow price of carbon savings and reduced need for alternative CCGT generation.
	One-off	Yrs	
	£65.32m-£80.78m	6	
	Average Annual Benefit (excluding one-off)		
	£454.85m-£486.08m	6	Total Benefit (PV) £2601.62m-£2830.93m
Other key non-monetised benefits by 'main affected groups' There are a range of non-monetised benefits for example in using or adapting existing onshore arrangements unless there is good reason not to do so and providing certainty to generators, potential OFTOs and investors.			

Key Assumptions/Sensitivities/Risks We have assumed a total of 24 projects over the next 6 years requiring tendering, revenue streams and licensing arrangements, etc.

Price Base Year 2008	Time Period Years 6	Net Benefit Range (NPV) £2592.71m-£2822.79m	NET BENEFIT (NPV Best estimate) £2707.75m
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What is the geographic coverage of the policy/option?	GB and REZ			
On what date will the policy be implemented?	April 2009			
Which organisation(s) will enforce the policy?	Ofgem / BERR			
What is the total annual cost of enforcement for these organisations?	£ Not known			
Does enforcement comply with Hampton principles?	Yes			
Will implementation go beyond minimum EU requirements?	N/A			
What is the value of the proposed offsetting measure per year?	£ N/A			
What is the value of changes in greenhouse gas emissions?	See Table 2 (para 8.3)			
Will the proposal have a significant impact on competition?	No			
Annual cost (£-£) per organisation (excluding one-off)	Micro 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	No	No	No	No

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)	
Increase of	£ Not known	Decrease of	Not known
		Net Impact	£ Not known

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Summary: Analysis & Evidence

Policy Proposal 1	Description: Design of regulatory regime
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COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' The main costs would be to Ofgem in terms of delivering the mechanism and monitoring the performance incentives via the reporting requirements and for the OFTO to comply. However, these are not considered to be significant and are estimated to be £2k - £5k per project for Ofgem to develop the incentives and then negligible costs to Ofgem to monitor via the licences/reporting arrangements. For OFTOs we estimate the costs of compliance to be £2k-£5k per project	
	One-off (Transition) £0.004m - £0.010m/project	Yrs 6		
	Average Annual Cost (excluding one-off)			
	Total Cost (PV)			
Other key non-monetised costs by 'main affected groups'				

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' The main benefits will be through the realisation of a timely delivery of assets and improvements in performance as a result of the performance obligations (delivery and availability) via shadow price of carbon savings and reduced need for alternative CCGT generation.	
	One-off £5.16m-£12.89m/project	Yrs 6		
	Average Annual Benefit (excluding one-off)			
	Total Benefit (PV)			
Other key non-monetised benefits by 'main affected groups' There may be benefits to consumers as incentives schemes may improve performance. Proposals concerning the end of and indexation of the revenue stream and arrangements for incremental capacity increases may be beneficial in terms of certainty for generators and potential OFTOs.				

Key Assumptions/Sensitivities/Risks A total of 24 projects will require performance incentives to be set for a revenue stream. Incentives will have a positive impact on one in four projects. Further details are in paragraph 5.6.

Price Base Year 2008	Time Period Years 20	Net Benefit Range (NPV) £29.4m-£73.85m	NET BENEFIT (NPV Best estimate) £51.63m
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What is the geographic coverage of the policy/option?	GB and REZ			
On what date will the policy be implemented?	April 2009			
Which organisation(s) will enforce the policy?	Ofgem / BERR			
What is the total annual cost of enforcement for these organisations?	£ Not known			
Does enforcement comply with Hampton principles?	Yes			
Will implementation go beyond minimum EU requirements?	N/A			
What is the value of the proposed offsetting measure per year?	£ N/A			
What is the value of changes in greenhouse gas emissions?	See Table 2 (para 8.3)			
Will the proposal have a significant impact on competition?	No			
Annual cost (£-£) per organisation (excluding one-off)	Micro 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	No	No	No	No

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)	
Increase of	£ Not known	Decrease of	Not known
		Net Impact	£ Not known

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Summary: Analysis & Evidence

Policy Proposals 2

Description: Competitive tender process / transitional arrangements / tender regulations

COSTS	ANNUAL COSTS		<p>Description and scale of key monetised costs by 'main affected groups' The costs to Ofgem and tender participants were covered in the last IA and are not repeated here. This key monetised costs section covers the costs of the decision to have an OFTO of Last Resort mechanism (details of how this will work are contained in the consultation document). The cost of Ofgem developing a revenue stream for a transitional project under the OFTO of last resort mechanism is estimated at c. £0.05m per project.</p>
	One-off (Transition)	Yrs	
	£0.05m / project		
	Average Annual Cost (excluding one-off)		
		Total Cost (PV)	£0.1m
<p>Other key non-monetised costs by 'main affected groups' There may be costs if generator-led development work is not done to the required standard as it may have to be repeated by potential OFTOs. Generator affiliates who bid may incur business separation costs. A generator as an OFTO of last resort may be awarded a licence that reflects the fact that it is being awarded under this mechanism. There may be costs to consumers if conditions for the transitional arrangements are relaxed as this may reduce the scope of assets exposed to the full benefits of competition. There may also be costs to consumers if the final RAV assessment costs are less than the 75% ex-ante assessment.</p>			

BENEFITS	ANNUAL BENEFITS		<p>Description and scale of key monetised benefits by 'main affected groups' An OFTO of last resort mechanism, should it be required, may lead to time savings and therefore projects may connect sooner leading to benefits in terms of shadow price of carbon and reduced need for alternative CCGT generation. The potential benefits of the wider competitive tender approach were set out in a previous IA and are not included here.</p>
	One-off	Yrs	
	£5.16m-£12.89m/ project	6	
	Average Annual Benefit		
		Total Benefit (PV)	£9.64m – £24.08m
<p>Other key non-monetised benefits by 'main affected groups' There may be greater certainty for all participants that an OFTO will be put in place as a result of the OFTO of Last Resort provisions. Any shared preparatory works, eg on consenting, may reduce overall costs. The proposals for the ex-ante assessment of costs will provide a strong incentive on developers to ensure costs are incurred efficiently.</p>			

Key Assumptions/Sensitivities/Risks The OFTO of Last Resort mechanism will be used twice (once in year 2 and again in year 4). Further detail on assumptions is at paragraph 5.29.

Price Base Year 2008	Time Period Years 6	Net Benefit Range (NPV) £9.54m – £23.98m	NET BENEFIT (NPV Best estimate) £16.76m
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What is the geographic coverage of the policy/option?		GB and REZ		
On what date will the policy be implemented?		April 2009		
Which organisation(s) will enforce the policy?		Ofgem / BERR		
What is the total annual cost of enforcement for these organisations?		£ Not known		
Does enforcement comply with Hampton principles?		Yes		
Will implementation go beyond minimum EU requirements?		N/A		
What is the value of the proposed offsetting measure per year?		£ N/A		
What is the value of changes in greenhouse gas emissions?		See Table 2 (para 8.3)		
Will the proposal have a significant impact on competition?		Yes		
Annual cost (£-£) per organisation (excluding one-off)	Micro 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	No	No	No	No
Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)		
Increase	£ Not	Decrease	£ Not known	Net £ Not known

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Summary: Analysis & Evidence

Policy Proposals 3

Description: Licence Drafting

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' It is not possible to estimate the cost of licensing which would be no more onerous than onshore. For onshore, when the licensing system was introduced there were no requirements for calculating the costs of compliance.
	One-off (Transition)	Yrs	
	£		
	Average Annual Cost (excluding one-off)		
	£ Not Known		Total Cost (PV) £
Other key non-monetised costs by 'main affected groups' There may be consequential changes to other licences but the Government will seek to minimise these. The Government considers that there may be minimal costs for OFTOs in complying with the licence condition of providing regulatory accounts.			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by main affected groups Complying with the licence conditions will enable offshore renewable generation to proceed bringing benefits in terms of shadow price of carbon savings and a reduced need for alternative CCGT generation (up to 7GW capacity from the 24 projects). There would be significant 'sunk' development costs for generators and TOs if offshore transmission connections were built and the licence conditions then not complied with. Transmission connection costs for Rounds 1 & 2 have been estimated at £2.5bn-£3bn.
	One-off	Yrs	
	£		
	Average Annual Benefit (excluding one-off)		
	c. £384m / year	6	Total Benefit (PV) £ 2117.78m
Other key non-monetised benefits by 'main affected groups' There will be benefits to generators, TOs and consumers in that the proposed changes will enable the wider transmission to operate safely and securely. This may lead to a more stable grid system with fewer faults which may reduce costs.			

Key Assumptions/Sensitivities/Risks Offshore licence conditions should replicate onshore licence conditions as closely as possible, except where there is a good reason for differences. A total of 24 projects will require an OFTO and the 3 existing onshore TOs will be required to comply with the proposed changes to licences. Further details are in paragraph 5.55.

What is the geographic coverage of the policy/option?		GB and REZ		
On what date will the policy be implemented?		April 2009		
Which organisation(s) will enforce the policy?		Ofgem		
What is the total annual cost of enforcement for these organisations?		£ N/K		
Does enforcement comply with Hampton principles?		Yes		
Will implementation go beyond minimum EU requirements?		N/A		
What is the value of the proposed offsetting measure per year?		£ N/A		
What is the value of changes in greenhouse gas emissions?		See Table 2 (para 8.3)		
Will the proposal have a significant impact on competition?		No		
Annual cost (£-£) per organisation (excluding one-off)	Micro 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	No	No	No	No

Price Base Year 2008	Time Period Years	Net Benefit Range (NPV) £ 2117.78m	NET BENEFIT (NPV Best estimate) £ 2117.78m
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Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)	
Increase of	£ Not known	Decrease of	£ Not known
Net Impact		£ Not known	

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Summary: Analysis & Evidence

Policy Proposals 4

Description: Technical rules and industry codes

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' There may be costs to generators, NGET, TOs and potential OFTOs in complying with the changes required to the Grid Code, STC, and GBSQSS to ensure the safe, secure and efficient operation of the transmission system. However the overall cost of compliance is expected to be equivalent to the costs of offshore generators complying with requirements defined at the interface point with an onshore system. It is not possible to estimate the cost of complying with the requirements as there were no requirements for calculating the costs of compliance when they were introduced.
	One-off (Transition)	Yrs	
	£		
	Average Annual Cost (excluding one-off)		
£ Not Known			Total Cost (PV) £
Other key non-monetised costs by 'main affected groups' There may be costs to generators and OFTOs associated with the technical requirements which currently apply to offshore developers at the onshore connection point.			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups'. The approach to definition of a large power station will have significant savings in avoided transmission system investment costs for reactive power capability (c. £55m) and ongoing frequency response costs (c. £50m/year). The benefits of complying with the necessary changes are significant for both generators and OFTOs as it will enable offshore generation to connect and there will be benefits in terms of shadow price of carbon savings and a reduced need for CCGT generation. This provides a benefit of £384m per year.
	One-off	Yrs	
	£ 55m		
	Average Annual Benefit (excluding one-off)		
£ 434m/year		6	Total Benefit (PV) £ 2448.53m
Other key non-monetised benefits by 'main affected groups' The proposals will allow the offshore system to operate securely and efficiently and interact with the onshore system safely. Implementing the new offshore transmission regime as changes to existing industry codes is likely to be beneficial to all players in terms of keeping ongoing administration costs down.			

Key Assumptions/Sensitivities/Risks The basic approach in applying existing onshore technical rules offshore unless there is good reason not to do so. There is further work to be done to refine the draft text for the relevant technical rules and codes which is being led by Ofgem / BERR with assistance of industry participants familiar with normal governance arrangements. Further details are in paragraph 5.72.

Price Base Year 2008	Time Period Years	Net Benefit Range (NPV) £ 2448.53m	NET BENEFIT (NPV Best estimate) £ 2448.53m
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What is the geographic coverage of the policy/option?		GB and REZ	
On what date will the policy be implemented?		April 2009	
Which organisation(s) will enforce the policy?		Ofgem	
What is the total annual cost of enforcement for these organisations?		£ N/K	
Does enforcement comply with Hampton principles?		Yes	
Will implementation go beyond minimum EU requirements?		N/A	
What is the value of the proposed offsetting measure per year?		£ N/A	
What is the value of changes in greenhouse gas emissions?		See Table 2 (para 8.3)	
Will the proposal have a significant impact on competition?		No	
Annual cost (£-£) per organisation (excluding one-off)	Micro 0	Small 0	Medium 0
Are any of these organisations exempt?	No	No	No
Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)	
Increase of	£ Not known	Decrease of	£ Not known
Net Impact		£ Not known	

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Summary: Analysis & Evidence

Policy Proposals 5

Description: Charging, Access and Compensation

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' There may be costs to OFTOs and generators to comply with the requirements i.e.setting up systems but these are likely to be consistent with those required onshore and small compared to the value of the assets. It is not possible to estimate the costs as when the arrangements were introduced there were no requirements for calculating the costs of compliance. There will be costs to NGET in developing the offshore arrangements but the Government does not consider these costs to be significant.
	One-off (Transition)	Yrs	
	£		
	Average Annual Cost (excluding one-off)		
	£ Not Known		Total Cost (PV) £
Other key non-monetised costs by 'main affected groups' The costs are likely to be higher for new entrants who may not have existing infrastructure. There may be costs to industry via industry modification procedures but these will be similar to those onshore			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' The benefits of compliance in these 3 areas may be significant given the penalties for failure to do so. In general if the proposals are implemented, they will help to facilitate the connection and efficient operation of 7GW of offshore renewable generation with significant benefits. Failure to comply with the requirements is likely to lead to OFTOs being unable to operate assets worth up to £2.5bn (for 24 projects) and generators being unable to connect to the grid with the potential for further significant sunk costs and stranded assets. Connection to a distribution system may enable projects to connect quicker.
	One-off	Yrs	
	£		
	Average Annual Benefit (excluding one-off)		
	c. £384m / year	6	Total Benefit (PV) £ 2117.78m
Other key non-monetised benefits by 'main affected groups' There may be benefit in time savings and clarity and therefore lower costs in keeping the processes similar to those which are used onshore.			

Key Assumptions/Sensitivities/Risks Existing onshore arrangements will be used or adapted unless there is good reason not to do so. Further detail on the background to the development of the proposals is set out in the accompanying Consultation Document and on the assumptions is at paragraph 5.134 of this document.

Price Base Year 2008	Time Period Years	Net Benefit Range (NPV) £ 2117.78m	NET BENEFIT (NPV Best estimate) £ 2117.78m
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What is the geographic coverage of the policy/option?		GB and REZ		
On what date will the policy be implemented?		April 2009		
Which organisation(s) will enforce the policy?		Ofgem		
What is the total annual cost of enforcement for these organisations?		£ N/K		
Does enforcement comply with Hampton principles?		Yes		
Will implementation go beyond minimum EU requirements?		N/A		
What is the value of the proposed offsetting measure per year?		£ N/A		
What is the value of changes in greenhouse gas emissions?		See Table 2 (para 8.3)		
Will the proposal have a significant impact on competition?		No		
Annual cost (£-£) per organisation (excluding one-off)	Micro 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	No	No	No	No
Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)		
Increase of	£ Not known	Decrease of	£ Not known	Net Impact £ Not known

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Summary: Analysis & Evidence

Policy Proposals 6

Description: Connection application process

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' There is a one-off connection application fee payable by the generator to the GBSO which may be £250k / project. However this cost does already currently apply to an onshore generator seeking a transmission connection. Connection application fee of c. £20k – £50k / project payable by NGET to the onshore distribution licensee.
	One-off (Transition)	Yrs	
	Average Annual Cost (excluding one-off)		
	£ 1.08m-£1.2m	6	
Total Cost (PV)			£5.96m-£6.62m
Other key non-monetised costs by 'main affected groups' There may be costs to the generator, Ofgem and NG if the initial connection offer is disputed and goes to determination. Similarly, costs may be incurred if the proposed agreement to vary the initial connection offer does not meet the generator's requirements. The GBSO may also require a financial commitment once the connection offer is agreed to securitise costs of onshore works but these will be project specific.			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' If only those players that met the pre-conditions within the CUSC initiated the connection application process it may reduce unnecessary delays in the connection process and improve utilisation of the transmission system. This may eventually lead to projects connecting more quickly which will have benefits of £5.16m - £12.89m in terms of shadow price of carbon savings and a reduced need for alternative CCGT generation.
	One-off	Yrs	
	Average Annual Benefit (excluding one-off)		
	£20.64m-£51.56m	6	
Total Benefit (PV)			£113.83-£284.36m
Other key non-monetised benefits by 'main affected groups' A two-stage process may give certainty to the generator and potential OFTOs that a process is in place that is able to take account of changing circumstances and allows for the possibility of sharing of information and common preparatory works. The approach to enable a connection offer that is subject to determination to enter the tender process may have a benefit in terms of time saving for the developer.			

Key Assumptions/Sensitivities/Risks 24 projects seek a connection over 6 years with 4 projects / year. There is a risk that projects may fail during the tender process and there is a need to enable these costs to be recovered via the generator commitment fee. 3 projects connect via a distribution system Further details are in para 5.155.

Price Base Year 2008	Time Period Years	Net Benefit Range (NPV) £107.87m - £278.4m	NET BENEFIT (NPV Best estimate) £ 193.14m
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What is the geographic coverage of the policy/option?		GB and REZ		
On what date will the policy be implemented?		April 2009		
Which organisation(s) will enforce the policy?		Ofgem		
What is the total annual cost of enforcement for these organisations?		£ N/K		
Does enforcement comply with Hampton principles?		Yes		
Will implementation go beyond minimum EU requirements?		N/A		
What is the value of the proposed offsetting measure per year?		£ N/A		
What is the value of changes in greenhouse gas emissions?		See Table 2 (para 8.3)		
Will the proposal have a significant impact on competition?		No		
Annual cost (£-£) per organisation (excluding one-off)	Micro 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	No	No	No	No
Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)		
Increase of	£ Not known	Decrease of	£ Not known	Net Impact £ Not known

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Summary: Analysis & Evidence

Policy Proposals 7

Description: Implementation issues / work programme

COSTS	ANNUAL COSTS		<p>Description and scale of key monetised costs by 'main affected groups' There will be costs to BERR to implement the regime via commencement of sections of the Energy Act 2004, and to Ofgem in developing detailed proposals and licence drafting for the new regulatory regime. This includes staff, legal and technical consultancy costs.</p>	
	One-off (Transition)	Yrs		
	£			
	Average Annual Cost (excluding one-off)			
	£ 1.00m/yr	2	Total Cost (PV)	£1.97m
<p>Other key non-monetised costs by 'main affected groups' There may be costs to Ofgem, generators and OFTOs in complying with the new regime in terms of using the existing modification process to implement changes to codes and licenses. However, these are likely to be similar to those associated with the onshore regime. Costs may also fall to owners of the industry codes who are assisting with legal drafting.</p>				

BENEFITS	ANNUAL BENEFITS		<p>Description and scale of key monetised benefits by 'main affected groups' A clear framework that sets out rights and obligations for parties will protect the security of the system and facilitate competition. The Government has decided to adopt a licensed approach and if the proposals are implemented, the development of 7GW of offshore wind may lead to benefits of in terms of shadow price of carbon savings and reduced fuel costs for CCGT generation.</p>	
	One-off	Yrs		
	£			
	Average Annual Benefit (excluding one-off)			
	c. £384m	6	Total Benefit (PV)	£ 2117.78m
<p>Other key non-monetised benefits by 'main affected groups' Where appropriate existing industry mechanisms should be used to help keep processes simple and transparent. Benefits of the wider regime will be felt by the offshore renewable generation sector and associated industrial sectors. There will be significant benefit to UK consumers in terms of renewable energy generation leading to reduced carbon emissions and increased security of energy supply through more diverse energy sources.</p>				

Key Assumptions/Sensitivities/Risks Where possible, changes to codes and licences should be accommodated within the existing framework using existing structures and modification mechanisms. Industry will continue to play an active role in the development of the regime by responding to consultations and participating in the work streams throughout the development process. Further details are in paragraph 5.180.

Price Base Year 2008	Time Period Years	Net Benefit Range (NPV) £ 2115.8m	NET BENEFIT (NPV Best estimate) £ 2115.8m	
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What is the geographic coverage of the policy/option?					GB and REZ
On what date will the policy be implemented?					April 2009
Which organisation(s) will enforce the policy?					Ofgem
What is the total annual cost of enforcement for these organisations?					£ N/K
Does enforcement comply with Hampton principles?					Yes
Will implementation go beyond minimum EU requirements?					N/A
What is the value of the proposed offsetting measure per year?					£ N/A
What is the value of changes in greenhouse gas emissions?					See Table 2 (para 8.3)
Will the proposal have a significant impact on competition?					No
Annual cost (£-£) per organisation (excluding one-off)		Micro 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?		No	No	No	No
Impact on Admin Burdens Baseline (2005 Prices)					(Increase - Decrease)
Increase of	£ Not known	Decrease of	£ Not known	Net Impact	£ Not known

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Evidence Base (for summary sheets)

1. PURPOSE AND INTENDED EFFECT OF MEASURE

Objective / Background

- 1.1 The Government is putting in place a framework to encourage the development of generation of electricity from offshore renewable energy sources. The Government expects significant amounts of renewable generation projects situated offshore will be necessary to contribute to the UK's targets and aspirations for increasing the proportion of the country's electricity supply from renewable sources. There are currently plans to develop more than 8 GW of offshore wind in UK waters under Round 1 (R1) and Round 2 (R2) offshore wind leasing rounds, but the Government is also supporting the development of wave and tidal renewable energy devices which are expected to come forward in the longer term.
- 1.2 On 10 December 2007, the Government announced a Strategic Environmental Assessment (SEA) of a Draft Plan¹ which will assess the objective of achieving up to 25 GW of offshore wind generation capacity by 2020, on top of the current plans for 8 GW of offshore wind generation. For offshore wind leasing, the SEA will cover the UK territorial waters and adjacent areas where the water depth is around 60m or less, but excluding Scottish and Northern Irish territorial waters, where it is considered that there is limited scope for development and consequently no overarching plan or programme for offshore wind farms. The Crown Estate launched on 4 June its Round 3 for the delivery of up to 25 GW of new offshore wind farms by 2020. That additional capacity will potentially require several billion pounds of further offshore transmission network investment.
- 1.3 In Great Britain, these new offshore generating stations will need to connect to the main onshore electricity network (transmission and distribution) in order for the electricity generated to be supplied to end-users, including domestic consumers.
- 1.4 The Energy Act 2004 (EA 2004) provides powers for the Secretary of State to make changes to the codes, agreements and licences for the purposes of regulating offshore electricity transmission and distribution.
- 1.5 Since taking the EA 2004 powers the Government has been working with the Gas and Electricity Markets Authority ("the Authority") to establish an offshore transmission licensing regime to regulate the conveyance of electricity along high voltage lines offshore (defined in the EA 2004 as those with a nominal voltage of 132kV or more) and associated plant and equipment which connect offshore generating stations to the onshore electricity grid.
- 1.6 Under the new regime Ofgem, as the regulator of the gas and electricity industries in Great Britain, will be responsible for regulating offshore transmission licensees as it does for onshore transmission network companies.
- 1.7 In April 2006² the Government decided that the appropriate model for the regulation of offshore electricity transmission was through a regulated price control approach, extending the principles of the onshore regulated price control approach into the offshore sector.
- 1.8 The Government concluded then that the extension of the current onshore regime offshore was the correct approach to take for licensing offshore transmission because it would:
 - Ensure consistency with the regulatory arrangements onshore;
 - Provide assistance to offshore developers by recovering the costs of building offshore grid connections through National Grid Electricity Transmission's (NGET's) charging methodology – thus spreading the costs they would pay to connect to the onshore grid over a number of years, as happens onshore;

¹ <http://www.offshore-sea.org.uk/site/index.php>

² <http://www.berr.gov.uk/files/file27137.pdf>

- Mean that the responsibility for development of the offshore transmission network would not fall to generators alone and instead the risks and costs of developing offshore grid connections would be shared by the System Operator and Offshore Transmission Owners (OFTOs);
 - Ensure a co-ordinated approach to the development of the offshore network, providing an additional environmental benefit, by reducing the unnecessary duplication of transmission assets.
- 1.9 Post commencement of sections 89, 90, 91, 92 and 180 of the EA 2004, participation in the transmission of electricity offshore at voltages of 132kV and above will be a prohibited activity without a licence.
- 1.10 In developing the regime, the Government announced in August 2006 that NGET's role as GB System Operator (GBSO) would be extended offshore³. As a result NGET will be GBSO both onshore and offshore, once the relevant parts of the EA 2004 are commenced and appropriate modifications made to NGET's licence for those purposes. Until then NGET is acting as offshore GBSO designate and is assisting in the development of the new regime.
- 1.11 In November 2006 DTI published an Open Letter to industry clarifying the regulatory position of high and low voltage offshore connections⁴. In the same month the DTI also published a consultation document which gave notice of, and invited views on, a proposal for the exemption by class of offshore electricity distributors from the requirement to hold a distribution licence⁵.
- 1.12 Also in November 2006 the DTI and Ofgem jointly published a consultation document on the options for licensing the offshore transmission connections between generators located in offshore waters and onshore electricity networks⁶. The document invited views on two possible models for licensing OFTO activities under a price control regime. The two options were (i) multiple non-exclusive licences issued for the offshore area with competition for the right to build, own and operate offshore transmission assets ("non-exclusive approach"), or (ii) awarding licences by competitive tender for specific areas offshore, with the OFTO responsible for connecting all projects in that area ("exclusive approach").
- 1.13 On 1 April 2007, the Government announced its decision to grant a class exemption for offshore electricity distributors from the requirement to hold a distribution licence⁷.
- 1.14 Later in April 2007, the Government announced its decision on the model of licensing for offshore transmission⁸. The Government announced that it had concluded that the non-exclusive approach (licences awarded by competitive tender for specific offshore transmission assets) was the most appropriate model for licensing offshore transmission. In reaching its decision the Government concluded that this approach will deliver cheaper and more timely grid connections; encourage innovation through competition and enable new entrants to compete in the market; be more focused on generator's requirements than the onshore system or the exclusive approach; and enable generators to bid to own their transmission assets if they wish, subject to unbundling requirements compliant with EU legislation.
- 1.15 The day after publication of the April 2007 Government response, Ofgem published a second Scoping Document⁹ providing a detailed overview of how it intended, in partnership with the Government and industry, to develop and deliver an offshore regulatory regime.

³ <http://www.berr.gov.uk/files/file32874.pdf>

⁴ <http://www.berr.gov.uk/files/file35598.pdf>

⁵ <http://www.berr.gov.uk/files/file35593.pdf>

⁶ <http://www.berr.gov.uk/files/file35530.pdf>

⁷ <http://www.berr.gov.uk/files/file38027.pdf>

⁸ <http://www.berr.gov.uk/files/file38705.pdf>

⁹ http://www.ofgem.gov.uk/Networks/Trans/Offshore/ConsultationDecisionsResponses/Documents1/070330_2ndOffshoreScopingDoc_final_am.pdf

- 1.16 The Ofgem document set out a framework to deliver the appropriate changes in accordance with the Government's aims. Essentially it set out a proposed model or "straw man" for the proposed offshore regulatory regime. That straw man was further developed through discussion with industry through work shops and a series of work groups.
- 1.17 That process of discussion and development led to the publication by BERR and Ofgem of the Joint Policy Statement¹⁰ in July 2007 which sought views on policy proposals in a number of key areas including the design of the regulatory regime; the enduring competitive framework; transitional arrangements; and a number of technical issues.
- 1.18 The January 2008 Joint Policy Statement gave the Government's response to the July 2007 Joint Policy Statement¹¹ and confirmed decisions including that Ofgem will run the competitive tender process to determine who will be appointed as new licensed OFTOs.
- 1.19 Shortly after the publication of the January 2008 Policy Statement, Ofgem published a Regulatory Policy Update¹² which set out further detail on issues and policy questions that needed to be addressed including:
- updated proposals on the design of the regulatory regime for offshore electricity transmission;
 - updated proposals on how Ofgem envisages running the competitive tender process for both the enduring regime and transitional arrangements; and
 - an update on implementation of the regime, including development of the various code and licence amendments to accommodate the offshore regime.
- 1.20 Responses to this document¹³ and the subsequent development of these issues through work streams and industry work shops since the publication of the documents in January 2008 have been used to develop the proposals in the latest consultation document¹⁴. The Government considers that these proposals create the right framework for efficient investment in offshore networks, allow scope for innovation, and are flexible enough to meet the needs of future offshore generators.

¹⁰ <http://www.berr.gov.uk/files/file40629.pdf>

¹¹ <http://www.berr.gov.uk/files/file43555.pdf>

¹² <http://www.ofgem.gov.uk/Networks/Trans/Offshore/ConsultationDecisionsResponses/Documents1/Offshore%20Electricity%20Transmission%20-%20Regulatory%20Policy%20Update.pdf>

¹³ <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=92&refer=Networks/Trans/Offshore/ConsultationDecisionsResponses>

¹⁴ <http://www.berr.gov.uk/energy/sources/renewables/policy/offshore-transmission/consultations/page42095.html>

2. CONSULTATION

- 2.1 We will seek agreement from other Government departments before issuing the final consultation on the full detail of the proposed regime in winter 2008.
- 2.2 This latest consultation, which is part of the ongoing process to introduce a regulatory framework for offshore electricity transmission, was published on 13 June 2008 and the period for comment closes on 25 July 2008.
- 2.3 Views are sought from stakeholders including offshore wind developers, transmission owners, trade associations, manufacturers and materials and equipment suppliers, consumer bodies and other users of the electricity grid during the 6-week consultation.
- 2.4 The consultation seeks further views on a number of specific issues relating to the detail of the regulatory regime, enduring and transitional tender processes, technical rules and industry codes, charging, access, compensation and the connection process. This document sets out the possible impacts of the proposals in this latest consultation document.
- 2.5 As set out in the consultation document, the Government and Ofgem are allowing more time to consult on draft licence, code and agreement modifications. We recognise the importance of these areas and also the large volume of documentation which needs to be reviewed and revised. We have therefore added another round of consultation to the previous work programme. The revised key high level milestones and currently anticipated dates are set out at paragraph 5.190.
- 2.5 The Government will undertake a final consultation in winter 2008. We anticipate that sections 90 and 91 of the EA 2004 should be commenced in April 2009. The Secretary of State will then direct the necessary changes to licences, codes and agreements to implement the new regime.

Previous Public Consultations

- 2.6 Details of previous related public consultations can be found on the BERR website¹⁵.

¹⁵ <http://www.berr.gov.uk/energy/sources/renewables/policy/offshore-transmission/consultations/page42095.html>

3 REGULATORY BURDENS AND COMPENSATORY SIMPLIFICATION

- 3.1 There is a need to create regulation of electricity transmission in the marine environment. This will give the structure, standards and certainty required by an emerging area of energy resource development, and facilitate its connection to the onshore grid in a manner that ensures the integrity of the whole system is maintained.
- 3.2 Previous related Impact Assessments (IAs) have discussed the need for regulation in this area. Details of measures to reduce burdens and compensatory simplification in relation to previous decisions in the development of the offshore transmission regulatory regime are available on the BERR website¹⁶.
- 3.3 Whilst it is difficult to provide direct compensatory simplification measures, as offshore transmission is currently not regulated in any way, the Government remains committed to minimising the regulatory burden on business.
- 3.4 In designing the regime the Government is implementing a light-touch approach to ensure that regulatory burdens are kept to a minimum. Central to this is the competitive approach to the ownership of offshore transmission assets which the Government believes removes much of the need for regulatory intervention.
- 3.5 The basic premise in designing the offshore regime is that it should, wherever possible, mirror the onshore regime. If the process remains recognisable and players are familiar with the operation of the regime, it is more likely that burdens, costs and delays will be minimised as they will not have to become familiar with new products, systems and mechanisms.
- 3.6 Previous IAs have set out, at a high level, how the Government considers that regulatory burdens within the new regime can be reduced by:
- the design of the regulatory regime;
 - the approach that is being used to make the required changes to the industry codes, licences and agreements;
 - the streamlining of the tender process:
- 3.7 The Government considers that the detail of how the tender process will operate set out in the consultation document will help to further ensure that the regulatory burdens on those in the tender process will be further reduced. The Government also considers that the flexible approach it intends to take on a number of issues within the design of the regulatory regime and tender process is more likely to ensure that regulatory burdens are reduced than a rigid, prescriptive approach.
- 3.8 The consultation document sets out the Government proposals to enable the establishment of a framework for regulatory reporting based upon the arrangements that have been developed for onshore transmission and distribution companies, where failure to report in accordance with the reporting requirements is a breach of the licence.
- 3.9 The Government considers that there may be benefit in adopting this approach as it will ensure that the regime will be monitored effectively. However, the Government recognises that annual reporting, for example, may require a significant resource commitment by Ofgem and companies alike. Given the simpler nature of OFTO businesses it is not clear that imposing a similar burden of detailed annual reporting upon offshore transmission companies is appropriate given the longer term approach to revenues as set out earlier.
- 3.10 The Government is keen to ensure that the regulatory burden of such arrangements strike an appropriate balance between the need to monitor the regulatory regime effectively while

¹⁶ <http://www.berr.gov.uk/energy/sources/renewables/policy/offshore-transmission/consultations/page42095.html>

ensuring that the reporting arrangements do not provide an onerous regulatory burden upon licensees.

- 3.11 The Government considers that a number of proposals concerning the technical rules will help to ensure that regulatory burdens are reduced wherever possible particularly to ensure that barriers to market entry are minimised. Issues surrounding the operation of an offshore transmission system, investment planning and System Operator Transmission Owner Code (STC) governance arrangements will help to ensure that regulatory burdens are kept to a minimum whilst ensuring the safety and security of the transmission network.

4. PROPOSALS

- 4.1 In developing the policy proposals for each of the issues in the June 2008 consultation document, the Government was mindful of the issues and policy questions that needed to be addressed as set out in Ofgem's January 2008 Policy Update document¹⁷. The Government took into account the responses received to this document¹⁸ and the subsequent development of these issues through work streams / industry workshops since January 2008.

Description of proposals

- 4.2 This section outlines each of the key issues and proposals for this consultation. These are set out in more detail in the accompanying consultation document;

Design of the regulatory regime

- Period of revenue stream period
- End of the regulated revenue stream
- Adjustments to the revenue stream
- Performance obligations
- Reporting arrangements
- Generator requirements

Tender process including transitional arrangements

- Pre-conditions for tenders in enduring regime
- Four stage tender process
- Generator affiliates allowed to bid
- OFTO of last resort for transitional arrangements but not for enduring regime
- Annual tender windows
- Generators to continue to gain consents/leases for transmission assets
- Responsibility for seabed surveys and how these will fit into tender process
- Eligibility for transitional arrangements
- Comfort on funding
- Transfer of assets

Licence drafting

- Seven Year Statement
- Connection offers
- Performance incentive
- Overlay of licence areas
- Relationship between NGET and OFTO subsidiaries

Technical rules and industry codes

- Balancing and Settlement Code (BSC)
- Connection and Use of System Code (CUSC)
- Distribution Connection and Use of System Agreement (DCUSA)
- Distribution Code
- Grid Code
- System Operator Transmission Owner Code (STC)
- Great Britain Security and Quality of Supply Standard (GBSQSS)

Charging, access and compensation

¹⁷<http://www.ofgem.gov.uk/Networks/Trans/Offshore/ConsultationDecisionsResponses/Documents1/Offshore%20Electricity%20Transmission%20-%20Regulatory%20Policy%20Update.pdf>

¹⁸<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=92&refer=Networks/Trans/Offshore/ConsultationDecisionsResponses>

- Mechanism for compensation arrangements
- Mechanism for the OFTO funding of compensation
- The performance incentive

Connection application process

- Two-stage application process
- Connection via distribution systems

Do nothing option

- 4.3 The Government had previously concluded that the option not to regulate i.e. do nothing was neither a practical nor a legal possibility¹⁹. This was further confirmed during the ‘Licensing Offshore Transmission’ consultation²⁰. The Government remains of this view and this option should not therefore be considered further.

Costs and Benefits

Sectors and groups affected

- 4.4 In its broadest context, the new regulatory regime will affect all electricity suppliers and generators in Great Britain, particularly the renewable energy industry, offshore and onshore transmission and distribution companies and ultimately, all consumers of electricity in Great Britain. However, consumers are only likely to be affected by this measure to the extent that it leads to changes in the prices they pay for electricity.
- 4.5 Previous IAs²¹ concerning the development of the offshore electricity transmission regime have set out in detail the sectors and groups affected and the possible impact that the development of these policies may have.
- 4.6 The Government believes that as this latest consultation is concerned with further development of previously agreed policy decisions, the sectors and groups affected remain unchanged.

Costs and benefits of each consultation option

- 4.7 A discussion of the possible economic, environmental and social costs and benefits of each proposal is available at Annex B.

Summary of the economic, environmental and social costs and benefits of each option

Economic costs and benefits

- 4.8 The proposals being consulted upon will have significant economic benefits for all participants across the offshore renewable generation sector – generators, TOs, suppliers, users and consumers – in that they will allow and encourage the development of offshore renewable generation projects. A light touch approach to regulation, which has the basic premise of applying onshore systems to the offshore environment where possible, will help to ensure that the costs are kept to a minimum, and is more likely to ensure a timely delivery of the regulatory regime.
- 4.9 The proposals to have a 20 year revenue stream and the arrangements proposed at the end of this period will provide certainty to potential OFTOs and will ensure that the ongoing

¹⁹ <http://www.berr.gov.uk/files/file27138.pdf>

²⁰ <http://www.berr.gov.uk/files/file38704.pdf>

²¹ <http://www.berr.gov.uk/energy/sources/renewables/policy/offshore-transmission/consultations/page42095.html>

administrative burdens traditionally associated with an onshore price control are significantly reduced. The proposed performance incentives are likely to have a significant benefit for all stakeholders including consumers through encouraging transmission connections that are both timely and reliable.

- 4.10 The Government believes that proposals outlined in respect of the competitive and transitional tender processes, provide further clarity and certainty to generators and potential OFTOs which is likely to increase competition and reduce costs. Enabling Ofgem to recover its costs is likely to ensure an efficient and effective tender process which will deliver offshore transmission connections at the lowest cost, to an appropriate standard and in a timely basis by a process which encourages innovation in technical, financial and commercial approaches. Furthermore, the Government believes that the proposed approaches to the technical aspects of the regime will benefit from being closely aligned to the onshore process in terms of lower costs and overall efficiencies.
- 4.11 There will be costs to those involved in the new regime in terms of participating in the competitive approach including the requirement to fund Ofgem's costs in running the tender process and complying with the technical requirements of the new regime. It is important that these costs are proportionate and do not discourage new entrants to the sector as this may impact on the ability of the regime to deliver a cost-effective, competitive solution to the required timescales.
- 4.12 The Government considers that its approach to the development of the necessary changes to the licenses, codes and agreements will have benefits. The Government approach is based on the existing onshore arrangements and it proposes to only make changes to enable the offshore regime to operate safely, securely and efficiently. It believes that this approach will ensure that costs for all stakeholders are kept to a minimum and will not mean any party is unduly discriminated against.
- 4.13 In quantitative terms the Net Benefit (NPV Best estimate) in this IA focuses on the benefits that enabling 7GW of offshore wind generation to be built will bring. The key measures of this are in terms of the shadow price of carbon savings and the reduced need for fuel for alternative CCGT generation. It is recognised that each policy area could have a significant affect on this i.e. each proposal is key to the regime being able to function and therefore enable the benefits to be realised. It has been estimated that these benefits, if 7GW of offshore wind were to proceed would be c. £384m / year for 6 years.²²

Environmental costs and benefits

- 4.14 The Government considers that the proposals such as the OFTO of last resort mechanism within the transitional arrangements are more likely to encourage offshore renewable generation and reduce delays to project development. This will have a significant positive environmental impact in terms of CO₂ emission reductions with associated cost savings in terms of shadow price of carbon and a reduced requirement for alternative Combined Cycle Gas Turbine (CCGT) generation. The proposals which set out in more detail the operation of an efficient competitive tender approach are more likely to deliver innovative solutions which may reduce negative environmental impacts.
- 4.15 The Government, however, remains aware that there is a need to ensure there is sufficient co-ordination between the connection and tender process to ensure that offshore transmission connections are delivered in a timely manner and therefore have a minimal environmental impact. The Government is mindful that the tender process does not lead to significant delays

²² Based on the average savings of £95m / year for 6 years in terms of shadow price of carbon (cumulatively £574m until 2013 – see table 2 in para 8.3) and average savings of £298m / year over 6 years in terms of the costs of fuel for alternative CCGT generation that would be required (cumulatively £1733m until 2013 – see table 3 in Annex 3). It must be noted that whilst a number of policy proposals could each lead to the savings of £384m / year these have only been accounted for once in the total benefits figure.

to early Round 2 offshore wind projects as this may lead to negative environmental impacts in terms of lost CO₂ emission reduction. Similarly, the Government is mindful of the negative impact that any delays in implementing the new regime will have and considers that the proposals strike the appropriate balance.

Social costs and benefits

- 4.16 The proposals which will encourage offshore renewable generation will have a significant social benefit through a reduction in CO₂ emissions and increased diversity of the energy mix both in terms of fuel type and geographic source. The Government believes that the proposals such as those set out for performance incentives will help to ensure that reliable transmission assets are delivered on time which will help to reduce the costs of delivering and operating offshore transmission assets.

5. Analysis and explanation of costs and benefits outlined in the Summary Analysis and Evidence Pages

- 5.1 This section focuses on an explanation of the key costs and benefits set out in the summary analysis and evidence pages which relate to the main Government policy proposals which are set out in more detail in the accompanying Ofgem/BERR Consultation Document June 2008. These proposals are those that are required to implement the wider policy decisions in the key areas that have already been taken following earlier consultations and Government decisions.
- 5.2 This section does not cover issues on which the Government has already taken decisions and which have already been set out in previous IAs. For example, in terms of the decision to have a competitive approach to the award of OFTO licences, this IA does not repeat the costs and benefits of the competitive approach such as the costs of OFTOs bidding or the potential savings that the competitive tender process will help to realise as these issues have been set out and discussed in detail previously.
- 5.3 This IA describes the key costs and benefits in the summary analysis and evidence pages and then provides the background assumptions that have been used in developing those figures (the detailed rationale behind these assumptions can be found at Annex C). Where necessary, there is then further discussion and explanation of these costs and benefits. Where it has not been possible to develop quantitative measures of the likely costs and benefits, qualitative analysis will be used to explain and substantiate the proposals as far as possible. Please note that the figures and estimates used are based on best current information and in some cases final costs may differ. Only total combined costs for each set of proposals are presented in Present Value terms.
- 5.4 The Government accepts that a number of the proposals set out under the following paragraphs may have the same or similar impacts in terms of costs and benefits if they are implemented or complied with i.e. a number of proposals may lead to projects being able to operate or connect more quickly and this can be quantified in terms of the shadow cost of carbon or in a reduced requirement for alternative CCGT generation. However, the Government considers that this is unavoidable as the efficient operation of the regime is dependent on a number of different proposals being implemented. Without each individual proposal the Government considers that the proposed regime would either be unable to operate or unable to operate as effectively or efficiently as required. The Government considers that it is important to set out, where possible, the costs and benefits of each proposal even if they are repeated elsewhere. However, where this is the case these will only be counted once as an overall cost or benefit of the regime as a whole.
- 5.5 The Government recognises that there is still work to be done, particularly in the more technical areas such as licences and codes which will be the subject of a further consultation process in the summer. This IA attempts to provide as far as possible the costs and benefits and an explanation of how these issues will be taken forward is given in the relevant paragraphs.

Design of Regulatory Regime

5.6 The main costs and benefits laid out in the Summary Analysis and Evidence page are concerned with:

- Performance obligations (delivery and operational availability incentives)

Assumptions

- A maximum of 24 projects (under Rs 1 & 2) over 6 years may need an assessment and setting of a revenue stream (Annex C lists these projects).
- A 1% reduction in the performance of a transmission connection (i.e. which meant that connection to the onshore grid being available 1% less of the time) may lead to costs in terms of shadow price of carbon costs, for a typical 200-500MW offshore wind farm, of between £0.048m - £0.12m / year. Furthermore this same 1% decrease in performance may lead to costs of £0.16m - £0.4m/year in terms of the fuel required for alternative CCGT generation. Table 1 (paragraph 5.22) sets out a range of possible costs for a range of reduced performance for a range of typical offshore generation projects.
- In terms of late delivery of transmission assets, a penalty proportional to the length of the delay based upon the size of the asset will be put in place. The level of this penalty has yet to be decided but the benefits of a three month time saving, for example as a result of delivery incentives, in terms of the shadow price of carbon for a typical 200-500MW offshore wind farm are £1.22m – £3.04m / project.
- There may also be savings in terms of the fuel costs of alternative CCGT generation required to replace the output of a typical 200-500MW project for 3 months which would be £3.94m- £9.85m.
- The total possible savings for one 200-500MW offshore wind project through the delivery and performance incentives in terms of shadow price of carbon savings and reduced need for CCGT generation are £5.37m-£13.3m. There will be an unquantifiable cost for OFTOs seeking insurance and adding a risk premium to their bids proportionate to the incentive regime in place on a case by case basis.
- Incentives will make a positive impact on one in four projects.
- The costs of putting the performance incentives / penalty regime in place are estimated to be c. £5k / project.

Key issues and non-monetised costs and benefits

The revenue stream being set for at least 20 years

5.7 The accompanying consultation document confirms that the revenue stream for projects will be set for a minimum of 20 years. The Government set out the costs and benefits of this proposal in a previous IA²³ and are not repeated here.

End of the regulated revenue stream

5.8 The Government recognises that there are a number of possible scenarios at the end of the revenue period where re-tendering the licence is unlikely to be suitable i.e. where the incumbent generator expects to continue generating for a short number of years only. The accompanying document sets out proposals to address these issues.

5.9 The accompanying document sets out that the position that where there is a demonstrable need for ongoing assets, after the initial 20 year revenue stream Ofgem should take a view on the most sensible course of action (extension or re-tender) taking into account the needs of the generators and its statutory duties at the time. If a decision to re-tender were taken the Government recognises that there would be costs to all parties involved but it does not consider that the costs would be as high as for the initial tender²⁴ as the process would be to

²³ <http://www.berr.gov.uk/files/file43553.pdf>

²⁴ Indicative costs to bidders and Ofgem for the initial tender process were set out in the previous IA

just identify a subsequent regulated revenue stream for operation and maintenance of the assets, including the capital cost of any asset replacement, and ensure that a new OFTO is identified and appointed before the initial licence is revoked. The Government believes that this approach will ensure that any benefits of competition continue to be realised.

- 5.10 The Government considers that this flexible and non-prescriptive approach which will take account of the needs of the generator and Ofgem's statutory duties and will deliver the most cost-effective and efficient solution.

Indexation of the revenue stream

- 5.11 To mitigate against the cost inflation risk and ensure that revenue streams are recoverable in real terms over the life of the asset, the Government is seeking views on including a mechanism for general RPI indexation of costs. The Government considers that this approach may have benefits as it would provide more certainty for the OFTO as it would protect them against inflation whilst also protecting the consumer against deflation. Furthermore the Government considers that if this measure were not included potential OFTOs may be more likely to include risk premiums in their tender bids to reflect inflationary uncertainty which would increase the overall bid costs.

Incremental capacity increases

- 5.12 The costs and benefits following changes to investment levels (either up or down), as outlined in the consultation document are treated as follows:

a. After award of the OFTO licence but prior to construction

- 5.13 Pre-agreed changes to investment levels arising from certain consents that are out of the control of the preferred bidder may be included. However, the Government does not believe that it would be reasonable to require another tender process to take place as the scale of the benefits brought about by the competitive process may not sufficiently outweigh the total costs of the running the tender process. The Government considers that these can be addressed by requiring the OFTO to quote firm prices for incremental work as part of the original bid. However the Government considers that where the generator seeks significant levels of extra capacity at this stage such that the connection agreement onshore also requires re-negotiation, consideration would be given to re-running the tender process. If this were the case, the Government considers that the costs of a further tender process are likely to be lower given the knowledge and experience of the project gained from the original tender exercise.

b. During construction

- 5.14 The Government does not consider that additional costs should be allowed during construction. It believes that at the beginning of the construction phase, all planning consent will have been granted and contractual terms between the OFTO and the generator will be firm. On this basis the Government can see no justification for leaving open the option for negotiation on further capital costs during the construction period. This position creates an incentive for proper planning and research into the cost of the development, ensures contractual firmness and leaves construction risk with the OFTO which the Government considers to be a significant benefit.

c. After construction is completed

- 5.15 The Government considers that changes to the costs, triggered by a change to an onshore connection agreement i.e. when extra re-enforcement work is required that was not anticipated previously or is sufficiently material that it cannot be addressed through a variation to the existing connection agreement, will be considered on a case by case basis by the tender team, with the expectation that if additional costs exceed 20%, then a further tender will be run. The Government considers that this flexible and non-prescriptive approach is more

likely to deliver the most cost-effective and efficient solution in the long run. The Government considers that the benefits of running a further tender process, for projects in these circumstances are more likely to outweigh the costs incurred.

Performance obligations

5.16 The accompanying consultation document sets out a proposed approach to performance obligations for the delivery of transmission assets and operational availability in the form of a penalty of up to 10% of revenue via an adjustment to the OFTO's revenue entitlement. The default level of exposure to financial penalties has yet to be set. The Government considers that an incentive regime is more likely to lead to improved performance which will have benefits for OFTOs, generators and consumers.

a. Delivery incentives

5.17 The Government considers that the delivery incentives proposals will need to ensure that a sufficiently punitive penalty is set to ensure that transmission assets are delivered on time. The Government considers that any penalties should be proportional to the length of the delayed delivery. Furthermore the Government considers that there is benefit in that any such delivery incentive should be capped in order to limit the risk to the OFTO such that in the event of a late delivery, the penalty would not be so severe that the OFTO would be ultimately unable to deliver the project.

5.18 It is also worth noting that there will be savings in terms of delivery as avoidance of, for example, a 3 month delay in the delivery of the transmission asset (which meant that there was no loss of electricity generation) would lead to savings, for a typical 200-500MW wind farm, in terms of shadow price of carbon costs of £1.22m - £3.04m. The savings in terms of 3 months extra fuel required for compensatory CCGT generation would be £3.94m - £9.85m.

5.19 The Government does not consider that there to be significant benefits to the consumer for the delivery of the assets in advance of the delivery date agreed between the generator and the OFTO (i.e. since delivery of the transmission asset would not be of benefit without the generator being available).

b. Operational availability incentive

5.20 The Government considers that the proposed asymmetric approach to penalties in terms of operational availability may help to ensure the delivery of a reliable transmission connection.

5.21 For example, if the performance obligations led to a transmission connection (which enabled generation to the onshore grid) being available 1% more of the time, this may lead to savings in terms of shadow price of carbon costs, for a typical 200-500MW offshore wind farm, of between £0.048m - £0.12m / year. Table 1 sets out the potential range of shadow price of carbon savings over a single year for a number of projects against potential availability improvements as a result of operational availability incentives.

5.22 Furthermore a 1% increase in availability may lead to savings of £0.16m - £0.4m/year/project in terms of the fuel required for alternative CCGT generation.

Increase in availability	1%	2%	3%
Projects			
1	£0.048m- £0.12m	£0.096m-£0.24m	£0.14m-£0.36m
2	£0.096m - £0.24m	£0.19m-£0.48m	£0.28m-£0.72m
4	£0.192m - £0.48m	£0.38m-£0.96m	£0.56m-£1.44m
8	£0.384m - £0.96m	£0.76m-£1.92m	£1.12m-£2.88m
12	£0.576m - £1.44m	£1.15m-£2.88m	£1.68m-£4.32m
16	£0.768m - £1.92m	£1.54m-£3.84m	£2.24m-£5.76m
20	£0.96m - £2.4m	£1.92m-£4.8m	£2.8m-£7.2m
24	£1.15m - £2.88m	£2.30m-£5.76m	£3.36m-£8.64m

Table 1: Potential shadow price of carbon savings per year realised via a range of increases in availability of a transmission connection for a number of offshore generation projects.

- 5.23 The Government considers that the proposed incentive scheme for delivery of a transmission connection may have significant benefits as it will be designed to improve the quality of service for consumers by penalising a company for poor performance, but not rewarding it for over-performance. Poor performance is perceived to be detrimental to the interests of consumers, whereas over-performance does not always provide consumers with additional benefits. However, there are some areas where consumers may benefit from over-performance against a target (e.g. improved network reliability by electricity distribution companies or reductions in electrical losses).
- 5.24 Unlike onshore networks, offshore transmission networks will not have any directly connected demand customers. In the short to medium term, while there are few offshore transmission networks serving a small percentage of overall generation capacity, the material effect on demand customers of offshore transmission network performance is likely to be negligible. However, the effect on the attached generation customer is likely to be significant. Should 33GW of offshore generation be served by such networks, however, the material effect on demand consumers will become more significant.

Other non-monetised costs and benefits and other issues

Reporting arrangements

- 5.25 The consultation document sets out the Government proposals to enable the establishment of a framework for regulatory reporting based upon the arrangements that have been developed for onshore transmission and distribution companies, where failure to report in accordance with the reporting requirements is a breach of the licence.
- 5.26 The Government considers that there may be benefit in adopting this approach as it will ensure that the regime will be monitored effectively. However, the Government recognises that annual reporting, for example, may require a significant resource commitment by Ofgem and companies alike. Given the simpler nature of OFTO businesses it is not clear that imposing a similar burden of detailed annual reporting upon offshore transmission companies is appropriate given the longer term approach to revenues as set out earlier.
- 5.27 The Government is keen to ensure that the regulatory burden of such arrangements strike an appropriate balance between the need to monitor the regulatory regime effectively while ensuring that the reporting arrangements do not provide an onerous regulatory burden upon licensees.

Generator requirements

- 5.28 The Government believes that an OFTO should be remunerated on the basis that the offshore transmission system will meet the generators functional requirements and be fit for purpose.

The Government considers that there is benefit, in terms of keeping costs to a minimum, in extending the onshore arrangements in terms of offshore in areas such as an OFTO being required to provide additional capacity or services, as it does not believe that there is anything in the nature of offshore transmission to justify different arrangements.

Competitive Tender Process including Transitional Arrangements

5.29 The costs and benefits laid out in the Summary Analysis and Evidence page are concerned with:

a. Transitional tender process

- Costs and benefits of an OFTO of last resort mechanism under the transitional arrangements
- Costs to generators and potential OFTOs being required to make financial commitments as a result of the tender process (the costs that are actually incurred by Ofgem).

b. Enduring tender process

- Costs to generators and potential OFTOs being required to make financial commitments as a result of the tender process (the costs that are actually incurred by Ofgem)

Assumptions

- A maximum of 24 projects (under Rs 1 & 2) may be put out for tender under the transitional and enduring arrangements (Annex C lists these projects). It has been assumed that these projects will be spread out evenly over 6 years. Of these 24 projects up to a total 7, between 2009 - 2011. may be tendered under the transitional tender arrangements.
- Two projects (in Year 2 and Year 4) require the OFTO of last resort mechanism to be used which will enable typical 200-500MW offshore wind farm to connect a maximum of 12 months more quickly.
- The cost of Ofgem developing a revenue stream under the OFTO of last resort mechanism is estimated to be c. £50k / project.
- The savings if a typical 200-500MW offshore wind farm is connected 3 months more quickly in terms of the shadow price of carbon are £1.22m – £3.04m / project.
- The savings in terms of the fuel costs of alternative CCGT generation required to replace the output of a typical 200-500MW project for 3 months would be £3.94m- £9.85m.
- The costs and benefits of the proposed compulsory transfer scheme were included in a previous IA and have not been included here.
- Please note that the wider costs and benefits of the competitive tender process to potential OFTOs i.e. bid costs and the impact on overall transmission connection costs were set out in a previous IA²⁵ and are not included again here.

Transitional tender process

Overview of transitional tender process

5.30 The consultation document sets out the four stage tender process, which includes an optional Best and Final Offer stage, under the proposed transitional arrangements. A key difference to the enduring tender process is the inclusion of a mechanism for the appointment of an OFTO of last resort. The Government is aware that the tender process being implemented is a new process and it therefore considers that it is important that there should be a degree of flexibility particularly within the transitional arrangements. The Government considers that this is more likely to lead to an effective and efficient process.

5.31 The Government considers that it is important that there is an open and constructive dialogue with those projects likely to be involved in the transitional arrangements. The proposals to work with the relevant generators and developers over the coming months are more likely to build confidence through a greater understanding of the process. The Government considers that this is more likely to lead to an efficient and effective tender process which may reduce

²⁵ <http://www.berr.gov.uk/files/file43553.pdf>

the time taken to run tenders. This may mean that projects may connect sooner which may reduce costs and have significant savings in terms of shadow price of carbon and a reduced need for alternative CCGT generation.

Key issues and non-monetised costs and benefits

5.32 The following paragraphs set out the key issues concerning the costs and benefits of the proposed transitional tender arrangements.

OFTO of last resort

5.33 An OFTO of last resort mechanism would remove the need for a further tender process (following two unsuccessful attempts to appoint an OFTO). This would mean that a further tender process (of up to 12 months) would not have to be undertaken. This may lead to benefits in terms of savings of £20.64m - £51.6m / project based upon:

- Costs of alternative CCGT generation for one 200-500MW project for 12 months would be: £15.76m- £39.4m / year
- Shadow cost of carbon savings for one 200-500MW project for 12 months based on 2008 prices would be: £4.88m – £12.2m / year
- The cost of Ofgem developing a price control and assessing a revenue stream for a transitional project would be c. £50k.

5.34 There may be benefits in that the generator would have the comfort that if the transitional tender process does not identify an OFTO, Ofgem would seek to award the OFTO licence to the offshore developer. This may mean that the delays to a project would be minimised.

5.35 It must be emphasised that Authority may decide not to award a licence to an OFTO of last resort where it would not be in the interests of consumers to do so. The award of an OFTO of last resort will be considered on a case by case basis. The Government considers that this approach will have benefits as consumer's interests would be protected and it would put the onus on the generator to develop a project that is attractive to potential OFTOs and will enable the delivery of an efficient and economic transmission connection.

5.36 Should the OFTO of last resort be required there may be costs to the generator in that its project may be awarded a licence or be awarded a revenue stream that is not as attractive because the Authority's valuation (and revenue allowance) supporting such a licence award would not have the benefit of the evidence that would have been available through a successful competitive tender process.

Pre-conditions for transitional projects

5.37 The Government considers that the approach that full financial close (or equivalent), to enable a project to enter the transitional tender regime, should be maintained. However, developers are asked to contact Ofgem with detailed proposals of their project's expected status to enable Ofgem to assess projects and ensure that only those that are appropriate are tendered under the transitional arrangements (see Appendix 8 of the consultation document for details). The Government believes that while there will still be competition in the transitional tender process the scope of the assets that will be subject to the benefits of competition may be reduced i.e. the transmission connection may already have been built but the Government recognises that this may already have been the subject to competition. If the scope of the assets being tendered is reduced, it is more likely that the overall scale of benefits to consumers achieved through competition will be reduced. The Government therefore considers it is important that only those projects that fit the criteria are considered under the transitional arrangements.

5.38 The Government considers that any relaxation of the conditions increases the risk to consumers but reduces the risk of major delay to projects that are developed but have not

reached full financial close or equivalent. The potential costs of delaying projects in terms of shadow price of carbon costs and alternative CCGT generation are set out above.

- 5.39 The Consultation document sets out Ofgem's approach to assessment of the Regulatory Asset Value (RAV) of the constructed transmission asset or that which will be constructed ahead of it being tendered in the transitional regime. The Government considers that the approach in using standard techniques currently used in reviewing network price controls will be beneficial and deliver an appropriate assessment of the RAV.
- 5.40 The Government considers that approach to moving this process forward as set out in the consultation document will be beneficial in ensuring that those who are eligible for the transitional process have a clear understanding of the process and requirements.

Ex-ante comfort on funding

- 5.41 The Government re-affirmed its proposal that projects will receive the greater of 75% of the ex-ante RAV estimate and 100% of the efficient economic costs incurred. The Government believes that this approach has significant benefit in that it provides both an appropriate balance of risk between the developer and consumers (who would be funding this guarantee) and also a strong incentive on developers to ensure that all costs incurred are efficient. An ex-ante guarantee higher than 75% would also require a more onerous, costly and closer scrutiny of the estimates provided by generators which may increase costs.
- 5.42 Furthermore the Government considers that this approach offers significant benefits in terms of giving confidence and certainty to those projects that fall into the transitional category. This is more likely to ensure that projects will continue to be taken forward sooner as developers will have greater certainty and this may enable projects to reach financial close more quickly. This may, therefore, have benefits in terms of shadow price of carbon savings and a reduced need for alternative CCGT generation

Transfer of assets

- 5.43 The Government intends to require that developers set out the commercial terms for transferring the offshore transmission assets as part of the conditions for the transitional tender process. We consider that this additional clarity will be of benefit to any transfer of assets that is required and do not consider that these costs will be significant. Consequently we believe that costs and benefits of the proposed transfer scheme were set out in a previous IA²⁶ remain valid and have not been repeated here.

Enduring Tender Process

Key issues and non-monetised costs and benefits

- 5.44 The following paragraphs set out the key issues concerning the costs and benefits of the proposed transitional tender arrangements.

Pre-conditions for the tender process

- 5.45 The Government believes that the approach to the pre-conditions for the tender process may have significant benefit as it considers that a project is less likely to fail if, at the time a tender process is initiated, certain conditions have already been met. Ofgem propose that these include the signing of a connection offer or the developer providing the necessary financial commitment to initiate the tender process and the developer having lease arrangements with The Crown Estate. The Government also believes that this approach is more likely to give the GBSO, potential OFTOs and Ofgem the confidence that once a tender process is initiated, it will successfully deliver an OFTO to provide a transmission connection. The Government

²⁶ <http://www.berr.gov.uk/files/file43553.pdf>

considers that this approach is less likely to lead to projects failing once the tender process has started and will therefore reduce the likelihood of incurring unnecessary costs.

Consents, leases and seabed surveys

5.46 The Government considers that preparatory works (e.g. consenting) being undertaken by the generator until the selection of a preferred OFTO bidder, who will then take on this work, may have significant benefits as it is more likely to reduce the time taken to develop a project than if this preparatory work were delayed until an OFTO had been appointed following a tender process. The benefits of a three month time saving in terms of shadow price of carbon savings and less requirement for fuel for alternative CCGT generation are set out above. There may be additional cost savings if potential OFTO bidders require common preparatory work as they may contract jointly for this work and the successful bidder reimbursing the proportion of the costs to the unsuccessful bidders once the process has concluded. This joint contracting may lead to lower costs as information could be shared between bidders rather than them each carrying out the same work separately. A further benefit will be that this may also help to ensure that there is parity of information which will help increase transparency and ensure fair competition during the tender process.

5.47 The Government considers that there may be benefits in terms of time savings if the generator / developer were mandated to do certain works in relation to cable routes (e.g. environmental impact assessments), as part of the consents process, prior to the tender process being run rather than waiting until the tender process was initiated where the winning OFTO would then undertake these works. These benefits, if they enabled projects to connect three months more quickly, in terms of shadow price of carbon and reduced need for alternative CCGT generation are set out above. However, there may be a risk that there may be extra costs if these works had to be repeated if the winning OFTO did not consider that those works had been carried out to the required standard. There may also be costs in terms of confidentiality if a single seabed survey is shared between bidders.

Generator affiliate

5.48 The Government considers that allowing generator affiliates to bid in the tender process may increase the amount of competition which may lead to lower costs for transmission assets. However, it is recognised that issues of business separation must be in place to ensure that no unfair competitive advantage is obtained and Ofgem will develop safeguards within the tender process. The Government recognises that there will be costs to potential OFTOs in ensuring adequate business separation but it does not consider these to be overly burdensome given the potential impact in terms of ensuring the integrity and competitiveness of the tender process.

Streamlining the tender process

5.49 An overview of the tender process is set out in the accompanying consultation document. The Government considers that the proposed four stage process will ensure that most effective connection solution is obtained whilst allowing significant competition and the benefits that such competition will bring.

5.50 The Government will seek ways to ensure that these costs of the tender process are kept to a minimum for all parties. A lower cost transmission connection solution as a result of a competitive tender process is more likely to benefit all stakeholders.

5.51 The Government considers that the detail of the tender process will continue to evolve in the light of the consultation on the draft tender regulation and tender documents. Further information is available in the accompanying consultation document. The economic costs and benefits of the proposals will be kept under review as this process moves forward.

Annual Tender Windows

- 5.52 The Government believes that annual tender windows may help facilitate an orderly process and should not limit the time when an offshore generator can apply for a connection. This would not introduce significant delays because the dates the window opened would be publicly available information and this would be scheduled for the same time each year. As such developers should be able to factor into their plans, compliance with the proposed pre-conditions that need to be satisfied to enable their project to be included in the EOI when the tender window is opened. The Government will commit to keep this issue under review as experience under the transitional tender arrangements is gained.
- 5.53 The Government considers that the use of tender windows may have benefits in terms of co-ordination of offshore transmission connections. For example, a tender window mechanism may allow a number of projects to be tendered for together i.e. a single OFTO bids for two or more projects in the same bid. This may reduce a potential OFTO's own costs and potentially the costs of the transmission connection.
- 5.54 Furthermore, the proposal to retain flexibility to commence tenders at different points where necessary will enable the most effective solution for the enduring tender process to be delivered.

Licence Drafting

- 5.55 The costs and benefits laid out in the Summary Analysis and Evidence page are focused on the key changes to the:
- Costs to Government and industry of developing the proposed changes to the licence conditions;
 - Benefits of parties complying with the transmission licence conditions enabling offshore renewable generation to connect.

Assumptions

- A total of 24 projects (under Rs 1 & 2) will require an OFTO and the 3 existing onshore TOs will be required to comply with the proposed changes to transmission licences. (Annex C lists these projects).
- Offshore licence conditions should replicate onshore licence conditions as closely as possible, except where there is a good reason for differences.
- Enabling a regulatory regime that will facilitate the connection and efficient operation of 7GW of offshore renewable generation. This will have benefits in terms of cumulative shadow price of carbon savings of c. £574m by 2013 (an average of c. £95m/year until 2013) (see Table 2 in paragraph 8.3 for further detail).
- The possible additional costs of fuel required for CCGT generation in lieu of 1 GW of offshore wind generation in 2008 is £78.8m/year. If the currently planned 7GW of offshore wind were not developed this cost would rise to £550m / year by 2013 (an average of £289m / year until 2013. See Annex C for further detail).
- OFTOs will be able to operate assets worth up to £2.5bn - £3bn (for 24 projects) and generators being able to connect their assets to the grid. If these requirements are not complied with there is the potential for significant sunk costs and stranded assets.

Summary

- 5.56 The consultation document sets out an overview of the proposed approach to the restructuring of the standard conditions of the electricity transmission licence in order to accommodate the introduction of a regulatory regime into offshore areas. Section 90 of the EA 2004, allows the Secretary of State to make modifications to, amongst other things, transmission and distribution standard licence conditions (SLCs) which he considers appropriate for purposes connected with offshore electricity transmission. This process of amendment of the licence will be necessary for the facilitation of the new offshore transmission regime where change of the existing licence is required to tailor it for to offshore activities.

Previous consultations

- 5.57 In the joint Ofgem/BERR January 2008 Policy Statement, the Government proposed to insert a new section (Section E) into the transmission licence to reflect the specific requirements and obligations that should only apply to offshore transmission owners (OFTOs) and not to activate sections of the existing licence conditions that are not relevant to OFTOs. It also proposed that holders of offshore electricity transmission licences should not also hold existing electricity transmission licences. Where affiliated companies with a common parent company held both offshore and existing electricity transmission licences, such companies should be separate legal entities.
- 5.58 The Government considers that this approach is appropriate and responses to that consultation did not bring forward any information to suggest otherwise. The Government therefore intends to bring forward proposals for modifications on this basis.

Structure of licence

5.59 The Government considers that its approach as set out in the consultation document facilitates its overall policy approach in that offshore licence conditions should replicate onshore licence conditions as closely as possible, except where there is a good reason for differences. The Government also believes that the approach allows suitable flexibility in reflecting the obligations of OFTOs and the extension of the role of the GBSO, while minimising the changes for existing licensees.

Transmission licence obligations

Seven Year Statement (SYS)

5.60 The Government believes that there would be benefit in NGET including network information that would assist an offshore developer in its SYS publication as the information provided would allow an offshore developer to better understand opportunities for offshore power station development. Previous IA estimated the costs of NGET providing this information to be between £30k - £60k. However, this will be dependent on the amount and level of detail required and there will be a requirement to define the specific obligations in respect of offshore transmission developments.

Connection offers

5.61 The Government believes that the proposal that NGET should provide Ofgem with information equivalent to an NGET Construction Application (as defined in the STC) for use in the tender process may have benefits as it will better facilitate consistent treatment of OFTOs (and prospective OFTOs) compared with TOs who are designing extensions to the existing transmission system. The Government considers that this may encourage competition which may reduce overall costs.

Performance incentives

5.62 The Government considers that part of the OFTO performance incentive should relate to the annual availability of an offshore transmission system. The potential costs and benefits to generators, OFTOs and consumers are outlined at paragraphs 5.16-5.24.

Overlay of licence areas (updated but Ofgem to check)

5.63 The Government proposes to allow the offshore transmission licence areas up to the point of connection with an onshore system to overlay the licence areas of onshore transmission licensees. The Government acknowledges that there is a need for the interface point between an offshore transmission system and the onshore system to have a clearly defined and separable ownership boundary and that typically this would be at a substation. Practically, such a substation would need to be located onshore and within one of the onshore transmission licence areas. The Government considers that this approach to enable overlapping transmission licence areas will be beneficial in terms of simplicity of approach for all transmission licensees.

Relationship between NGET and OFTO subsidiaries

5.64 The Government notes that the CUSC arrangements permit NGET to share information with its subsidiary companies that it is prevented from disclosing to third parties. The Government considers that the sharing of such information could provide a subsidiary OFTO company with an unfair advantage. It therefore considers that its proposal to introduce a prohibition on NGET forming OFTO subsidiary companies will help to ensure that the competitive regime being introduced is fair and transparent.

General costs and benefits of the proposed changes

5.65 The consultation document sets out in more detail the changes, that following an initial review of the standard conditions of the electricity licence, that are required.

- 5.66 The Government considers that the proposed changes are those that are required to accommodate the functions and obligations of new offshore electricity transmission licensees who wish to own and maintain offshore transmission networks.
- 5.67 The Government accepts that there will be costs to potential and existing OFTOs in complying with the proposed changes. However, as stated previously the Government intends to minimise the changes that are required. It believes that in doing so it will help to keep costs down whilst ensuring that the licenses are fit for purpose and enable new OFTOs to own and maintain offshore transmission networks. The Government considers that without the proposed changes to licenses, offshore generation projects will be unable to proceed.
- 5.68 The Government considers that the costs of complying with the license conditions should be no more onerous than the costs of complying with the onshore TO license requirements offshore. This should ensure that the proposed changes to the licenses do not become a barrier to the entry of new TOs into the offshore transmission market.
- 5.69 The Government considers that there are significant benefits to an OFTO in complying with the proposed license conditions as compliance will enable it to operate legally. An OFTO who is not awarded a transmission license will not be able to operate legally and therefore be unable to provide offshore transmission services to NGET.
- 5.70 The Government considers that there are wider costs and benefits associated with the proposed changes. There is a need to put in place sufficient regulatory controls to ensure that the transmission system as a whole is able to operate safely and securely. A less secure grid in which faults may be more likely to occur may lead to a less efficient offshore transmission system. As set out in Annex C this may lead to costs in terms of shadow price of carbon and a greater need for alternative CCGT generation. This may also increase the costs to OFTOs in terms of fault repairs which may lead to higher overall costs which may lead to a reduction the amount of offshore renewable generation.

Next steps

- 5.71 Following its February consultation on licensing, Ofgem has set up an industry working group to assist in developing licence drafting. This group consists of the existing transmission licences (NGET, Scottish Power Transmission and Scottish Hydro Electric Transmission Ltd), representatives of offshore developers and Distribution Network Operators. The group is chaired by Ofgem.

Technical Rules and Industry Codes

5.72 The costs and benefits laid out in the Summary Analysis and Evidence page are focused on:

- Benefits of parties complying with the technical rules and industry codes enabling offshore renewable generation to connect which will lead to savings in terms of shadow price of carbon and reduced need for alternative CCGT generation.
- In terms of the Grid Code, NGET has estimated that transmission system investment costs of about £55 million would be necessary if generators were able to avoid large power station requirements. There would be additional frequency response costs of £50m per annum. The benefits of the proposed approach are therefore £55 million one off in system investment costs being paid and £50 million pa in frequency response costs not being avoided by generators (see paras 5.82-5.84).

Assumptions

- Enabling a regulatory regime that will facilitate the connection and efficient operation of 7GW of offshore renewable generation. This will have benefits in terms of cumulative shadow price of carbon savings of c. £564m by 2013 (an average of c. £95m/year until 2013) (see Table 2 in paragraph 8.3 for further detail).
- The possible additional costs of fuel required for CCGT generation in lieu of 1 GW of offshore wind generation in 2008 is £78.8m/year. If the currently planned 7GW of offshore wind were not developed this cost would rise to £550m / year by 2013 (an average cost of £289m / year until 2013. See Annex C for further detail).
- OFTOs will be able to operate assets worth up to £2.5bn - £3bn (for 24 projects) and generators being able to connect their assets to the grid. If these requirements are not complied with there is the potential for significant sunk costs and stranded assets.

Summary

5.73 The key areas in which the Government proposes to make changes are concerned with:

- Grid Code
- STC
- GBSQSS
- CUSC
- BSC

5.74 In developing these proposals the Government has sought wherever possible, to extend the current transmission arrangements that are defined in the industry codes and technical standards offshore. However, there are some areas of both the arrangements for offshore generators and the arrangements between transmission licensees where it has not been possible to directly apply the current arrangements offshore. The accompanying consultation documents sets out in more detail where the Government considers that there is a need to introduce differences across the arrangements defined in the Relevant Documents as set out in the consultation document. These groups consist of the:

- **'Technical Rules'** - Arrangements that set out the technical requirements for parties providing or using parts of the GB transmission system;
- **'User Facing Relevant Documents'** - Arrangements (other than technical rules) between the GBSO and a generator connected to an offshore transmission system
- **Transmission Licensee Relevant Documents** - Arrangements (other than technical rules) between transmission licensees
- **Transmission Licence Obligations** - Arrangements (other than technical rules) set out in the transmission licence. These are set out in paragraphs 5.60-5.71 in this IA.

- 5.75 These issues have been taken forward since the January 2008 Joint Policy Statement and Ofgem's Regulatory Policy Update via industry working groups facilitated by Ofgem and National Grid.

Force Majeure

- 5.76 The Government is also considering whether the current definition of Force Majeure in the Relevant Documents is appropriate for offshore. In particular we have reservations about the relevance of "storms" as a Force Majeure circumstance in the offshore environment.
- 5.77 The Government believes that generators and OFTOs will benefit from the definition of what constitutes a force majeure event taking into account the range of conditions that are likely to be experienced in an offshore environment. For example, the current definition used in the industry codes includes "storms" as a force majeure event. The Government does not consider this to be an appropriate circumstance offshore as it considers that sub-sea cables, for example, are less likely to be at risk of damage from 'storms' than onshore overhead lines.
- 5.78 The Government expects that the costs of this will be minimal but would welcome views on this point and any evidence from other offshore arrangements that can be provided.
- 5.79 The following paragraphs set out, where possible, the broad quantitative and qualitative costs and benefits for each of the key proposals and the approach to the proposals for addressing the changes required. Further more general issues surrounding the costs and benefits to the wider approach, to the required changes, the Government is taking can be found at paragraphs 5.125-5.133 and in Annex B.

Technical Rules

- 5.80 We consider that the Technical Rules are defined in the Grid Code, GBSQSS and parts of the STC.
- 5.81 The Consultation document sets out the Government's views on the need to introduce differences from the onshore arrangements in the Technical Rules, as part of the offshore transmission arrangements. The Government's views in respect of the broad costs and benefits of the proposed differences for the Grid Code and the GBSQSS are set out in the following sections.

a. Grid Code

10MW threshold for large power station

- 5.82 Following work undertaken by the Grid Code sub-group the Government proposes that the definition of Large Power Station should be amended to include power stations of 10MW or above that are connected to an offshore transmission system. It also proposes that the definition of Small Power Station should be amended to include power stations of less than 10MW that are connected to an offshore transmission system.
- 5.83 The Government considers that these proposals will have a benefit as it will prevent generators from registering a large wind farm as a number of Small Power Stations that would be exempt from technical requirements, would match the offshore arrangements with the existing threshold that applies in the SHETL area and would also facilitate development of small, prototype generation technologies as the de-minimis size threshold would ensure that there was not a barrier to development of new generation technology.
- 5.84 The Government noted there may be issues associated with large volumes of generating plant that was not required to have the minimum technical capability defined in the Grid

Code and sought additional information from NGET. Whilst NGET was not able to quantify the impact of large volumes of generating plant being unable to maintain a minimum active power output profile as system frequency falls or being unable to remain connected and operating during system disturbances. However, NGET has estimated that transmission system investment costs of about £55 million would be needed to make up for a shortfall in generating plant reactive power capability and there would be additional frequency response costs of £50m per annum should offshore generators be able to avoid frequency response capability requirements.

Definition of offshore power park module

- 5.85 The Government considers that its proposal to allow offshore generators to register more than one string of wind turbines connected to a single busbar section as a single Power Park Module (and therefore as a single BM Unit) will have a benefit as the current definition of Power Park Module only allows an offshore generator to register one string of wind turbines as a Power Park Module. The Government considers that this proposal is likely to reduce compliance costs for offshore generators.

Reactive power capability

- 5.86 The Government considers its proposal to define reactive power capability requirements for offshore generators in line with the Grid Code sub group's recommendation may have benefits in terms of reducing costs and ensuring that the most efficient solution for the provision of reactive power is achieved.
- 5.87 The Government considers that OFTO costs of providing the required reactive power capability range should be recovered through the offshore generator's charges (and not recovered on a non-locational basis as other transmission licensee owned reactive compensation plant). This will ensure that offshore and onshore generators are liable for similar costs for the provision of reactive power capability.
- 5.88 The Government considers that this proposed difference should not increase the costs to an offshore generator compared to current arrangements that are applied to offshore generators at the point of connection with an onshore system.

Fault ride through capability

- 5.89 The Government proposal that offshore generators should be able to choose whether to comply with the fault ride through capability requirements as defined for onshore generators or to comply with a generic fault ride through capability requirement defined for Offshore Grid Entry Points (which is intended as a proxy for the current onshore requirements).
- 5.90 The Government considers that at the initial connection offer stage, the offshore generator may not have sufficient firm information about the design of the offshore transmission system to properly interpret the fault ride through capability requirements that are defined in terms of faults on the onshore transmission system.
- 5.91 NGET has provided a generic requirement based on its interpretation of assumptions about likely offshore transmission system configuration and data from generating plant manufacturers. This did not identify any risks to transmission system operation arising from such flexibility on the basis that the generic requirement is intended as a proxy for the current onshore requirement.
- 5.92 The Government considers that this flexible approach, which was recommended by the Grid Code sub-group, will benefit offshore generators by providing an option that gives certainty about the nature of the capability requirement before the design of the connection is finalised, without increasing the risks to the safety and security of the wider transmission system.

Safety co-ordination arrangements

- 5.93 The consultation document sets out the its views on the recommendation from the Grid Code sub group in respect of the amendments needed to the safety co-ordination arrangements defined within Operation Code ('OC') 8 of the Grid Code. This issue related to the alignment of safety coordination to Scottish standards for those generators connecting to the Scottish transmission system or to England and Wales standards for those connecting to the England and Wales transmission system.
- 5.94 The Government considers that following consultation with the Health and Safety Executive, NGET's proposed approach that two further appendices are added to OC8 could lead to possible safety risks. The Government considers that the original Grid Code sub group recommendation to amend OC8A and OC8B whilst difficult is not impossible. The Government believes that amending existing text would provide a more effective and understandable solution than developing new appendices.
- 5.95 Ofgem have reviewed the proposed drafting changes to the Grid Code and this drafting can be found with the consultation document at separate Annex 6.

b. GBSQSS

Offshore Generation Connection Criteria

- 5.96 The Government considers that there is a need to develop the basis of the offshore security that was defined in the previous decision document. Further analysis work (by SEDG Centre and reviewed by NGET) has informed a recommendation from NGET on security criteria that were not covered by the original decision. This further analysis also revealed an error in previous study work. The revised results have informed a recommendation from NGET for a change to the previous decision in respect of security requirements at the offshore transmission substation (i.e. that redundancy should be required for connections to power stations of 90MW or above and not limited to 120MW and above as previously concluded).
- 5.97 The scope of the offshore security standard is limited to wind farms of 1500MW located 100km from the connection point to the onshore system. The changes being developed to the GBSQSS will be similarly limited. This means that the GBSQSS would not be applicable (without further review) to the design of transmission connections for R3 projects.
- 5.98 The Government does not consider that it is in a position to recommend that a decision is made in respect of a change to the basis of the offshore security standard until additional further analysis work is carried out as set out in the consultation document.

GBSQSS – Offshore Power Station Demand Connection Criteria

- 5.99 The Government believes that the security requirements for offshore power station demand are more onerous than the generation connection criteria and may drive the need for additional transmission system investment (e.g. require redundancy in the cable circuits). The Government considers that there may be benefits in terms of lower costs by requiring the generator to provide back-up supplies to the offshore platform (e.g. a diesel standby generating unit) unless the design of the offshore transmission system (to meet the generation connection criteria) provides redundancy. The Government would welcome information about the costs of establishing and maintaining standby plant on an offshore platform.

User Facing Relevant Documents

a. Balancing and Settlement Code (BSC)

- 5.100 The Consultation document sets out the approach in which Elexon were asked to consider changes which may be required to the BSC²⁷ to extend the code to apply to offshore generators. As the code owner, the Government believes that they are best placed to review the existing code and identify areas in which changes may be required.
- 5.101 Ofgem have reviewed the proposed drafting changes to the code and this drafting can be found with the consultation document at separate Annex 2.
- 5.102 The Government considers that the changes needed to the BSC are minimal and will not significantly impact on the overall costs but may impact on the allocation of such costs. The Government believes that the current modification process is suitable to enable any future changes required to the BSC to be managed effectively.

b. Connection and Use of System Code (CUSC)

Early decommissioning

- 5.103 The Consultation document sets out the Government's view that the onshore User's right to require transmission assets to be removed from land owned by a User within six months of a notice to disconnect should not be extended offshore. Instead the Government considers that an OFTO should be able to rely on its leasing agreement with the owner of the offshore platform, which could set out the arrangements in the event of a User decision to issue a notice to disconnect under the CUSC.
- 5.104 The Government considers that this proposal may reduce costs as OFTO may be less likely to factor into their costs a premium for the risk of early and rapid decommissioning of offshore transmission assets. The Government also believes that this approach may have benefits in that OFTOs will have increased certainty that their assets may still be used by another generator as they will not have to be removed from land owned by a User within 6 months if the offshore generator no longer requires the use of the assets. However, the Government recognises that this may lead to costs in terms of maintaining transmission assets that are no longer required by the original User if they are not subsequently used by another generator.
- 5.105 The Government proposes in the consultation document that work to investigate the appropriate balance between these benefits and costs be progressed as part of the transmission licence development work. The Government's position that CUSC arrangements onshore to enable a generator to trigger early and rapid decommissioning of transmission assets are not extended offshore did not form part of the work request to NGET and so it is not included in the draft CUSC change proposals in Annex 3 of the consultation document

Transmission Licensee Relevant Documents

a. STC

- 5.106 The Government reconvened the STC working group in February 2008 to assist in developing proposals for extending the STC arrangements to accommodate offshore transmission licensees. The consultation document sets out detail of the working group's recommendations.

STC Governance

²⁷ A copy of the BSC is available from Elexon's website at [[insert web link]].

- 5.107 The Government proposes that the STC governance arrangements need to be changed to accommodate OFTOs as STC Parties. The current STC governance was designed to administer a code with only three parties and it is likely that there would be logistical difficulties in using current STC governance arrangements (e.g. all STC Parties can have up to two representatives on the STC Committee). Furthermore, the Government considers that of greater concern is that, under current arrangements, each STC Party must agree to the admission of a new entrant and the Government considers that this may be a barrier to entry.
- 5.108 The Government considers that the proposed changes to STC governance arrangements strike the right balance between ensuring an effective and efficient governance regime and enabling new entrants i.e. OFTOs to contribute and play an active part in the governance arrangements. The Government is keen to ensure that for new entrants the regulatory burden in taking an active role in industry governance is not excessive.

Operation of the offshore transmission system

- 5.109 The Government notes that the STC allows STC Parties to sub contract for services needed to comply with STC obligations. The Government considers that this right may be particularly valuable for new entrants. Any unnecessary barriers to entry may lead to fewer bidders in the tender process which may reduce the amount of competition in the market which may lead to higher overall transmission costs and consequently less offshore renewable generation. The Government considers that the STC should not prevent an OFTO from subcontracting with NGET for offshore system control services.
- 5.110 The Government considers that the very minor costs of making the required changes to the STC to will be significantly less than the potential benefit of the additional choice made available to new market entrants.

Two stage construction application process

- 5.111 The Government proposal that the STC Construction Application arrangements need to reflect the proposed two stage connection application arrangements for offshore generators will have benefits in making the STC arrangements consistent with the proposed CUSC Connection application process. The Government considers that the costs of the required changes to the STC Construction application arrangements will be insignificant compared to the benefits that will arise from the proposed two stage connection application process.

NGET obligation to provide Ofgem with an NGET Construction Application

- 5.112 The Government believes that the proposal that NGET should provide Ofgem with information equivalent to an NGET Construction Application (as defined in the STC) for use in the tender process may have benefits as it will better facilitate consistent treatment of OFTOs (and prospective OFTOs) compared with TOs who are designing extensions to the existing transmission system. The Government considers that this may encourage competition which may reduce overall costs.
- 5.113 The Government also believes that this approach may have the benefit of ensuring consistency at the start of the tender process and the application made to the preferred bidder by NGET under the STC (NGET Construction Application).

Standard arrangements for interface between OFTO and GBSO

- 5.114 The Government considers that there may be benefits in terms of efficiency and therefore lower costs if the contractual arrangements between GBSO and OFTO, are standardised where possible within the STC. The Government considers that this may have a benefit in terms of providing certainty of process if there are a number of new OFTOs interfacing with the GBSO.

- 5.115 The consultation document sets out the areas in which it considers that standard templates should be developed. The Government believes that it may be more efficient for NGET's processes if the contractual requirements are standardised where possible.
- 5.116 The Government considers that there may be merit in defining a default ownership boundary between an offshore transmission system and an onshore transmission system as set out in the consultation document. The Government considers that its proposal that NGET should be obliged to define the default ownership boundary for each connection request as part of the NGET Construction Application will help to ensure that a workable overall connection process is delivered.

Investment Planning

- 5.117 The Government does not consider that there is significant benefit in OFTOs being required under the STC to have or maintain transmission investment plans or routinely participate in joint planning meetings as each OFTO will be providing assets which reflect specific customer(s) requirements with a fixed price control based on the design of the offshore transmission at the pre-construction stage. Whilst the cost of these requirements such as providing nil returns and attending regular meetings are minimal, there will be benefits in terms of improved efficiency of the existing arrangements by only requiring the participation of the relevant parties.
- 5.118 The Government, however, considers that there will be benefit in OFTOs receiving relevant information from other transmission licensees' investment plans and being able to raise any issues (e.g. that plans would require consequential works on an offshore transmission system) before planned works are progressed. It is possible that works on another transmission system may trigger works on an offshore transmission system and such impacts should be considered at the planning stage. This will be beneficial to all stakeholders as it will facilitate the development of the most efficient investment option.

Cost recovery arrangements for works consequential to another transmission licensee's system development works

- 5.119 The Government proposes that a mechanism is needed to enable the recovery of OFTO costs associated with works required as a consequence of other transmission licensee system development works. The Government considers that, unlike onshore where price control reviews occur every 5 years which enable these costs to be recovered, there will be significant benefits in terms of cost savings by enabling an appropriate mechanism which will minimise the need to re-open OFTO price controls. The benefits of having a 20 year revenue stream offshore as opposed to 5 yearly reviews as happens onshore were estimated in a previous IA to be £20.3m²⁸.
- 5.120 The Government will consider possible options for OFTO cost recovery for works on an offshore transmission system that are triggered by onshore transmission system development works such as:
- Circumstances that would be grounds to reopen an OFTO price control.
 - Amending the STC to require the onshore transmission licensee to fund the offshore transmission works as part of its investment plan (costs would be recovered through onshore price control arrangements).
- 5.121 The Government considers that this approach in which the generator and potential OFTOs are encouraged to co-operate, which will allow account to be taken of the additional design and development work required offshore and allows information relevant to the initial connection offer to be available to potential OFTOs is more likely to deliver a connection

²⁸ <http://www.berr.gov.uk/files/file43553.pdf>

offer which is acceptable to all stakeholders. This is more likely to reduce costs which is more likely to deliver renewable generation.

- 5.122 The Government considers that there may be costs to developing a different approach to that which is used onshore. This may mean that projects are delayed with consequential costs in terms of shadow cost of carbon savings. There may also be costs if the initial connection offer is disputed and goes to determination and as a result the start of the tender process is delayed.

Technical Standards

- 5.123 The Government believes that its proposals for technical requirements to be defined on a case by case basis is correct as it does not consider that there is sufficient experience to define a generic, technical standard. The Government does not believe that defining technical standards at this time is likely to lead to the most effective and efficient solution.
- 5.124 Ofgem have reviewed the proposed drafting changes to the code and this drafting can be found with the consultation document as separate Annex 7.

General approach to the development of non-monetised costs and benefits

- 5.125 The Government is of the opinion that it is difficult to quantify the specific costs to a potential OFTO or generator of complying with a specific change to a technical rule, code, licence or agreement and consequently the cumulative affect of the changes that are proposed. However, in developing these proposals the Government is mindful of the need not to discriminate against potential offshore operators. As has been stated in previous IAs the Government considers that its approach of using the existing onshore codes, licences and agreements and only making changes where needed is more likely to have benefits in terms of reducing overall costs than developing entirely new codes, licences and agreements. For example, a number of existing players (both TOs and generators) may become involved in the offshore sector and the proposal to use existing licences, codes and agreements with which they are already familiar and have mechanisms, processes and personnel in place to enable compliance is more likely to keep costs down than if these needed to be developed afresh.
- 5.126 The Government considers that there will be costs to both OFTOs and generators in complying with the technical rules and codes (CUSC, Grid Code, STC and SQSS). However, the Government does not consider that these costs will be unnecessarily burdensome compared to the requirement that currently exist for onshore generators. Overall, the costs of compliance will not change significantly, in the same way as if a new entrant joined onshore but the allocation of costs will be different offshore. The Government considers that these codes, licences and agreements are necessary to ensure that existing obligations at the onshore point of connection are properly reflected offshore.
- 5.127 In developing the changes required to the relevant codes, licences and agreements the Government had borne in mind the need to keep costs to participants down and has only proposed changes that it considers necessary to enable the efficient, safe and secure operation of the transmission system.
- 5.128 The Government recognises that the costs of complying with the relevant codes, licences and agreements may be higher in the first instance for new entrants to the offshore transmission market (in terms of setting up systems to ensure compliance and monitoring processes are in place) but it does not consider that this is significantly different to the requirements that would be placed on a new onshore participant. Furthermore the Government considers that the ongoing costs of complying with the relevant codes, licences and agreements will be broadly similar to those faced by onshore TOs.

- 5.129 The Government considers that there are significant benefits to complying with the existing relevant codes, licences and agreements. In the broadest terms it will ensure that the wider transmission system is able to operate safely, efficiently and securely. The Government considers that the costs may be significantly higher, if significant outages occurred or repairs were required as a result of non-compliance with the required codes, licences and agreements, than the initial and ongoing costs of compliance.
- 5.130 In the wider context a lack of compliance with the required codes, licences and agreements would mean that a potential OFTO would be operating illegally and would be subject to code enforcement procedures and/or remedial action by Ofgem. The Government therefore considers that the costs and benefits of compliance significantly outweigh the costs and benefits of non-compliance.
- 5.131 The codes and agreements once implemented are subject to industry modification procedures. Signatories to the codes and agreements have the ability to propose changes to the codes that aim to enhance the existing code arrangements. It is therefore worth noting that Ofgem is currently undertaking a review²⁹ of the industry code governance procedures in the light of significant statutory changes to the regulatory framework within which the codes rest over recent years.
- 5.132 Currently the scope of the review is being determined with a number of issues being considered. One of these is the complexity of the codes arrangements and whether there is scope to reduce this. The review may consider the various elements of the governance regime and identify whether improvements can and should be made to the existing framework that applies in the electricity sector. The final scope of the review will be published in June 2008. The Government considers that this is a significant piece of work which will help to protect consumer interest and promote effective competition.

Further work

- 5.133 The full detail of the proposed changes to the codes, licences and agreements are set out in the accompanying consultation documents. There will be further consultations this year, which will take on board the comments from this consultation, and consist of more developed text on the codes, licences and agreements.

²⁹<http://www.ofgem.gov.uk/Licensing/IndCodes/CGR/Documents1/Open%20letter%20announcing%20governance%20review.pdf>

Charging, Access and Compensation

5.134 The costs and benefits laid out in the Summary Analysis and Evidence page are focused on:

- Costs to the generators and OFTOs of complying with the charging, access and compensation arrangements.
- Costs to NGET of developing the offshore arrangements.
- The benefits of keeping the charging, access and compensation arrangements similar to those which currently operate onshore

Assumptions

- Enabling a regulatory regime that will facilitate the connection and efficient operation of 7GW of offshore renewable generation. This will have benefits in terms of cumulative shadow price of carbon savings of c. £574m by 2013 (an average cost of c. £95m/year until 2013) (see Table 2 in paragraph 8.3 for further detail).
- The possible additional costs of fuel required for CCGT generation in lieu of 1 GW of offshore wind generation in 2008 is £78.8m/year. If the currently planned 7GW of offshore wind were not developed this cost would rise to an £550m / year by 2013 (an average cost of £289m / year until 2013. See Annex C for further detail).
- OFTOs will be able to operate assets worth up to £2.5bn - £3bn (for 24 projects) and generators being able to connect their assets to the grid. If these requirements are not complied with there is the potential for significant sunk costs and stranded assets.
- The existing onshore arrangements in terms of access, charging and compensation will be used or adapted where necessary for offshore transmission.
- There may be costs to OFTOs and generators to comply with the requirements but these are likely to be consistent with those required onshore.
- Compensation arrangements to incentivise OFTOs to maximise the availability of offshore transmission networks for use by offshore generators is likely to bring benefits for generators, OFTOs and consumers.

The Government considers that it is difficult to come up with specific costs in terms of charging, access and compensation particularly in terms of compliance as each project is different and will require specific and individual arrangements taking account of particular local project issues. The Government however, considers that costs of complying with the requirements are significantly less than the costs should they not be complied with. As for many of the technical requirements of the proposed offshore regime, and indeed for the onshore regime, non-compliance with the requirements would mean that those parties would not be able to either own and / or operate transmission assets. In the extreme, the consequences in terms of shadow price of carbon savings and fuel costs if alternative CCGT generation were required are set out at Annex C.

Charging

Update

5.135 The consultation document sets out in more detail the development of NGET's offshore charging proposals.

5.136 In developing the proposals for offshore transmission arrangements we have sought wherever possible, and unless significant new information emerges, to extend the same broad principles to the regulation of both onshore and offshore transmission. This would apply in cases such as the arrangements for charging.

5.137 This approach was reflected in NGET's December 2007 consultation on its proposals to modify its Transmission Network Use of System (TNUoS) methodology to incorporate charging arrangements for users of offshore transmission systems.

- 5.138 A conclusions report setting out NGET's proposed modification to the TNUoS methodology was anticipated to be submitted to the Authority for approval in early 2008 subject to clarity on the above issues. This has been delayed due to ongoing discussion between NGET and Ofgem on these issues.

Costs and benefits

- 5.139 The Government considers that the approach to offshore charging arrangements in which NG is responsible for developing the charging methodology which will be used offshore, is consistent to the approach onshore. It believes that this is likely to have benefits in terms of keeping costs to a minimum as it may be significantly cheaper than giving responsibility for developing the offshore methodology to a different organisation who may develop an entirely new approach. The Government considers that if this were the case, there would likely to be further costs for TOs, generators and the GBSO in terms of developing the interfaces (i.e. IT and associated systems) that would be required between the two different charging methodologies and the relevant participants. Furthermore there would be likely to be extra costs to those whom interact with the charging methodology in terms of learning new procedures and systems.
- 5.140 The Government considers that any increased costs in terms of charging may impact on the overall costs of connecting offshore renewable generation which may lead to a reduction in the amount of generation connected. This may have significant costs in terms of the shadow price of carbon and the need for alternative CCGT generation as set out in Annex C.
- 5.141 The Government estimates that there will be costs to NGET of developing the charging methodology but these are not anticipated to be significant.
- 5.142 The Government considers that there will be significant benefits in complying with the charging methodology i.e. that it is a licence requirement for TOs and that a failure to do so or to pay the required charges would lead to the penalties set out by Ofgem in the terms of a financial penalty or revocation of licence. This may mean that a generator would be unable to transmit any electricity it produced or that an OFTO would be unable to legally operate its transmission assets. This may lead to significant costs to the consumer in terms of stranded assets. The Government therefore considers that the costs and benefits of compliance significantly outweigh the costs and benefits of non-compliance.

Industry modification procedures

- 5.143 The charging regime, once implemented, will be subject to industry modification procedures and there is likely to be costs involved should modifications be required. However, the Government does not anticipate significant changes from the current costs associated with the governance of the relevant documents

Transmission access and compensation

Update

- 5.144 NGET has been developing proposals for access and compensation arrangements for offshore transmission networks in line with the direction that electricity transmission access offshore should be based on existing access products.
- 5.145 NGET published a consultation conclusion document outlining its proposals for offshore access and compensation arrangements in April 2008 that will be used to form the basis of NGET's drafting for the CUSC to apply under the offshore electricity transmission regime. These conclusions were informed by the views presented at the offshore workshop convened by NGET on 3 December 2007 on the rights and obligations associated with access to offshore electricity transmission networks and responses to the questions posed in the published notes of this workshop.

5.146 The Consultation Document sets out NGET's main conclusions and recommendations in terms of access and compensation and the Government's proposed approach.

Costs and benefits

5.147 The Government considers that the proposals set out in the Consultation document are consistent with the general approach that is used onshore.

5.148 The Government considers that using existing onshore access products is more likely to keep costs down than if entirely new access products were developed for the offshore sector. For example, existing players (both TOs and generators) and potential new entrants to the offshore sector may benefit from the approach that uses access products with which they are already familiar as they may have mechanisms, processes and personnel in place to enable compliance which is more likely to keep costs down than if these needed to be developed afresh.

5.149 The Government considers that the approach to sharing of restricted capacity is a fair approach and avoids undue discrimination as it is based on a pro-rating of the different parties' capacities. The Government considers that the certainty that this approach brings i.e. that parties will be aware beforehand of how such circumstances will be dealt with may be beneficial.

5.150 In terms of compensation the Consultation document sets out the Government's position on the recommendations made by NGET. The Government considers that the treatment of offshore generators should be consistent with the onshore arrangements and have previously stated that the current compensation arrangements defined in the CUSC, should not apply directly for outages on an offshore transmission system.

5.151 The Government proposes that an offshore generator should be entitled to compensation for lack of access if an OFTO fails to meet an annual performance target. The development of an appropriate performance target may have benefits for generators, OFTOs and consumers as it is more likely to lead to a more reliable transmission connection. This approach may be more likely to lead to an offshore transmission being returned to service in a timely manner following a planned or unplanned outage. This may enable significant savings in terms of shadow price of carbon and a reduced need for alternative CCGT generation. The Government considers that appropriate arrangements could be developed using the current CUSC compensation arrangements. This approach would be likely to keep the costs of developing the arrangements to a minimum whilst allowing a flexible approach that will enable customer choice design variations to be accommodated.

5.152 The Government considers that if there were no arrangements to enable compensation to be payable as a result of an OFTO's inability to deliver a connection, the costs of offshore transmission connections may be higher as this increased risk may be factored into overall project costs. A high level of risk may mean that some offshore generation projects may no longer be economically viable. This may lead to a reduction in offshore renewable generation with consequent impacts on CO₂ emission reduction.

5.153 The Government considers that its proposals strike the appropriate balance of risk and incentive between the generators and OFTO in that the compensation payable to the generator should be no more than the penalty paid by the OFTO. This may help to ensure that both parties ensure that the transmission connection is available in a timely manner.

5.154 There may be significant benefit in terms of time-savings, clarity of understanding and therefore lower costs in keeping the processes similar to those which are used onshore.

Connection Application Process

5.155 The costs and benefits laid out in the Summary Analysis and Evidence page are focused on:

- A one-off connection application fee payable by the generator to the GBSO.
- A one-off connection application fee payable by NGET to the onshore distribution licensee.
- Benefits arising from the reduction in delays as a result of only those offshore generators who meet the pre-conditions within the CUSC (and whose application is deemed competent) initiating the connection application process.

Assumptions

- A total of 24 projects apply for connection and are tendered for over a 6 year period with 4 projects / year;
- There is a one-off connection application fee payable to GBSO, which may be up to £250k.
- It has been assumed that the connection application process may lead to one project per year connection 3 months more quickly with the following benefits:
 - The savings if a typical 200-500MW offshore wind farm is connected 3 months more quickly in terms of the shadow price of carbon are £1.22m – £3.04m / project.
 - The savings in terms of the fuel costs of alternative CCGT generation required to replace the output of a typical 200-500MW project for 3 months would be £3.94m-£9.85m.
- NGET are required to pay the onshore distribution licensee a connection application fee of c £20k/project. It is assumed that 3 projects will connect via the distribution network.

Summary

5.156 The consultation document sets out in more detail the proposed two-stage connection application process. It can be summarised as follows:

- Within three months of the submission of a competent CUSC application for connection, NGET would provide an offer setting out the works needed on the onshore transmission system, to the offshore generator. If the offshore generator signs a bilateral agreement with NGET, then the project will be assessed as part of the next tender process (unless the generator requested that it should be considered at a future tender round).
- Once a Preferred Bidder is identified as part of the offshore transmission tender process, NGET would propose an “agreement to vary” to the bilateral agreement it has with the offshore generator, based on the construction offer provided to NGET by that Preferred Bidder.

5.157 The generator would be liable to provide a financial commitment at the point they sign the indicative connection offer from the GBSO. This would be required to secure the developer’s potential liability for the Authority’s tender costs if the tender process can not be completed because of some act or omission on part of the generator and to demonstrate the generator’s commitment to the tender process. These costs are likely to be c. £0.5m / project and are set out in Annex C. Further detail on the flow of funds through the connection and tender process are set out in the consultation document.

Roles and responsibilities of the participants

5.158 The benefits of NGET in providing a connection offer as set out in the consultation document are that it is consistent with the onshore arrangements and will provide more certainty for the generators. It is recognised that NGET will not be able to make a comprehensive offer to the offshore generator until it has detailed information about the design of the offshore transmission system required to provide a connection at the point

specified in the connection application. However, we consider that NGET is able to make sufficiently robust assumptions about the likely design of the offshore transmission system requirements to enable the impact on the onshore transmission system to be assessed in sufficient detail to enable the works that will be required on the onshore transmission system to be identified. We therefore consider that NGET's obligation to provide an offer within three months can be applied offshore, albeit that the offer made at that initial stage would only detail works identified on the onshore transmission system. The Government believes that this approach will bring benefits in terms of the level of certainty.

- 5.159 The Government considers that there may be benefits to NGET being able to suggest alternative onshore connection options. This may lead to lower costs but these options would need to be considered by the generator in the light of all the impacts on the project and any possible changes to consents / planning / environmental issues required for the cable routes. It may be that the costs for obtaining consent for a new cable route may outweigh the savings realised by going for an alternative connection point suggested by NGET. However, the costs of NGET developing these alternative options may be small compared to the benefits that they may deliver for the generator in terms of reduced overall costs or time savings.
- 5.160 The Government considers that NGET is best placed to offer connection options to generators and that generators working with the NGET whilst developing their proposals is likely have benefits in terms of time savings. The benefits of a three month time saving in terms of the shadow price of carbon for a typical 200-500MW offshore wind farm and savings in terms of the fuel costs of alternative CCGT generation are set out above.

Pre-conditions for CUSC application

- 5.161 The Government is considering whether the precondition that the developer enters into lease arrangements with the Crown Estates could be a pre-condition of the CUSC connection application form rather than that of the tender. This measure should prevent offshore generators entering into a bilateral agreement with NGET substantially before the project is ready to proceed to the tender process. If this requirement were included as part of the CUSC connection application form then it would be removed from the list of tender pre-requisites, since gaining a connection offer from NGET would satisfy the condition. The Government believes that this may have benefits as it will ensure that only projects that are ready to proceed can secure transmission access rights and help avoid early applications blocking transmission access opportunities. This is more likely to lead to lower overall costs and enable offshore generation projects to proceed more quickly with savings in terms of shadow price of carbon and less need for alternative CCGT generation.
- 5.162 The Government considers the propose approach will have benefits for generators, potential OFTOs and NGET. It will give the generator certainty that it will receive an initial offer and if this is signed, its project will be part of the next tender process. The Government believes that the process will also give the generator the opportunity to consider the final connection offer, following the successful conclusion of the tender process, to ensure that it still meets its requirements as it will need to accept the agreement to vary the initial connection offer to include the offshore element following the identification of the preferred bidder. The GBSO, potential OFTOs and Ofgem will have comfort that the costs that they incur in delivering the connection offer and tender process will be recoverable should the generator decline to sign the final connection offer agreement.
- 5.163 The Government considers that this approach in which the generator and potential OFTOs are encouraged to co-operate, which will allow account to be taken of the additional design and development work required offshore and allows information relevant to the initial connection offer to be available to potential OFTOs is more likely to deliver a connection offer which is acceptable to all stakeholders. This is more likely to reduce costs which is more likely to deliver renewable generation.

- 5.164 There will also be costs to the generator involved in providing information to NGET to enable a connection application to be considered but this is the case onshore. The Government considers that, by proposing that the onshore arrangements should form the basis of the offshore connection application process with minimal changes, it may reduce costs.
- 5.165 The Government considers that enabling NGET to update its Seven Year Statement showing connection options for offshore will be beneficial in terms of ensuring that all players have access to the same information.
- 5.166 The Government considers that there may be costs to developing a different approach to that which is used onshore. This may mean that projects are delayed with consequential costs in terms of shadow cost of carbon savings. There may also be costs if the initial connection offer is disputed and goes to determination and as a result the start of the tender process is delayed.
- 5.167 The Government considers that any party to a connection offer has the right to refer the NGET connection offer to Ofgem for determination if that party is unable to reach agreement with NGET. The Government considers that it is appropriate to extend this approach offshore.
- 5.168 The consultation document sets out how the Government intends to ensure that a customer's existing rights to dispute a connection offer from NG are protected in the light of the requirement that a signed connection offer is required to enable a generator's project to be eligible for the tender process. The Government considers that the flexible approach it is proposing will have benefits in that the rights of the generator will be protected but will also enable a tender process to proceed. This may have benefits in terms of time savings and consequently shadow price of carbon savings as it may enable a project to keep to its original timetable rather than have to wait for up to a year until the next tender window.
- 5.169 There may be costs associated with National Grid producing a high-level assessment of the connection site possibilities around the coast of Great Britain equivalent to its onshore Seven Year Statement. A previous IA estimated these costs to be between £30K - £60K but this will be dependent on the amount and level of detail required and there will be a requirement to define the specific obligations in respect of offshore transmission developments.
- 5.170 There is likely to be benefit in that if that renewable electricity generation targets were achieved more quickly there would be significant savings in terms of carbon emissions and the shadow price of carbon as outlined at paragraph 8.2.

Connection via distribution systems

- 5.171 The Government has previously stated that a mechanism was needed as part of the new offshore transmission arrangements that enabled NGET to request an offshore transmission system option for an offshore power station, via an onshore distribution network. The Government's initial view was that the arrangements for offshore transmission system connections to distribution systems should be consistent with the current arrangements for large embedded power stations.
- 5.172 The Offshore Transmission Embedded Transmission working group (OTETWG) was set up to assist the Government in developing proposals for connecting offshore transmission systems via distribution systems. OTETWG have considered how the current framework for a large embedded power station could be developed to facilitate NGET seeking connection to and use of a distribution network for an offshore transmission system. OTETWG concluded its review in February 2008 and made a number of recommendations which are set out in the consultation document.

Costs and benefits

- 5.173 In line with OTETWG's recommendation, the Government have sought information about any requirements arising from EU procurement rules. Noting that NGET would be required to advertise any distribution services requirements (that it is seeking for an offshore transmission system), the Government has subsequently evaluated each model with particular attention to the CUSC confidentiality restrictions.
- 5.174 The Government considers that its approach, in not requiring NGET during the initial stage of the CUSC application process, to investigate options for connecting an offshore transmission system to a distribution network until the applicant has entered into a contractual agreement will be beneficial in terms of ensuring that confidentiality is maintained.
- 5.175 The Government considers that the proposals may enable a connection to be made more quickly and at a lower cost if it can connect to an existing onshore distribution network rather than requiring new transmission infrastructure (i.e. overhead transmission lines) to be built. The possible savings of an offshore connection being delivered 3 months more quickly in terms of shadow price of carbon and a requirement for alternative CGGT generation are set out in Annex C.
- 5.176 The Government considers that there may be costs as distribution licensees may charge NG a connection application fee of c. £20k-£50k. However, the Government considers that this cost is small compared to the value of the assets and potential savings outlined above.
- 5.177 The Government considers that its proposal to define standard arrangements that would apply should NGET choose to seek a connection option for an offshore transmission system via a distribution network will have benefits. It considers that as many of the requirements for the interface between NGET and distribution licensees (in respect of in feeds requested by a distribution licensee) are defined in the CUSC and Grid Code, it would be sensible in terms of keeping costs down that both CUSC and Grid Code should also be extended to cater for embedded transmission connections.
- 5.178 The Government considers that the Distribution Code Review Panel is best placed to consider changes which may be required to extend the Distribution Code to apply to connections of an offshore transmission system to a distribution network.
- 5.179 The Government considers that the DCUSA Panel is best placed to consider changes which may be required to extend the DCUSA to apply to connections of an offshore transmission system to a distribution network.

Implementation Issues

5.180 The costs and benefits in the Summary Analysis and Evidence page are concerned with:

- The costs to Ofgem and BERR to implement the necessary changes to codes, licences, agreements and legislation to enable the regime to operate.
- The benefits of this work enabling the development of the offshore generation sector.

Assumptions

- The main costs in developing the regime are BERR and Ofgem staff costs and the related technical and legal consultancy required.
- There will be costs to industry in terms of responding to consultations and participating in the work streams throughout the development process.
- Enabling a regulatory regime that will facilitate the connection and efficient operation of 7GW of offshore renewable generation. This will have benefits in terms of cumulative shadow price of carbon savings of c. £574m by 2013 (an average of c. £95m/year until 2013) (see Table 2 in paragraph 8.3 for further detail).
- The possible additional costs of fuel required for CCGT generation in lieu of 1 GW of offshore wind generation in 2008 is £78.8m/year. If the currently planned 7GW of offshore wind were not developed this cost would rise to £550m / year by 2013 (an average cost of £289m / year until 2013. See Annex C for further detail).
- OFTOs will be able to operate assets worth up to £2.5bn - £3bn (for 24 projects) and generators being able to connect their assets to the grid. If these requirements are not complied with there is the potential for significant sunk costs and stranded assets.

5.181 There will be implementation arrangements required in a number of areas:

- Changes to codes and licences through commencement of Section 90 of the EA 2004;
- Extension of the role of the GBSO through commencement of Section 91 of the EA 2004;
- Implementation of tender regulations through Section 92 of the EA 2004
- Extension of the prohibitions of the Electricity Act 1989 into offshore waters under section 89 of the EA 2004 and change the definition of transmission voltage in offshore waters under section 180 of the EA 2004; and
- Implementation of cost recovery and transfer powers.

5.182 The accompanying documents set out the key stages in the implementation of these arrangements and the work that will be carried out over the coming months to enable this.

5.183 It is likely that much of the costs of this work will fall to BERR and Ofgem and the costs of this were set out in a previous IA relating to the costs of the overall work programme required to develop the offshore transmission regime. This included costs to BERR who are implementing the regulatory regime and to Ofgem who are assisting in developing detailed proposals for the new regulatory regime as well as licence drafting and the implementation of the tender process. Costs may also fall to the owners of the industry codes who are assisting Ofgem and BERR in developing the legal drafting.

5.184 There will also be costs as a result of NGET's work in delivering the various technical issues associated with the regime.

5.185 The Government believes that this work will have significant benefits as it will lead to a clear framework that will set out rights and obligations of all parties, will protect the security of the system, facilitate competition and enable Ofgem to run an efficient and effective tender process.

5.186 There may be costs to Ofgem, generators and OFTOs in complying with the new regime in terms of using the existing modification process to implement changes to codes and

licences. However, these are likely to be similar to those associated with the onshore regime.

- 5.187 There may also be costs to industry as a result of engagement in the work programme via working groups on codes, licences and regulations and in responding to consultation documents. The Government recognises the importance of the contribution that industry has made in the development of the regime to date and continues to welcome input into the development of the regime going forward. The level of these costs will be dependent on the extent to which industry players wish to become involved
- 5.188 The Government has decided that offshore transmission will be a licensed activity which will require a series of regulatory arrangements to be put in place. Consequently the Government considers that there will be significant benefits to the UK as a whole and the offshore renewable generation sector as without this development work proceeding, the proposed regulatory regime would not be implemented. This may, in the extreme, result in a loss of benefits through the failure of the offshore renewable electricity generation market, which is valued at c. £12 billion, over the next 10 years based on 8GW at a cost of c. £1.5m / MW installed, to develop fully. It could also have other associated impacts in terms of carbon dioxide savings not being realised as described throughout this IA.

Work Programme

- 5.189 We anticipate that the earliest date for commencement of sections 90, 91 and 92 of the EA is April 2009 and of sections 89 and 180 is April 2010. Please note these dates are for indicative purposes only.
- 5.190 The key dates we envisage are as follows:

June 2008	- Publication of this Policy Statement and consultation document - Publication of consultations on codes, licences and tender issues
June 2008	- BERR/Ofgem External Communications Session
September 2008	-Second consultation on Tender Regulations, Tender Design and draft licence, code and agreement modifications
December 2008	- Publication of final consultation
February 2009	- Consultation closes
April 2009	- 'Go-Active' commencement of ss. 90, 91 & 92 of the Energy Act 2004. - Modifications made to licences and associated codes & agreements. - First tender process commences, including for those with connections to be adopted
April 2010	- 'Go-Live' commencement of ss. 89 & 180 of the Energy Act.

- 5.191 The Government and Ofgem will continue to develop the detailed legal and policy framework required to implement the offshore electricity transmission regulatory regime in the light of comments received and as outlined in Ofgem's Consultation Document.
- 5.192 BERR and Ofgem will also hold an external communication session on 7 July 2008 at the BERR Conference Centre, 1 Victoria Street, London, and SW1 to discuss the issues raised in the Consultation Document in more detail. If you would like to reserve a place please send an email to offshore.transmission@berr.gsi.gov.uk
- 5.193 The Government and Ofgem value the significant contribution that the industry has made during the development of the regime. To ensure that this continues, in addition to the external communication session, there will be further opportunities for engagement. NGET (GBSO) is engaging in bi-lateral meetings with transitional projects and is also planning

workshops on Codes (19 June) and Getting Connected (Late Summer) to help develop the regime and prepare stakeholders for its introduction.

- 5.194 As set out in the January 2008 Joint Policy Statement, the Government is seeking additional powers in the Energy Bill to enable the Authority to run an effective tender process. We anticipate those powers to commence in December 2008 (two months after Royal Assent of the Energy Bill anticipated to be in October 2008). The Government recognises the significant work required to enable this timetable to be achieved particularly in relation to the proposed Go-Active date in April 2009. The Government is sensitive to the impact that any delay in the commencement of the regime may have on offshore generation projects and in the light of this the Government is considering that the consultation planned for December 2008 may, if necessary, be shortened to an eight week period of consultation. The Government considers that this option, whilst still allowing an appropriate period for consultation, may have significant benefits in ensuring that the timetable is adhered to. It must be stressed that the Government recognises the importance of an appropriate consultation period and would welcome stakeholders' views on this issue.
- 5.195 The Government has decided to have an additional round of consultation during the summer of 2008 focused on the draft licence, code and agreement modifications. The rationale behind this is that the Government considers that these are large and extremely detailed technical documents. It is important that stakeholders are given sufficient time to provide comments on the drafting changes that have been made and that Government has the opportunity to take on board these comments and then provide stakeholders with a further opportunity to comment on final draft text.
- 5.196 The Government is aware that this extra round of consultation may lead to the regime 'Go-active' being delayed until April 2009. However, the Government considers that this will not lead to any projects being delayed and may have benefits in the longer term as a result of enabling a more rigorous consultation process on the licence, code and agreement modifications.

6. Competition Assessment

- 6.1 In considering the impact that the proposals would have on competition, the Government has considered the proposed options for the new regime as a whole.
- 6.2 The Government has considered the four initial questions outlined in the OFT guidance³⁰ as follows:

In the affected market, would the proposals:	Government response
Directly limit the number or range of suppliers?	No
Indirectly limit the number or range of suppliers?	No
Limit the ability of suppliers to compete?	No
Reduce suppliers' incentives to compete vigorously?	No

- 6.3 The Government therefore considers that the proposed policy options are unlikely to raise any significant competition concerns in terms of market entry and ability to compete or innovate.
- 6.4 Furthermore, the Government's energy policy regulates where necessary and encourages competition where possible. The introduction of an element of competition in this new market for offshore transmission has been the Government's intention throughout the regime's development. The November 2006 Consultation Document reaffirmed this by setting out two approaches that both contained varying degrees of competition for the award of offshore transmission licences. By deciding to implement the non-exclusive approach in April 2007, the Government has selected the most competitive option. Further background to this approach and the decision to adopt it can be found on the BERR website³¹.
- 6.5 A further consultation in July 2007 and subsequent Government Response in January 2008 set out in more detail how the regulatory regime will be designed to facilitate this increased competition with the associated economic, environmental and social benefits this will bring.
- 6.6 The latest consultation is a further step in setting out in further detail how the competitive tender process will operate and the steps that will be taken to ensure that it is a fair and effective competitive process. The Government considers that the proposals set out in this latest consultation document will not have any adverse impact on competition.

³⁰ http://www.of.gov.uk/advice_and_resources/resource_base/guidelines/

³¹ <http://www.berr.gov.uk/energy/sources/renewables/policy/offshore-transmission/Licencing%20Offshore%20Electricity%20Consultation%20-%20Nov%202006/page35525.html>

7. Small Firms Impact Test

- 7.1 This consultation is a further stage in the development of the regulatory regime for offshore electricity transmission. Previous IAs³² have considered the possible impact that this new regime may have on small firms and concluded that the measures were unlikely to impact disproportionately on them.
- 7.2 These assertions were tested through the previous consultations and through a wide range of meetings with relevant stakeholders, companies and trade associations including organisations that represent small firms active in these sectors. No responses were received to suggest that there was likely to be any significant impact on small and medium size enterprises (SMEs)³³. BERR and Ofgem remained committed to this open dialogue approach.
- 7.3 The vast majority of SMEs are only likely to be affected by this measure to the extent that it leads to changes in the prices they pay for electricity. The sectors directly affected are made up almost entirely of large businesses. There is the potential for a small increase in electricity prices due to higher cost recovery of transmission revenues, although this is expected to be less than 1% and should have no significant impact on SMEs as a group or between each other.
- 7.4 A much smaller subset of small businesses active in the generation of renewable energy and/or the manufacture of materials required for offshore generation or transmission might be more affected by the regime. However, the Government does not consider that the impact of this will be disproportionate. Indeed the Government considers that the competitive approach being introduced offers a significant opportunity for SMEs in this sector.
- 7.5 Whilst developing this consultation we have consulted the Small Business Service and they have agreed that the proposed regulatory measures are unlikely to have a disproportionate effect on small firms. However, this assertion will be further tested by the consultation process.

³² <http://www.berr.gov.uk/energy/sources/renewables/policy/offshore-transmission/consultations/page42095.html>

³³ <http://www.berr.gov.uk/energy/sources/renewables/policy/offshore-transmission/consultations/page42095.html>

8. Carbon Assessment

- 8.1 The development of the offshore transmission regulatory regime will enable at least 7.2 GW of offshore wind under Round 2 to connect to the onshore electricity transmission grid.
- 8.2 Every 200-500 MW of renewable generation that comes online with a load factor of 30% is assumed to displace 200-500MW of CCGT generation producing 0.1 tC/MWh³⁴ or 0.35t/CO_{2e} (carbon dioxide equivalent) / MWh. Over a 3 month period an extra 131,000 – 328,000 MWh of renewable generation would result in savings of around 46 -115kt CO_{2e}. Based on a shadow price of carbon of £26.5 per tonne in 2008³⁵ which increases by 2% every year thereafter. This equates to a monetary loss of roughly £1.15m - £3.04m over a 3 month period (£4.88m – £12.2m / year) at today's prices.
- 8.3 Table 2 below sets out the shadow price of carbon costs for a range of offshore wind generation connected up until 2015.

	2008	2009	2010	2011	2012	2014	2015
Amount of offshore wind	1GW	2GW	3GW	4GW	5GW	7GW	10GW
M/tonnes CO _{2e} replaced ³⁶	0.92	1.84	2.76	3.68	4.6	6.44	9.2
Shadow price of carbon £/tCO _{2e}	26.5	27	27.6	28.1	28.7	29.2	30.4
Costs £m/ year	24.38	49.68	76.17	103.4	132	188	279.68

Table 2 - Shadow price of carbon costs based on a range of offshore wind generation connected up until 2015.

- 8.4 The Government considers that each of the proposals being consulted upon is an essential element of the whole regime and that without any one of these proposals the regime will be unable to function. Consequently each set of proposals has a significant contribution to make in terms of the overall carbon savings.

³⁴ http://stats.berr.gov.uk/energystats/dukes07_c5.pdf

³⁵ <http://www.defra.gov.uk/environment/climatechange/research/carboncost/pdf/HowtouseSPC.pdf>

³⁶ Rounded to the nearest 10,000 tons

9. Other regulatory impact issues

- 9.1 The Government does not consider that any of the proposals give rise to any significant impacts in relation to human rights, race equality, gender, disability, health, environment, legal aid, and sustainable development issues, or are likely to have a material impact on the rural economy.

Human rights issues

- 9.2 The Policy Statement set out that a developer must agree to transfer the offshore transmission assets to the selected OFTO under the terms set out in its request for the appointment of an OFTO. It also stated that appropriate arrangements would need to be put in place to ensure that a transfer could occur.
- 9.3 The provisions being sought in the Energy Bill as set out in more detail in the Government Response and Ofgem's Consultation Document may engage Article 1 of the First Protocol to the European Convention on Human Rights ("ECHR"). However, the provisions pursue a legitimate aim and are proportionate to the achievement of that aim. The making of a property scheme may also involve a determination of a person's civil rights and obligations and therefore engage Article 6(1) of the ECHR, which protects the right to a fair and public hearing within a reasonable time by an independent and impartial tribunal established by law. The Department considers that the opportunities to make representations and the remedies available will provide an adequate safeguard of the rights which may arise under Article 6(1). Finally, the Authority will have a power to obtain information to assist it in considering an application for a property scheme, which may engage Article 8 of the ECHR. However, the Authority needs to be in possession of all relevant facts before making decisions concerning property, rights and liabilities which belong to others. This information power is therefore justified under the terms of Article 8(2) as being in the interests of protecting the rights and freedoms of others

Equalities duties (race, disability and gender)

- 9.4 After initial screening as to the potential impact of this policy/regulation on race, disability and gender equality it has been decided that there will not be a major impact upon minority groups in terms of numbers affected or the seriousness of the likely impact, or both.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	Yes	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	Yes	No
Disability Equality	Yes	No
Gender Equality	Yes	No
Human Rights	No	No
Rural Proofing	No	No

Annex A

List of Respondents

Airtricity
British Energy
Centrica
DONG Energy
EDF Energy
Energywatch
E.ON UK
NGET (TO)
NGET (GBSO)
RWE npower
Scottish and Southern Energy
Scottish Government
Scottish Power Generation
Scottish Power Networks
Siemens
Warwick Energy

Annex B

COSTS AND BENEFITS OF EACH OPTION

Design of Regulatory Regime

Economic Benefits

OFTOs should be able to recover their costs over a period consistent with the expected life of the offshore generation assets. This is less likely to lead to stranded assets than an alternative approach where the cost recovery would be based on the life of the transmission assets. The Government considers that a revenue stream for a period of 20 years post-construction is consistent with the anticipated asset profile of offshore generators. As such, this provides an appropriate balance between the interests of consumers and the ability of the OFTO to finance its investment over a reasonable period.

The Government considers that its approach to the arrangements at the end of the regulated revenue stream i.e. to re-tender will have economic benefits as it will continue ensure that any benefits of competition continue to be realised. The Government considers that this position provides adequate certainty to generators and OFTOs. Furthermore the Government considers that its flexible approach to a number of possible scenarios at the end of the revenue period where re-tendering the licence is unlikely to be suitable i.e. where the incumbent generator expects to continue generating for a short number of years only, will have significant benefits. By taking account of the needs of the generator and Ofgem's statutory duties at the time it is more likely to deliver the most cost-effective and efficient solution.

Indexation of the revenue stream

The Government considers that this approach to include an RPI indexation of costs mechanism would have benefits as it would provide more certainty for the OFTO as it would protect them against inflation whilst also protecting the consumer against deflation. Furthermore the Government believes that if this measure were not included potential OFTOs would be more likely to include risk premiums in their tender bids to reflect inflationary uncertainty which would increase the overall bid costs.

Performance incentives

The Government considers that performance incentives and penalties are likely to lead to a more robust and efficient system. The Government considers that an incentive regime is more likely to lead to improved performance which will have benefits for generators as the loss of income as a result of poorly performing transmission assets is likely to be reduced and wider economic benefits in terms of shadow price of carbon savings and a reduced fuel costs for alternative CCGT generation. However, it is important that we strike an appropriate balance between risks and rewards. If the incentives are too inflexible then it is likely that generators and consumers will pay a higher price for the provision of assets. The OFTO will again reflect appropriate risk premiums into the revenue streams which they bid.

The Government considers that its approach to incremental capacity increases, as outlined in the consultation document will ensure that the costs are kept to a minimum which will ensure that the benefits arising from the competitive tender process are maintained whilst ensuring that any extra benefits from a further tender process, where appropriate, can be realised.

Reporting arrangements

The Government considers that there will be benefits in ensuring that appropriate regulatory information is provided by companies on a consistent basis as it will ensure that the regime can be monitored effectively which may lead to a more efficient regime which may lead to lower costs in the longer term.

Generator requirements

The Government considers that there is benefit, in terms of keeping costs to a minimum, in extending the onshore arrangements in terms of offshore in areas such as an OFTO being required to provide additional capacity or services, as it does not believe that there is anything in the nature of offshore transmission to justify different arrangements.

Environmental benefits

The proposals which are more likely to lower costs, increase competition, incentivise performance and enable a flexible process at the end of the revenue period are more likely to encourage offshore renewable generation. The Government believes that this may lead to an increase in the amount of offshore renewable generation which is more likely to have significant environmental benefits in terms of CO₂ emission reduction.

Social benefits

The proposals which will encourage offshore renewable generation may have significant social benefits through a reduction in CO₂ emissions and increased diversity of the energy mix both in terms of fuel type and geographic source.

The Government considers that the proposed incentive schemes may have significant benefits for consumers as they are designed to improve the quality of service for consumers by penalising a company for poor performance, but not rewarding it for over-performance. Poor performance is perceived to be detrimental to the interests of consumers, whereas over-performance does not always provide consumers with additional benefits.

Economic Costs

An approach in which OFTOs recover their costs over a period consistent with the expected life of the offshore transmission assets may be more likely to lead to stranded assets as transmission assets may have a longer life than the generation assets with limited scope for utilisation by other parties. This may be more likely to lead to higher overall costs.

The Government considers that whilst its approach to incremental capacity increases, as outlined in the consultation document will lead to some extra costs to OFTOs if a re-tender exercise is required; it believes that the extra benefits arising from the tender process more widely will outweigh these costs.

The Government is aware that overly onerous reporting arrangements may have costs and may become a barrier to entry.

The Government recognises that there would be costs to all parties involved if a tender process was required at the end of the initial revenue period but it does not consider that the costs would be as high as for the initial tender³⁷ as the process would be restricted to identifying a subsequent regulated revenue stream for operation and maintenance of the assets, including the capital cost of any asset replacement, and ensure that a new OFTO is identified and appointed before the initial licence is revoked.

Environmental costs

Proposals which may lead to higher overall costs may lead to fewer projects being developed with the associated negative environmental impacts.

³⁷ Indicative costs to bidders and Ofgem for the initial tender process were set out in the previous IA

Social costs

An alternative approach based on the life of the transmission assets as opposed to generation assets is more likely to lead to stranded assets, the costs of which would be borne by the consumer by higher electricity prices.

Proposals which are more likely to lead to higher costs will lead to a reduction in the volume of offshore renewable generation. This is more likely to have significant social costs through a loss of CO₂ emissions reduction and a reduction in the diversity of the energy mix both in terms of fuel type and geographic source.

Competitive Tender process

a. Transitional tender process

Economic benefits

The 75% ex-ante assessment provides an appropriate balance of incentives for developers and risks to consumers. The proposal retains a strong incentive on developers to keep costs low which will help achieve economic and efficient development of transmission assets. This will have a benefit for the offshore wind sector in terms of lower overall costs by providing a commitment that would give financiers greater comfort and certainty and may therefore assist in the development of smaller projects.

The OFTO of last resort proposal may be benefits to the generator in that it would have comfort that if the transitional tender process does not identify an OFTO, Ofgem would seek to award the OFTO licence to the offshore developer. This may mean that any delay to the project would be minimised which may lead to benefits in terms of shadow price of carbon savings and lower overall construction costs.

The increased certainty, if the terms for the transfer of assets are set out so that they can be considered by prospective bidders, is likely to encourage bidders to submit tender bids. This may increase the amount of competition and is likely to lead to a more efficient outcome. Similar benefits would be enjoyed if developers agreed to transfer assets to the winning OFTO bidder following a tender process. This may mean that the delay to the project would be minimised which may lead to benefits in terms of shadow price of carbon savings and lower overall construction costs.

The Government considers that each of the proposals is likely to bolster confidence in the offshore renewables market which in the short-term will enable projects to be built sooner and may in the longer-term bring in more players and reduce costs.

Environmental benefits

These proposals within the transitional arrangements may have significant environmental benefits. If the transitional arrangements allow more offshore renewables projects to begin generating earlier it will reduce overall CO₂ emissions. Every 1GW of renewable generation that is not developed would result in lost savings of around 920 kt/CO₂e as set out in Annex C. Potential costs based on the shadow price of carbon for a range of renewable generation can be found at paragraphs 8.1 – 8.3. Further background on the shadow price of carbon can be found on the Defra website³⁸.

Social benefits

An increase in offshore renewable generation will have significant social benefits in terms of energy diversity and reductions in CO₂ emissions.

³⁸ <http://www.defra.gov.uk/environment/climatechange/research/carboncost/pdf/HowtouseSPC.pdf>

This approach will help to ensure that transmission connection costs are economically and efficiently incurred. This will help to ensure that overall costs are lower which is more likely to benefit consumers in terms of lower electricity prices.

Economic costs

There may be extra costs to Ofgem as a result of having to develop a price control and a revenue stream for projects which required an OFTO of last resort. These costs may be higher than if an OFTO of last resort were not required as the development of the price control and revenue stream would not have the benefit of the level of information provided by a successful competitive tender process. However, the cost of this is not expected to be significant as to undermine the potential benefits of having the OFTO of last resort mechanism. The Government intends that any costs will be kept to a minimum and considers that the costs involved will be marginal in relation to the overall size of an average project.

There may also be a risk that offshore transmission assets may be unattractive to potential OFTOs which may mean that there is no OFTO willing to adopt the assets. In the circumstances Ofgem may decide to award the generator an OFTO licence to operate the assets. However, there is a risk that costs may increase if inexperienced generators are required to operate transmission assets.

In undertaking an ex-ante assessment there may be a risk that the final costs of un-constructed transmission assets will not be known. Should these costs increase to an extent that Ofgem do not deem them to be economic and efficient it is more likely that the costs, which will not be recoverable by the generator through the RAV, will be borne by the generator. This may lead to higher overall costs which may mean that fewer offshore renewable generation projects will proceed.

There is a risk that if the transmission assets to be adopted are not built to the required standard as described during the tender process, the winning OFTO may refuse to adopt them. In this event it is likely that this will have a negative effect on confidence in the transitional arrangements and in the offshore renewables market in general. This may increase costs in the long-term.

The reduced certainty, if the terms for the transfer of assets are not set out so that they can be considered by prospective bidders, may discourage tender bids. The consequent reduction in competition may lead to higher costs. Similar costs would be incurred if developers did not agree to transfer assets to the winning OFTO bidder following a tender process.

Environmental costs

There is a greater likelihood that a project, that will require adoption, will fail if it does not have sufficient confidence that their assets will be adopted. This loss of offshore renewable generation may have negative environmental impact through loss of carbon savings.

Similarly, there is a risk that the final costs of these transmission assets will not be known and, should these costs increase to an extent that Ofgem do not deem them to be economic and efficient, it is more likely that the costs, which will not be recoverable by the generator through the RAV, will be borne by the generator. This may lead to higher overall costs which may mean that fewer offshore renewable generation projects will proceed which may have social costs in terms of a loss of CO₂ reduction.

Social costs

There may be significant social costs, if projects were to fail as a result of the transitional arrangements, through a reduction in the amount of offshore renewable generation and associated loss of CO₂ emission reduction. Similarly, there will be a decrease in terms of the diversity of energy supply and associated security of supply issues.

b. Enduring Tender Process

Economic Benefits

Pre-conditions for tender process

The Government believes that this approach may have significant economic benefits as it considers that a project would have to be sufficiently developed, to make the required financial commitment, which would give the GBSO, potential OFTOs and Ofgem confidence to enable a tender process to be initiated with confidence that a transmission connection will be required. The Government considers that this approach is less likely to lead to projects failing and therefore incurring unnecessary costs.

Financial commitments from the preferred bidder

The Government considers that the requirement for bidders to provide a financial commitment throughout the tender process will have a significant benefit for the wider tender process in that it will help to ensure that only serious players come forward. This is more likely to reduce delays throughout the tender process as there is likely to be less time and resources spent on developing and assessing tender processes for projects that are not serious.

Generator affiliate

The Government considers that allowing generator affiliates to bid in the tender process may increase the amount of competition which may lead to lower costs for transmission assets. However, it is recognised that issues of business separation must be in place to ensure that no unfair competitive advantage is obtained and the Government will develop further safeguards within the tender process.

Streamlining the connection and tender process (needs updating)

The proposed four stage tender process will be effective in attracting bidders, while ensuring an effective competition and providing the certainty of delivery from the successful bidder. The proposed phased approach will ensure sufficient interest in the project from a wide range of suitable bidders as it will be designed to keep costs to a minimum.

The initial expressions of interest stage, may also include a detailed pre-qualification questionnaire requesting high-level design, building and financial information, which will help to raise early in the process any significant data issues that may impact on the effective running of the tender process. The Government believes that this process will provide the basis from which unsuitable bidders may be 'screened' against pre defined evaluation criteria to ensure only those with sufficient technical acumen, legal credibility and financial strength are invited to incur the costs associated with detailed bid submission. The Government considers that this will reduce costs in the long-term as it will ensure that only those serious bidders with the capability to provide OFTO services will proceed to the next stage of the process.

The Government considers that the benefits of the proposed tender process and proposals for streamlining the process as set out in the previous IA remain unchanged. The Government considers that the detail of the tender process will continue to evolve in the light of the consultation on the draft tender regulation and tender documents. The economic costs and benefits of the proposals will be kept under review as this process moves forward.

Tender windows

The Government believes that there are merits in the optimised and efficient delivery of offshore transmission networks that avoids unnecessary duplication of infrastructure if this is practicable, in particular where an annual tender application window for OFTO bids could cover adjacent projects. The Government believes that the proposed approach will allow expressions of interest

to encapsulate more than one offshore transmission project so efficiencies might be obtained through joint bidding for combined offshore transmission infrastructure with more than one offshore connection. This may lead to cost savings in terms of bidding costs and overall costs of building the transmission assets as it may help to avoid unnecessary duplication of infrastructure³⁹.

The Government continues to believe that using tender windows will help facilitate an orderly process and should not limit the time when an offshore generator can apply for a connection. The Government does not believe that this would introduce significant delays because the date the window opened would be publicly available information and this would be scheduled for the same time each year. As such developers should be able to factor into their plans, compliance with the proposed pre-conditions that need to be satisfied to enable their project to be included in the EOI when the tender window is opened. The Government will commit to keep this issue under review as experience under the transitional tender arrangements is gained.

The Government believes that cost savings may be possible if bidding OFTOs contract jointly for common preparatory work rather than individually.

Environmental benefits

The Government considers that the proposed approaches are more likely to lead to an effective competitive process which may lead to lower costs. This is more likely to lead to lower transmission connection costs which will encourage offshore renewable generation which will bring environmental benefits in terms of a reduction in CO₂ emissions.

The Government believes that a clear and straight-forward tender process as set out in the accompanying consultation document will have significant benefits as it is intended to keep to a minimum the time the tender process takes whilst delivering effective competition. The Government considers that an effective and efficient tender process may lead to projects being developed quicker which the Government believes could have significant benefits in terms of CO₂ savings – each GW of offshore wind that replaces conventional CCGT generation leads to a saving of 350kt/CO_{2e} per year.

Social benefits

The Government believes that an effective competitive tender process may lead to lower transmission connection costs and therefore lower overall project costs which may lead to an increase in the volume of offshore renewable generation which will have social benefits through a reduction in CO₂ emissions.

Economic costs

The proposed process may be seen as potentially complex as there are a number of stages through which potential OFTOs will have to go. There may be a number of potential OFTOs who will be put off by the proposed approach which will reduce the number of bidders and reduce the effectiveness of the competitive approach that has been adopted. This may, in the long-term, lead to higher costs as there is less competition to provide the offshore transmission assets. However, it must be recognised that not all potential OFTOs who bid will have to go through all the stages.

There is a possibility that the requirement to enable Ofgem to recover its costs from generators and potential OFTOs may reduce the number of bidders willing to enter the competitive tender process. However, the Government will ensure that the costs of the tender process will be kept to a minimum and will be cost-reflective (based only on the costs that Ofgem actually occur as a result of running the tender process) whilst allowing a robust and effective competitive process.

³⁹ <http://www.berr.gov.uk/files/file35531.pdf>

There is a risk that if there is not a clear understanding of the information required to be submitted during the tender process, the costs will increase for both bidders and Ofgem as clarification will be necessary. Ofgem will mitigate these costs by establishing clear and agreed instructions ahead of the process.

Environmental costs

If the tender process is complicated and expensive, there may be fewer bidders which would lead to a less competitive process. If competition were reduced it is less likely that an optimum bid would win. This may lead to higher costs which may mean that less offshore renewable generation would connect and there would be costs in terms of CO₂ emissions savings.

Any aspect of the tender process which increased costs disproportionately is more likely to lead to negative environmental impacts. Each GW of offshore wind that does not proceed would lead to lost emissions savings of 920kt /CO₂e per year as set out in Annex C.

Social costs

There may be social costs in terms of reduced CO₂ emission reduction, if the cost of the tender process led to a reduction in the number of renewable generation projects proceeding. This may lead to a decrease in terms of the diversity of energy supply and associated security of supply.

Licences

Economic benefits

The Government considers that the proposed changes to licences are necessary to ensure that offshore generation is able to proceed but believes that the proposals will ensure that the costs involved are kept to a minimum. This is more likely to reduce overall costs of offshore transmission connections.

The benefits of implementing the proposed changes to the licences are significantly greater than the costs associated with these changes as if the necessary changes were not implemented it is likely that offshore generation projects would be unable to proceed. The costs in terms of shadow price of carbon and the need for alternative CCGT generation are set out in paragraphs 8.1-8.3 and Annex C.

The Government believes that it is necessary to require that holders of offshore transmission licences do not also hold a current onshore transmission licence. This would ensure that existing licensees operate their offshore transmission activities as a separate legal entity. This is necessary to ensure that the tender process is fair and transparent and that existing onshore TOs do not have an unfair competitive advantage.

Environmental benefits

The Government believes that the proposed changes to licences will enable offshore renewable generation to proceed which will have significant benefits in terms of CO₂ reduction. Furthermore, keeping the required changes to a minimum is more likely to lead to lower overall costs for TOs which may lead to a greater volume of offshore renewable generation connecting which will have significant environmental benefits in terms of CO₂ emission reductions.

Social benefits

Adopting an approach which may lead to an increased amount of offshore renewable generation will have social benefits in terms of energy diversity and reductions in CO₂ emissions.

Economic costs

The proposed changes to licences may place extra costs on affected parties which may increase costs of offshore renewable generation. The Government does not consider that these costs should be significantly higher than those faced by those onshore. Furthermore, the Government considers that the costs of not undertaking these changes would be significantly higher to generators, OFTOs and consumers in terms of lost development costs and opportunities should offshore renewable generation not proceed.

Environmental costs

The Government considers that if the proposed changes to licences were not implemented, there is a risk that offshore generation would not proceed. This is likely to have significant negative environmental affects in terms of loss of CO₂ emission savings.

Social costs

If the proposed changes to licences were not implemented, this may lead to a reduction in the volume of offshore renewable generation which will have social costs in terms of energy diversity and a smaller reduction in CO₂ emissions.

Technical Rules and industry codes

Economic benefits

The Government considers that there are significant economic benefits to complying with the relevant codes, licences and agreements. In the broadest terms it will ensure that the wider transmission system is able to operate safely, efficiently and securely. There will be significant benefits to generators in that they will be able to transmit their electricity via the transmission network and to OFTOs in that they will be able to operate their transmission assets and thereby receive and income via TNUoS charges.

The Government considers that the costs may be significantly higher, if significant outages occurred or repairs were required as a result of non-compliance with the required codes, licences and agreements, than the initial and ongoing costs of compliance.

The relevant changes to the various codes, licences and agreements that are required to enable offshore projects to connect to the onshore grid are likely to have significant economic benefits. These changes which will ensure that offshore projects are able to connect to the onshore transmission system are likely to lead to an increase in the number of offshore wind projects that proceed which is more likely to lead to overall costs being reduced.

Environmental benefits

The changes to the relevant codes, licences and agreements required to implement the proposed offshore transmission regime, will enable offshore projects to develop and are therefore likely to lead to an increase in the numbers of offshore wind projects that proceed. This is likely to have significant environmental benefits in terms of a reduction in CO₂ emissions, in shadow cost of carbon savings and a reduced requirement for alternative CCGT generation.

Social benefits

An approach to the relevant codes, licences and agreements which may lead to an increased amount of offshore renewable generation will have social benefits in terms of increased energy diversity and reductions in CO₂ emissions.

Economic costs

The Government considers that there will be costs to both OFTOs and generators in complying with the relevant codes, licences and agreements. However, the Government does not consider that these costs will be unnecessarily burdensome compared to the requirement that currently exist for onshore generators. The Government considers that these codes, licences and agreements are necessary to ensure the safe and secure operation of the wider transmission network. The Government considers that the wider costs may be significantly higher, if significant outages occurred or repairs were required as a result of non-compliance with the required codes, licences and agreements, than the initial and ongoing costs of compliance.

The Government recognises that the costs of complying with the relevant codes, licences and agreements may be higher in the first instance for new entrants to the offshore transmission market (in terms of setting up systems to ensure compliance and monitoring processes are in place) but it does not consider that this is significantly different to the requirements that would be placed on a new onshore TO. Furthermore the Government considers that the ongoing costs of complying with the relevant codes, licences and agreements will be broadly similar to those faced by onshore TOs.

Any changes to the relevant codes, licences and agreements that are required will be necessary to ensure that projects are able to comply with the licence conditions that are placed upon them and to ensure the safety and security of the wider GB transmission system. Failure to take proper account of the technical requirements is likely to lead to costs in terms of penalties for failure to comply with the required technical rules.

Failure to make the required changes to the technical rules will lead to offshore renewable generation projects being unable to connect to the onshore transmission system. This is likely to lead to significant losses in terms of 'sunk' development costs for offshore renewable generation projects that are unable to connect to the onshore grid to transmit their electricity.

The relevant codes, licences and agreements once implemented will be subject to industry modification procedures and there is likely to be costs involved should modifications be required. However, the Government does not anticipate significant changes from the current costs associated with the governance of the relevant documents

Environmental costs

If the required changes to the relevant codes, licences and agreements are not made; offshore renewable generation projects are unlikely to proceed. This is likely to have significant environmental impacts in terms of loss of reduction in CO₂ emissions and increased negative environmental impacts.

Social costs

If the required changes to the relevant codes, licences and agreements are not made; offshore renewable generation projects are unlikely to proceed. This is likely to have significant social costs in terms of reduced energy diversity mix and a loss of reduction in CO₂ emissions.

Charging

Economic benefits

Using the current approach as applied onshore as the basis to develop the offshore charging arrangements will ensure the system will be recognisable by developers and OFTOs and therefore more likely to be cheaper to implement than if a new approach were developed which will reduce costs.

Asking NGET⁴⁰ to take the approach currently specified in their licence which will incorporate industry input and consultation at key stages. The Government considers that the use of regular fora such as the Transmission Charging Methodology Forum (TCMF) is a suitable mechanism to ensure that a consensus on an appropriate charging methodology is reached. This should enable a non-discriminatory approach to be developed in time and to an appropriate quality. This approach is more likely to ensure an efficient and effective system which is more likely to reduce costs.

Environmental benefits

Developing the charging methodology in this way may reduce overall costs for users of the system. This may have a positive impact on development of the offshore generation which in turn will bring increased environmental benefits.

Social benefits

An increase in offshore renewable generation will have positive benefits in terms of energy diversity and reductions in CO₂ emissions.

Economic costs

The costs of developing a charging methodology different to that which is currently used onshore would be higher in terms of developing the methodology, explaining it and implementing it. This would be more likely to increase the costs of offshore renewable generation.

Environmental costs

Developing a charging methodology significantly different from that used onshore is likely to be more expensive. Higher costs are more likely to lead to less offshore renewable generation which will have greater negative environmental impacts in terms of a loss of reduction in CO₂ emissions.

Social costs

A reduction in the volume of offshore renewable generation will have costs in terms of energy diversity and reductions in CO₂ emissions.

Access

Economic benefits

There may be significant benefits in keeping the same or very similar access products for offshore as are currently used onshore. Whilst it is recognised that access products will have to take account of differences offshore, there may be a benefit in using existing onshore products which will be cheaper than developing entirely new offshore access products. Furthermore as participants may be familiar with existing onshore products it is more likely that their costs will be lower as a result.

As the impacts of any changes to the access products may not be limited to either onshore or offshore, there will be a benefit in any changes being progressed via industry parties and by proposing amendments to the CUSC. This will ensure that all views are taken into account and that efficient and suitable access products can be developed.

⁴⁰ <http://www.nationalgrid.com/NR/rdonlyres/ODF19996-2131-406A-B6C2-28C31C5ABBE4/18307/OffshoreChargingPreconsultationGBECM08.pdf>

Environmental benefits

Using similar access products is more likely to reduce costs for offshore generators which may lead to an increase in renewable generation with the associated environmental benefits.

Social benefits

Adopting an approach which is more likely to reduce costs may mean an increase in the volume of offshore renewable generation. This will have social benefits in terms of energy diversity and reductions in CO₂ emissions.

Economic costs

If the existing access products are to be used offshore it is important that these are appropriate and do not discriminate against offshore generators as this may lead to increased costs and delays.

Developing significantly new access products for offshore may be a more expensive process than varying those that currently exist for onshore. This approach would be more likely to increase costs and cause delays to the connection of offshore renewable generation. This may have costs in terms of loss of social cost of carbon savings.

Environmental costs

Undertaking an alternative approach to developing access products may increase costs for offshore renewable projects which may mean that they are less likely to proceed. This may lead to increased negative environmental impacts as there may be less offshore renewable generation.

Social costs

An approach which leads to a reduction in the volume of offshore renewable generation will have social costs in terms of energy diversity and reductions in CO₂ emissions.

Compensation

Economic benefits

Having compensation arrangements with minimal changes to those in place onshore may reduce costs as players who are familiar with the existing arrangements will not have to learn, understand and develop processes for interacting with a new system.

Aligning compensation with the access product and level of infrastructure available using the principle of cost-reflectivity is more likely to lead to a more efficient solution.

It is more likely that the proposed OFTO incentive arrangements may encourage offshore wind generation as it may provide a benefit to offshore generators should their transmission connections fail.

An incentive mechanism to maximise the availability of offshore transmission networks is likely to lead to a more reliable transmission system and to more timely return to service following an outage. Increased reliability is likely to lead to lower costs in terms of maintenance which may lead to lower overall costs.

The proposals could lead to benefits for OFTOs as they may seek new ways to deliver more efficient transmission connections with increased reliability. This may reduce long-term overall costs as this extra reliability would reduce the maintenance costs associated with transmission assets but may be more expensive in the short term.

Environmental benefits

The proposals where OFTOs are incentivised to deliver more efficient transmission connections with increased reliability will lead to an increase in offshore renewable generation as the risks to generators may be reduced. This increased renewable generation would have environmental benefits in terms of a reduction in CO₂ emissions.

Social benefits

An approach which may lead to an increased amount of offshore renewable generation will have benefit in terms of energy diversity and reductions in CO₂ emissions.

Economic costs

In determining the compensation arrangements it is important that the balance of risks between the generator and OFTO is appropriate as this may otherwise lead to higher costs for one particular party over another. If this occurs it may lead to fewer projects being developed. Similarly, inappropriate penalties and incentives for OFTOs may lead to an inappropriate risk profile which may lead to higher overall costs.

If there were no compensation arrangements offshore the costs to the generator of having to get insurance to cover the potential losses due to failure of transmission assets may lead to higher overall costs. Conversely, if offshore generators were to get the same level of compensation as onshore, OFTOs may reflect this in their costs to cover this potential liability so costs may be higher.

Providing compensation on the same basis as onshore may reduce innovation as generators would be less willing to consider new transmission arrangements or methods which are not tried and tested. This may mean that costs will not be reduced to the same extent as under a situation where innovation was encouraged.

Environmental costs

Higher costs associated with similar compensation arrangements as onshore may lead to fewer offshore renewable generation projects with the associated loss of reduction in CO₂ emissions and increased negative environmental impacts.

Social costs

If similar compensation arrangements apply offshore then ultimately these higher costs may be borne by electricity consumers through higher electricity prices. Consumers may therefore bear a higher proportion of the risks of offshore renewable generation.

Connection Application Process

Economic benefits

A two-stage approach designed around the tender process is the most appropriate approach to take account of the additional design and development work required offshore. This will better enable connection applications to be accommodated within the existing framework. Within this the Government will seek to ensure that the process is kept similar to the onshore system where appropriate as this should minimise the need for new systems and associated periods of learning which should help to keep costs down and reduce timescales.

The Government considers that this approach, in which the generator and potential OFTOs are encouraged to co-operate, will allow account to be taken of the additional design and development work required offshore. This approach which will allow information relevant to the initial connection offer to be available to potential OFTOs is more likely to deliver a connection

offer which is acceptable to all stakeholders. This is more likely to reduce costs, which is more likely to deliver renewable generation.

The Government considers that preparatory works (e.g. consenting) being undertaken by the generator until the selection of a preferred OFTO bidder, who will then take on this work, may have significant benefits as it is more likely to reduce the time taken to develop a project than if this preparatory work were delayed until an OFTO had been appointed following a tender process. This may reduce overall costs. There may be additional cost savings if potential OFTO bidders require common preparatory work as they may contract jointly for this work and the successful bidder reimbursing the proportion of the costs to the unsuccessful bidders once the process has concluded. This joint contracting may lead to lower costs as information could be shared between bidders rather than them each carrying out the same work separately. A further benefit will be that this may also help to ensure that there is parity of information which will help increase transparency and ensure fair competition during the tender process.

The production by the GBSO of a document equivalent to a Seven Year Statement will help to ensure that the correct information is available as early as possible which will help to reduce costs and allow indicative connection offers to be made in a timely manner.

The proposals for adapting the existing structure of connection application fees will ensure that the generator pays a fee that reflects the cost of the connection works and tender activities it causes through a staged process of ramping-up the level of commitment as the application progresses.

An annual tender application window may allow a number of connections to be bid for together in a single tender. This may mean that the costs involved may be lower for both bidders and the bodies assessing the bids than if the connections were bid for in a number of individual tenders. The Government also believes that shared connections may lead to lower overall connection costs. Previous RIAs estimated that potential cost savings of shared connections were significant⁴¹.

The Government considers that using existing mechanisms for connection via distribution systems may be beneficial as this should minimise the need for new systems to be developed and associated periods of learning which should help to keep costs down and reduce timescales. The proposals in facilitating connection to the onshore distribution network may have significant benefits as the nearest point of connection to the onshore transmission network may be some distance away and connecting to this, rather than to the distribution network, may be substantially more costly in terms of building transmission assets. An approach that leads to lower costs and a more efficient system is more likely to lead to the development of a greater volume of offshore renewable generation which may in turn lead to lower overall costs.

Environmental benefits

Keeping the connection process simple will reduce costs for offshore renewable generators. This is more likely to encourage the development of offshore renewable generation which will have environmental benefits in terms of reduced CO₂ emissions.

As set out above the Government considers that the proposed connection process that will allow preparatory works (e.g. consenting) to be undertaken by the generator until the selection of a preferred OFTO bidder, who will then take on this work, may have significant benefits as it is more likely to reduce the time taken to develop a project than if this preparatory work were delayed until an OFTO had been appointed following a tender process. The benefits of, for example, a three month time saving in terms of a reduction in CO₂ emissions and less requirement for fuel for alternative CCGT generation are set out at paragraph 5.154.

Furthermore the Government considers that this approach allows a co-ordinated approach to the siting of onshore connections and associated routes and help to identify where environmental

⁴¹ <http://www.berr.gov.uk/files/file35531.pdf>

impacts can be minimised. If this were to reduce the number of connections required, there may be a reduction in negative environmental impacts.

An annual tender application window may offer benefits as a single OFTO developing a number of connections simultaneously may reduce negative environmental impacts. For example, this may mean fewer cables or laying a number of cables at the same time.

These proposals for connection via distribution systems may reduce overall costs which would more likely lead to an increase in the environmental benefits associated with an increased volume of offshore renewable generation.

Social benefits

As set out previously an increase in offshore renewable generation will have benefits in terms of energy diversity and reductions in CO₂ emissions.

Economic costs

Developing a significantly different approach to that which is currently used onshore is more likely to lead to increased costs in terms of the resources required to develop the process. This is also more likely to increase the time required to develop the process which may mean that offshore projects have to wait longer to connect to the onshore system. Delays to the implementation of the new regime are more likely to lead to cost increases for offshore generators and potential OFTOs as well as consequential costs in terms of shadow price of carbon savings.

The Government recognises that there may be costs if the initial connection offer is disputed and goes to determination and as a result the start of the tender process is delayed. Furthermore, there may be differences between the initial and final connection offer following the appointment of a preferred bidder as a result of further information becoming available through the tender process. If these differences are significant and the generator considers that the proposed agreement to vary the initial connection offer does not meet its requirements this may lead to increased costs.

A two-stage process may take longer to deliver a final connection offer than the existing onshore system, given that there is a need to run a tender process prior to the final connection offer being made.

There may be costs associated with the GBSO producing a document equivalent to the Seven Year Statement. Previous IAs estimated these costs to be between £30K-60K. However, this will be dependent on the amount and level of detail required and there will be a requirement to define the specific obligations in respect of offshore transmission developments

The use of an annual tender application window may lead to some projects being delayed if they have to wait for the annual tender application window to open once they have their indicative connection offer. This potential delay may increase costs.

Environmental costs

There may be increased costs and delays within the connection application process, for example if an annual tender application window is used. This may be more likely to lead to less offshore renewable generation which will have negative environmental impacts through a smaller reduction in CO₂ emissions.

A less co-ordinated approach in which the information available to all parties is reduced is more likely to lead to greater negative environmental impacts through increased numbers of cable connections which may involve multiple routes and connection points.

The benefits of a more structured approach to co-ordination via an annual tender application window may not be realised if generators were left to realise the benefits of such co-operation independently and optionally. There may be some projects at a more advanced stage that might not find it sufficiently beneficial to wait for other projects to allow them to be tendered for together. This lack of co-ordination may lead to increased negative environmental impacts.

Social costs

A reduction in the volume of offshore renewable generation will have costs in terms of energy diversity and a loss of reduction in CO₂ emissions.

Implementation Issues

Economic benefits

The Government is aware that changes to licences, codes and agreements are necessary to enable the implementation of the offshore regulatory regime and ensure that offshore generation is able to proceed. The Government believes that the proposals, which are those that it considers to be necessary to ensure the safe, secure and efficient operation of the network, will be beneficial to all players in the sector and that the general approach taken will help to ensure that the costs involved are kept to a minimum. This is more likely to reduce overall costs of offshore transmission connections.

Working with relevant code owners and other industry participants is more likely to lead to an agreed consensus on any changes that are required. This is more likely to ensure that any changes to licences, codes and agreements are fit for purpose and will lead to a more efficient system where burdens are more likely to be reduced.

The benefits of implementing changes to licences, codes and agreements are significantly greater than the costs associated with these changes as if the necessary changes were not implemented it is likely that offshore generation projects would be unable to proceed.

Environmental benefits

An efficient process that produces an agreed consensus on any changes that are required is more likely to lead to lower costs. Consequently, lower overall transmission connections costs are more likely to lead to a greater volume of offshore wind generation connecting which will have significant environmental benefits in terms of CO₂ emission reductions.

Social benefits

Adopting an approach which may lead to an increased amount of offshore renewable generation will have social benefits in terms of energy diversity and reductions in CO₂ emissions.

Economic costs

The proposed changes to licences, codes and agreements required to implement the new offshore regulatory regime are not expected to significantly change the overall costs of compliance (compared to the current arrangements), however we recognise that there will be changes to the allocation of these costs. As stated earlier, the proposed changes are those that the Government considers to be necessary to ensure the safe, secure and efficient operation of the network and overall, the Government does not consider the costs of these to be significantly higher than those faced by onshore players. Furthermore, the Government considers that the costs of not undertaking these changes would be significantly higher to developers and OFTOs in terms of lost development costs should offshore renewable generation not be able to proceed or OFTOs be unable to operate legally.

Environmental costs

If the changes to licences, codes and agreements were not implemented, there is a risk that offshore generation would not proceed. This is likely to have significant negative environmental affects in terms of loss of CO₂ emission savings.

Social costs

If the required changes to licences, codes and agreements did not occur, this may lead to a reduction in the volume of offshore renewable generation which will have social costs in terms of energy diversity and a smaller reduction in CO₂ emissions.

Annex C

Detailed background to the assumptions outlined in Chapter 5

Offshore wind generation projects

Barrow
Docking Shoal
Dudgeon East
Greater Gabbard
Gunfleet Sands I & II
Gwynt-y-Mor
Heysham
Humber Gateway
Lincs
London Array
Ormonde
Race Bank
Rhyl Flats
Robin Rigg (2 projects)
Shell Flats
Sheringham Shoal
Thanet
Triton Knoll
Walney
West of Duddon Sands
Westermost Rough

The costs of fuel for alternative CCGT generation

A 3 month delay to the development of 250-500MW of offshore wind will mean extra costs of £3.94m - £9.85m in terms of fuel costs if alternative CCGT generation is required to meet demand. This is calculated by taking the three month output from an offshore wind farm and multiplying by the extra cost of CCGT generation based on:

- An offshore wind farms variable cost of generation is zero;
- The principle alternative is a CCGT generation station whose variable costs are the fuel consumed;
- A thermal conversion rate of over 50%;
- Therefore, the extra cost of CCGT generation is approximately £30/MWh based on the year-ahead gas price of £0.50 / therm (December 2007) and a deduction of £3/MWh for system balancing costs;

	2008	2009	2010	2011	2012	2013	2015
Amount of offshore wind	1GW	2GW	3GW	4GW	5GW	7GW	10GW
Cost of fuel if alternative CCGT generation required (£m / year)	78.8	157.6	236.4	315.2	394	551.6	£788m

Table 3 – Costs of fuel if alternative CCGT generation required based on a range of offshore wind generation connected up until 2015.

Shadow price of carbon costs

This is calculated by taking the three month output from an offshore wind farm and multiplying by the shadow price of carbon based on:

- Every 200-500 MW of renewable generation that comes online with a load factor of 30% is assumed to displace 200-500MW of CCGT generation producing 0.1 tC/MWh⁴² or 0.35t/CO_{2e} (carbon dioxide equivalent) / MWh.
- Over a 3 month period an extra 131,000 – 328,000 MWh of renewable generation would result in savings of around 46 -115kt CO_{2e}.
- The shadow price of carbon is £26.5 per tonne in 2008⁴³ which increases by 2% every year thereafter.
- This equates to a monetary loss of roughly £1.22m - £3.04m over a 3 month period (£4.88m – £12.19m / year) at today's prices.

⁴² http://stats.berr.gov.uk/energystats/dukes07_c5.pdf

⁴³ <http://www.defra.gov.uk/environment/climatechange/research/carboncost/pdf/HowtouseSPC.pdf>

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