# Ofgem's response to the preliminary consultation on the 2005-6 review of the Renewables Obligation

June 2005

## Summary

This document provides Ofgem's formal detailed response to the DTI's Preliminary Consultation on the 2005-6 review of the Renewables Obligation and should be read in conjunction with the covering letter. It sets out Ofgem's more detailed comments on the proposals as well as general comments on the draft Regulatory Impact Assessment.

Ofgem's main views are summarised as follows:

- opposes extension of Obligation levels beyond 2015/16 at this stage;
- opposes extension of eligibility to energy from waste generation; and
- agrees that methodologies could be employed to reduce or remove support for technologies that are commercially viable or lower cost.

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# 1. Introduction

1.1. The Renewables Obligation ("RO") and the Renewables Obligation (Scotland) ("ROS") - together the Obligation or the RO - represent established Government policy, supported by legislation, for which Ofgem has administrative responsibilities. The Obligation is an economic instrument that provides suppliers with a market mechanism for achieving compliance with the obligation and its success depends on participants having confidence in the mechanism and the market.

1.2. Ofgem recognises that the Government is committed to the Obligation as the main policy measure to encourage the development of renewable forms of energy in the United Kingdom. Ofgem also recognises that the Government may want to make changes to the scheme to improve its effectiveness as experience of operating within the mechanism is gathered. As such, Ofgem welcomes the opportunity to respond to the preliminary consultations on changes to the RO and the ROS following the consultations on the Terms of Reference to be applied to this Review that took place last year.

1.3. Ofgem also acknowledges the opportunity it has had to input into the informal discussions held by DTI on the working arrangements and the opportunity to provide comments on the draft consultation documents.

# 2. Effectiveness of the RO to date

## *Assessment of the effectiveness of the RO to date*

2.1. In order to help formulate Ofgem's response to the consultation, and to move forward on the basis of evidence-based supporting analysis as cited in our covering letter, Ofgem has undertaken a review of the success of the RO to date. This aims to build on and supplement the work which appears in Chapter 2 of the DTI preliminary consultation document. However, it does not seek to address the other policy aims referred to in our covering letter. Ofgem does not consider that it has the remit to carry out such analysis, but obviously it should be carefully undertaken by the appropriate bodies.

2.2. The analysis is broken down into three sections: Generation, Carbon emissions and Costs. The first section looks at the growth of renewable capacity and output under the RO, and compares it with the target. The carbon section calculates the volume of carbon saved by the RO, on the assumption that, in its absence, the equivalent output would have been produced by non-renewable forms of generation. And the final section sets out calculations of the costs imposed by the RO and their impact on customers.

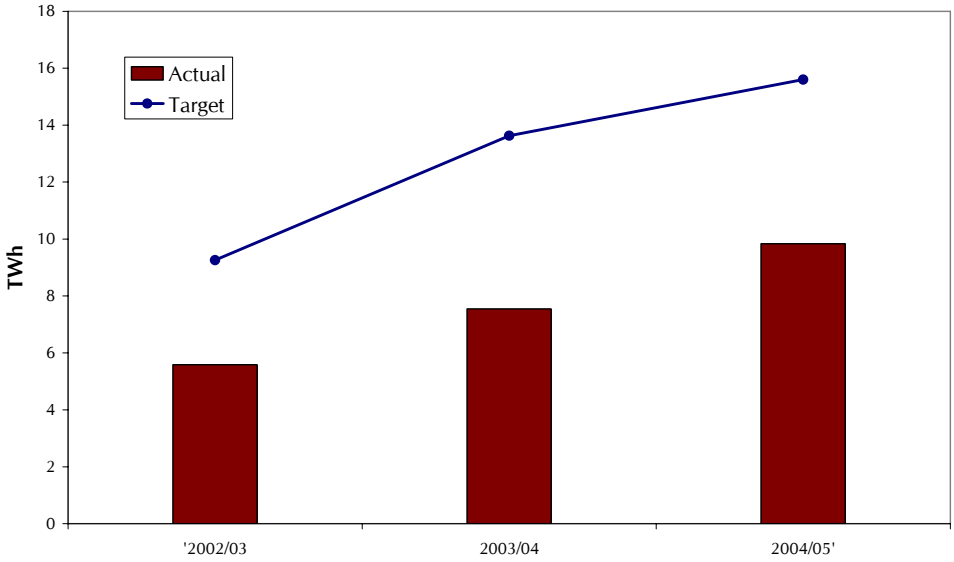
## *Generation*

2.3. The direct aim of the RO is to source a given percentage of electricity from renewable sources. Looking at the capacity and volume of generation that has been incentivised by the RO is one way of measuring its success. As a basis for comparison, we have also set out the volume of renewable capacity and output contributed by the RO's predecessor, the Non-Fossil Fuel Obligation ("NFFO").

2.4. Chart 1 shows the output of RO-accredited generating stations in the first three years of the scheme, and compares it with the target. The output for 2004/05 is

estimated, based on April 2004 – February 2005 data.

**Chart 1 - RO output v target**




*Source: Ofgem data*

2.5. Eligible renewables output has increased steadily, from about 5.6 TWh in 2002/03 to about 9.8 TWh in 2004/05. This is significantly below the estimated RO target of 15.6 TWh.[1] Suppliers have to pay into the buy-out fund for every MWh by which output is below the target. The fund is distributed to suppliers at the end of the period (in the proportion in which they have correctly presented ROCs), but the expected return from this distribution is accounted for in the price suppliers pay to generators for the ROCs, so to the extent that the expectations are correct it is the generators who should receive the full benefit of the RO subsidy. Some generators have indicated that they do not receive the full value of the ROC (ie, including all the buy-out) from suppliers. Suppliers incur legitimate costs through their participation in the ROCs market, in terms of, for example, credit risk and transaction costs, which are features of all markets.

2.6. The NFFO, in place since 1990, and the equivalent in Scotland, the Scottish Renewable Obligation ("SRO"), in place since 1996, provide for renewable electricity to be purchased at fixed prices for long term contracts (typically 15

[1] DTI projection of target; actual target for 2004/05 will not be known until later in the year.

years). 286 generating stations have been commissioned to date under NFFO and SRO, representing 1022 MW of capacity. This compares with 352 stations – about 1.5 GW – that have been commissioned under the RO in its first two years.

2.7. Comparability between the two schemes is limited by the very different nature of the mechanisms, in particular that the Government determined the size and structure (and therefore the generators) under each NFFO/SRO round and each round became more competitive than the last in terms of strike prices, whereas generators are free to develop under the RO and the rewards are greater. We would therefore expect the RO to produce more capacity.

2.8. Although we would expect renewables capacity to continue increasing over the lifetime of the RO, the rate of new build will be influenced by a number of 'external' factors (ie, other than market conditions and the level of subsidy). Obtaining planning permission often presents an obstacle to building new plant. It is possible that as more and more sites are used to build generating stations, planning permission will be harder to obtain as fewer suitable sites will be available.

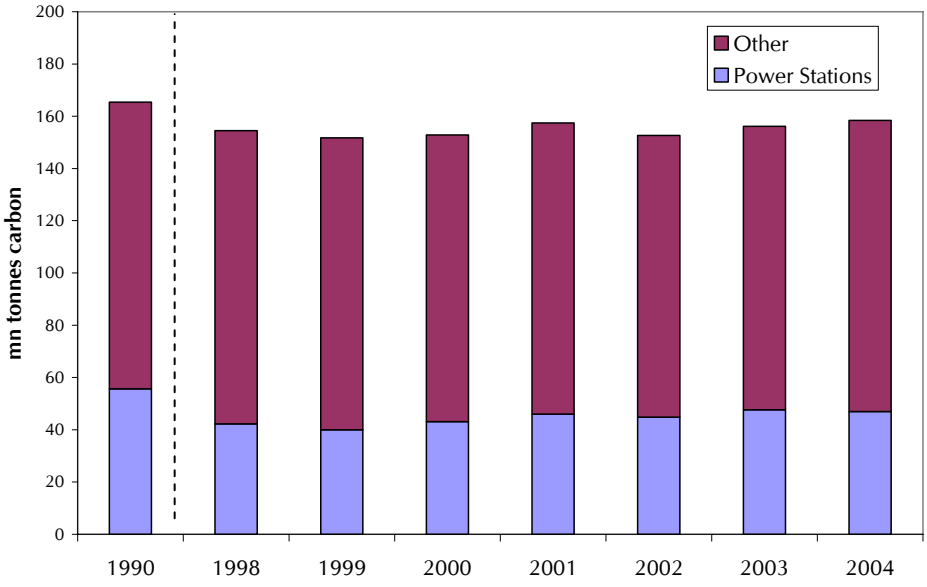
2.9. Grid connection issues may also affect the development of renewable capacity, particularly for offshore wind. Once regulatory issues regarding the offshore regime are resolved, and thus some uncertainty removed, it will be easier for developers to obtain investment. However, the costs involved in grid connection may still inhibit the building of some capacity.

## *Carbon emissions*

2.10. The underlying aim of the RO is to reduce the UK's emissions of carbon dioxide from power generation. This section aims to analyse to what extent the RO has achieved that aim so far. We have not considered here the carbon costs of manufacture and construction, which vary across different types of generating plant. We have also assumed that all sources of RO generation are zero-carbon emitting.

2.11. Chart 2 shows the UK's total carbon emissions over the past few years, split by power station emissions and emissions from all other sources. Both total and power station emissions have fallen since 1990, although the level has fluctuated in the last ten years. Carbon emissions from sources other than power stations have been relatively stable in that period (within a band of 108.5 to 112.3 tonnes per year), and the overall fluctuation is due mainly to year-to-year changes in power station emissions (which vary between 40.0 and 47.6 tonnes per year). This may be due to variations in weather patterns and in the fuel mix from year to year.

**Chart 2 - UK total carbon emissions**



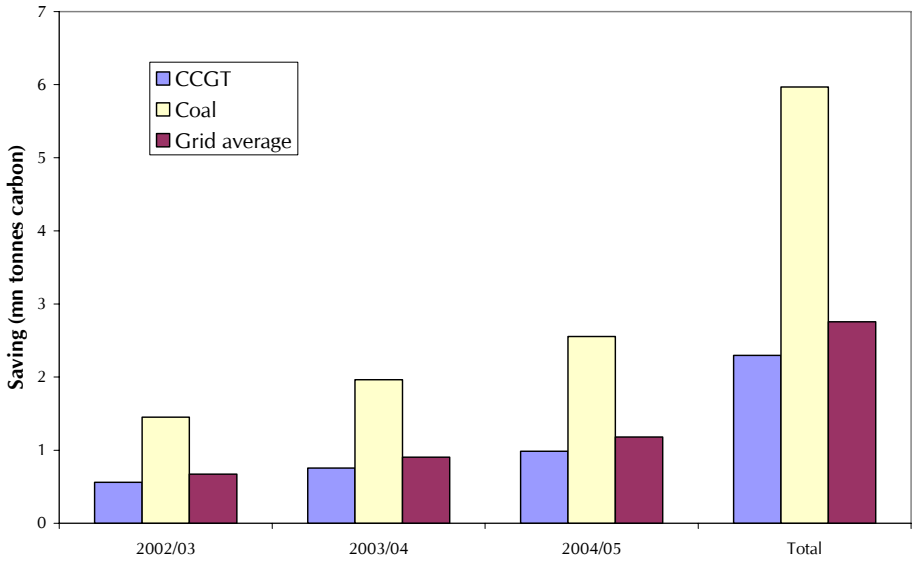

*Source: DTI Energy Trends. 2004 data is provisional.*

2.12. It is not possible to say how much renewable energy would have been produced in the absence of the RO, nor which forms of generation would have replaced the subsidised production. However, Chart 3 shows the carbon savings in the first three years of the RO, assuming all output produced under the RO had instead come from non-renewable sources. The levels of carbon shown in the chart are those that would have been emitted (on top of what was actually emitted) by the three generation sources considered.

2.13. We multiplied the number of ROCs issued in each year by the emission factors of other forms of generation, where the emission factor determines the tonnes of

carbon produced per MWh generated. Three types of generation are used as comparators: CCGT, coal and a grid average. In its first three years, the RO has saved the equivalent of about 3.8% of total UK 2004 carbon emissions, if we assume all RO generation has displaced coal generation, or 1.5% if CCGT generation has been displaced (relative to having no renewables support scheme in place).

**Chart 3 - Carbon savings from RO**




*Source: DUKES 2000 Annex B*

## *Costs*

2.14. The principal aim of the RO is to reduce carbon emissions through increasing the proportion of electricity supplied from renewable (carbon-free) sources, but that goal has to be balanced with the costs to consumers of pursuing it. This section looks at the economic costs imposed by the RO.

2.15. Since suppliers have the option of buying ROCs or paying the buy-out price, and the latter is fixed, the buy-out price sets a cap on the cost to suppliers, and hence to customers. As the price paid for ROCs includes a premium equal to the expected return to suppliers from the buy-out fund, the maximum cost shown below is likely to be very close to the actual cost. Generators are likely to gain most, if not all of the benefit from the buy-out fund, and the maximum cost

below represents a transfer from consumers to generators, through the suppliers' purchase of ROCs. Suppliers may be able to find some efficiencies in their purchasing strategies which would reduce costs slightly (if they passed the savings back to consumers), but probably not by more than a few per cent.

***Table 1 – Maximum cost to consumers of RO***

| *Year* | *RO (MWh)* | *Buy-out price* | *Max cost (£m)* |
|---|---|---|---|
| At April 02 | | | |
| 2002/03 | 9,231,568 | 30 | 277.8 |
| 2003/04 | 13,627,412 | 30.51 | 415.8 |
| 2004/05 | 15,600,000* | 31.39 | 489.7 |
| **Total** | **38,458,980** | | **1 182.4** |

*DTI projection in statutory consultation on the RO

## *Cost to consumers per tonne of carbon saved*

2.16. Using the carbon savings and total costs figures above, we can calculate the (maximum) cost to consumers per tonne of carbon saved. Compared with the grid average emissions, the RO has so far cost consumers £429 per tonne of carbon saved. Compared with coal generation, the figure is £198 per tonne, and with gas, £515.

2.17. To put these figures in context, the costs of abatement through phase I of the EU Emissions Trading Scheme ("EU-ETS") are estimated at £13 – 25 per tonne of carbon.

***Table 2 – Cost of carbon saved***

| Year | Cost of RO (£m) | Cost (£) per tonne carbon saved v: | | |
|---|---|---|---|---|
| | | **Gas** | **Coal** | **Grid average** |
| 2002/03 | 276.9 | 496 | 191 | 413 |
| 2003/04 | 415.8 | 551 | 212 | 459 |
| 2004/05 | 489.7 | 498 | 191 | 415 |
| *Total* | 1,182.4 | 515 | 198 | 429 |

## *Economic cost and transfer payment*

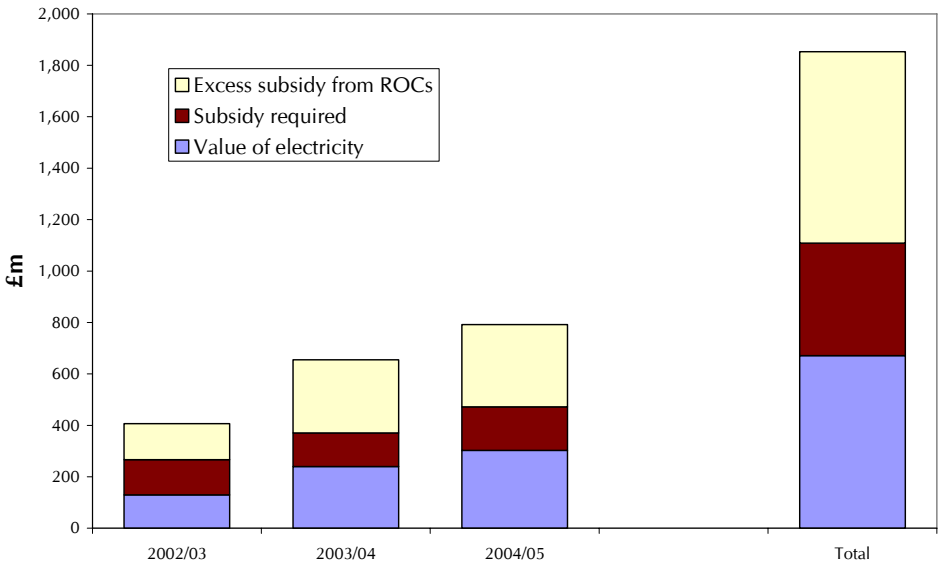
2.18. The RO is designed to pay the same price to all renewable technologies, in order to encourage the lower cost technologies to come to market first. Whilst Ofgem agrees that lower cost technologies will benefit, the design does not represent an efficient subsidy mechanism. In order to pay a sufficient subsidy to the most expensive technologies, the lower cost generators receive more than is required to make their output profitable. The 'excess' subsidy paid for each unit of lower cost electricity (eg from onshore wind) results in a deadweight loss. We estimate the size of this loss below.

2.19. Taking estimated unit costs for each renewable technology from the Enviros report for DTI[2], we calculated the economic cost of producing the level of output generated under the RO, and compared it with the cost paid by the consumer (ie wholesale cost plus subsidy). We have assumed a constant wholesale cost of electricity of £30/MWh over the period.

[2] The Costs of supplying renewable energy, A report by Enviros Consulting Ltd, DTI, 17 February 2005

2.20. The blue areas in Chart 4 below represent the cost of producing the RO output if it had been sourced at £30/MWh. The red area is the additional cost of renewables above CCGT, hence the blue and red areas together show the aggregate cost of sourcing that output from renewable sources. A small part of the yellow area will be accounted for by suppliers' legitimate costs in participating in the ROC market (eg transaction costs, credit risk etc). The rest is the surplus payment, or deadweight loss that results from the RO subsidy. The red and yellow areas together represent the total subsidy paid, equal to the values in the 'Max Cost (£m)' column in Table 1 above.

**Chart 4 - Excess subsidy from RO**




2.21. According to this analysis, £1.18bn of subsidy (red & yellow areas) has been provided under the RO over three years, of which only £0.44bn (red) was needed to cover the economic costs of producing the output. The other £0.74bn (yellow) is the value of the deadweight loss so far. The results are quite sensitive to the assumed wholesale price. For example, an average price of £45/MWh (approximately the current price) would raise the total value of electricity by 50%, ie from £0.67bn to £1bn. That would reduce the size of the required subsidy to only around £0.1bn, meaning nearly all (over £1bn, even when suppliers' costs are subtracted) of the RO subsidy is "excess". If high prices remain, this increase in excess subsidy will encourage more renewables build,

aiding progress towards the target, but reducing further the value for money of the RO[3].

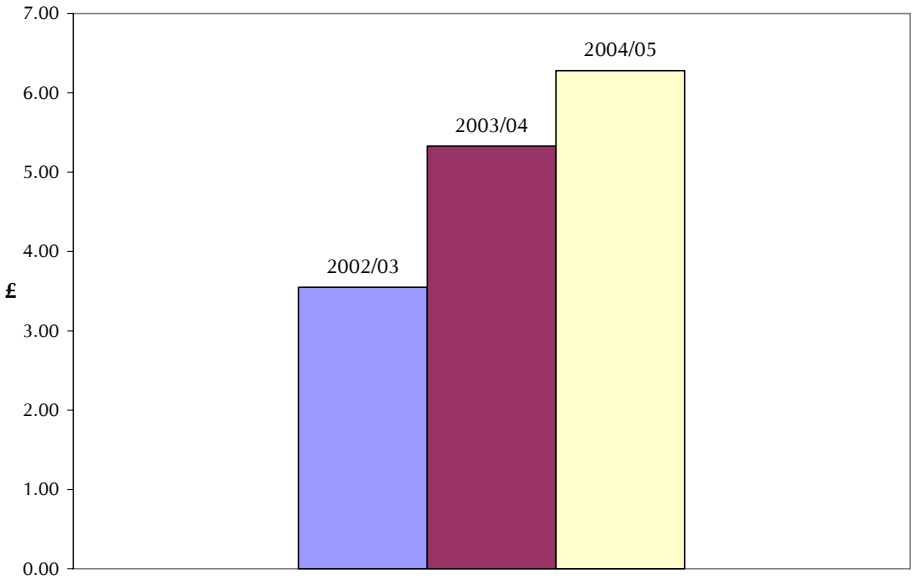
2.22. A part of the deadweight loss comes from the proceeds from NFFO auctions of ROCs, any surplus from which goes to the Fossil Fuel Levy ("FFL") fund. While part of these proceeds offsets the money that would otherwise be paid by consumers into the FFL for NFFO contracts, consumers are still having to pay for the ROCs generated by NFFO projects and purchased by suppliers under the NFFO auctions with ROC prices being higher, in the main, than NFFO contract prices.

## *Effect on customer bills*

2.23. We do not have any evidence to suggest how suppliers are allocating the costs of the RO between different types of customers. In Chart 5 we have assumed that costs are allocated to consumers roughly in proportion to their electricity consumption. The domestic sector accounts for approximately one third of total consumption, so the chart assumes one third of suppliers' RO costs are passed onto domestic customers. Using this assumption, a simple calculation shows that the subsidy cost each of the 26 million domestic customers an average of about £3.50 in the first year, around £5.50 in the second year and just over £6 in 2004/05, a total of about £15 so far.

[3] Note there may be a slight discrepancy in the distribution of the economic cost across years, since the total cost is based on ROCs issued in the financial year, whereas the economic cost (ie, value of electricity plus subsidy required) is based on the year August – July. ROCs are issued and transferred after the date on which the associated electricity was generated, and so August – July is the approximate time in which ROCs for the output produced in the previous April – March will be traded.

**Chart 5 - Cost per domestic consumer**




## *Conclusions*

2.24. The RO has been successful in incentivising the building of new 'green' capacity, and has increased the volume of electricity produced from renewable sources (from 5.6TWh to 9.8TWh). This is still some way short of the target of 15.6TWh set by the RO.

2.25. Carbon emissions from electricity generation have been reduced by the RO, although by how much depends on the assumed counterfactual (ie, on which type/s of generation would have been used to produce the output that was produced under the RO). Our analysis shows that over 2 million tonnes of carbon have been saved since the start of the RO, if it is assumed that gas-fired generation has been displaced by renewable output and nearly 6 million tonnes if it is coal power that was displaced. The latter is equivalent to approximately 3.8% of the UK's annual carbon emissions.

2.26. These savings have come at a cost. The RO subsidy has cost each domestic customer around £15 so far, and the cost will increase each year as the volume of renewable generation rises.

# 3. Energy from mixed wastes

3.1. Ofgem welcomes the detailed analysis carried out by Ilex in their report, "Eligibility of energy from waste – study and analysis", on behalf of the Government. The preliminary consultation accepts that the key findings of the Ilex report indicate that the generation of energy from mixed waste will increase by a substantial amount due to other factors, eg changes to how waste is required to be dealt with by local authorities. It seems clear from the analysis that extending eligibility would not deliver a significant amount of additional generation from electricity from mixed waste that would not have happened otherwise and there is uncertainty over the amount of any additional generators.

3.2. Ofgem's main concern relates to the suggestion that consumers should pay, through the Obligation, for a generation development that, based on the analysis in Ilex's report, would in the main and in all likelihood happen anyway. Ofgem notes the Government's stated reasons for examining whether there is any case for extending the eligibility rules on waste generation under the Obligation. In Ofgem's view, DTI's wishing to consider the case for incentivising a broader range of such projects is not sufficient reason in itself for extending eligibility to energy from waste. Although the current approach to energy from waste is not technology neutral, it mirrors that applied to hydro. The principle – that support is provided to those renewable technologies which require support – is crucial to the integrity of the RO. Ofgem does not consider that any of the reasons given, which relate to policy on waste management in the main rather than policy on renewables, outweigh the added costs and complexity that would occur as a result of the inclusion of mixed waste generation.

3.3. As above, it seems clear that such support is not required and would increase the deadweight costs, ie those costs which are being paid for renewable generation when such costs are not necessary, which the Government has stated it is looking to reduce. It would seem that the provision of such support would be of benefit to the energy from waste producers and to the disbenefit of other renewable technologies which might be higher cost and which the scheme is designed to support.

3.4. The consultation provides no evidence that any financial benefit would be realised by taxpayers through offset reductions in charges waste management companies would pass on to Local Authorities with subsequent reductions in Council Tax. What mechanism or incentive would lead the waste management companies to pass through any benefits to the local council?

3.5. On the specific proposals, Ofgem supports Option A which is to maintain existing eligibility rules. Option B would provide a windfall gain to those new projects which would have been built anyway and would add complexity for suppliers or would increase the cost to consumers for no significant gain. Ofgem has similar concerns in relation to Option C. In addition, in regard to options B and C, we consider that these would add issues for both generators and Ofgem as to how the fuel mix could be measured and demonstrated. Similarly maintaining the current rules while extending eligibility to the biomass fraction of mixed wastes from facilities using CHP would present measurement difficulties but these are not insurmountable. Any proposal should be considered in the light of any changes on the fuel measurement requirements that the Government is considering in parallel. Ofgem also notes that the proposal generally would add further complexity to what is already a very complex mechanism.

3.6. Amending the 98% rule would likely allow more fuels to be treated as biomass although no analysis on this is presented but would still require generators to provide the same monthly measurement evidence depending on what changes are proposed as referred to above.

# 4. Lower cost renewable technologies

4.1. Ofgem agrees that it is important that the Obligation is not changed in a way that affects investor confidence and prevents development of the most economic projects – providing that these projects are not significantly over-rewarded. The latter criterion is very important in the context of consumers paying large amounts of money for such development if such amounts are not necessary. The right balance needs to be achieved between maintaining investor confidence for those technologies that will require additional support and ensuring reasonable costs to consumers. Ofgem has previously encouraged the Government to set out its criteria for making judgements on costs being reasonable and would continue to do so. It is not clear that the Government has achieved this when we consider the amount of deadweight that is inherent in the Obligation as it is currently designed as shown in section 2.

4.2. We welcome the Government providing some of the rigorous evidence-based analysis referred to in the covering letter to this detailed response in the two accompanying reports, "The Costs of supplying renewable energy", Enviros Consulting Limited and "What is the potential for commercially viable renewable generation technologies", Oxera. Ofgem has commissioned Cambridge Economic Policy Associates/Climate Change Capital ("CEPA/CCC") to produce a report on the "Assessment of the benefits from large-scale deployment of certain renewable technologies". While the report is not definitive, we consider that it provides useful analysis. The report has been published on our website and is attached with this response.

4.3. CEPA/CCC were asked to assess the benefits to be derived from the large-scale deployment of onshore wind, offshore wind, and three marine technologies (tidal lagoon, wave and tidal stream).

4.4. The detailed methodology they followed is set out in section 2 of their report. In summary, for each technology they have:

- developed and used a financial model to estimate the trajectory of unit costs (progress curve) in the period to 2020 as cumulative installed capacity increases, using three methodologies to project costs forward;
- translated the results of the above into an assessment of the benefits (in terms of unit cost reductions) as aggregate installed capacity increases; and
- estimated the £/MWh premium over the cost of new CCGT plant that must be paid to each technology to enable it to earn the required return on capital (the 'environmental premium').

4.5 They maintain that the most robust part of the analysis is the estimation of the current unit equivalent annual cost (EAC). The estimated base case current unit EAC for onshore wind is around £41/MWh, £62/MWh for off-shore wind, £60/MWh for tidal lagoons and £187/MWh for both wave and tidal stream technologies. These are central estimates for a 'typical' project. Actual costs will vary significantly.

4.6 The report indicates that unit costs associated with each of the technologies are expected to decline as aggregate installed capacity increases. However, none of the technologies are projected to be able to compete with conventional generation, absent an environmental premium, if conventional generation is valued at market prices. They could potentially compete with conventional generation if the market price includes the cost of carbon.

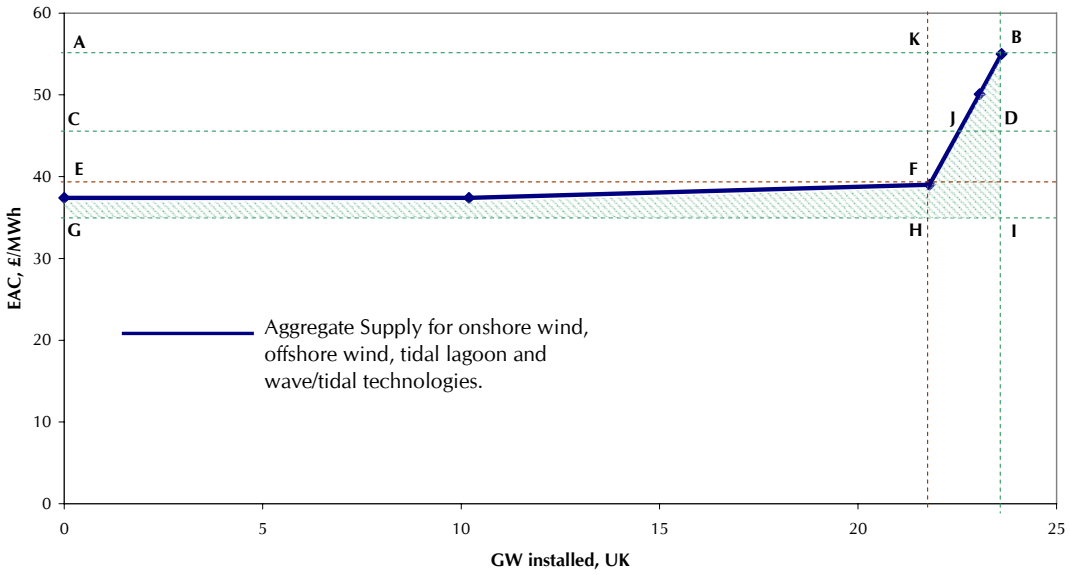
4.7 The report indicates that the environmental premium in 2020 is £9.32/MWh for onshore wind, £10.50/MWh for offshore wind, £22.05/MWh for tidal lagoons and £35.85/MWh for wave/tidal stream. In 2020, the $CO_2$ abatement cost for onshore wind is £23.24/tonne, £26.26/tonne for offshore wind, £55.13/tonne for tidal lagoons and £89.63/tonne for wave/tidal stream. By contrast, the $CO_2$ price on the EU-ETS market was around EUR17.25/tonne at the time of the report.

4.8 They stress that the unit 'environmental premium' plus the wholesale energy price will not equal the cum-ROCs price for renewable energy. With the current ROC scheme, the ROC premium is determined by the cost of the marginal (most

expensive) renewable capacity. This premium accrues to all qualifying renewables. Therefore, total payments to induce investment in a diversified portfolio of renewables will actually be much higher than the sum of the environmental premia estimated above.

4.9. The following supply curve is derived from the cost and capacity projections for the four technologies studied in the CEPA/CCC report. It shows GW installed for these technologies in 2020 against the equivalent annual cost ("EAC"), and illustrates the amount of subsidy required to achieve the installation and the amounts of excess subsidy depending on assumptions on the wholesale price.

**Aggregate Supply curve for Renewables, 2020**




4.10. For example, taking a wholesale price of £35/MWh, a perfectly targeted subsidy mechanism would provide a subsidy equivalent to the shaded area under the supply curve. The RO subsidy mechanism pays the marginal price of renewable generation (£55/GWh here) to all qualifying renewable technologies. The CEPA/CCC forecast of 23.5 GW installed is shown by the supply curve. The graph indicates that the RO would pay a subsidy equivalent to ABIG for this. If only 22 GW, ie onshore and offshore wind were employed, paying the marginal price would result in a subsidy equivalent to EFHG. Subsidising the last 1.5 GW of capacity thus results in a disproportionate increase in the excess subsidy. At a

wholesale price of £45/MWh, the amount of subsidy paid, ie equivalent to ABDC, becomes extremely large relative to the required subsidy (BDJ).

4.11. At a wholesale price of £39/MWh (line EF), the two lower cost technologies in the model (onshore and offshore wind) become profitable without a subsidy. If those two technologies were excluded from subsidy payments, and just the last 1.5 GW of capacity (from the other technologies which would remain eligible) was subsidised, the excess subsidy would be the triangle KBF, saving the amount equivalent to AKFE.

## *Cost calculations*

4.12. With a wholesale price of £35/MWh, £265m is required in 2020 to subsidise the capacity projected at the unit costs projected in the CEPA/CCC study (assuming a 30% load factor for all four technologies). With a wholesale price of £45/MWh, £31m of subsidy is required.

4.13. If the capacity projected in the CEPA/CCC report for these four technologies is delivered and the Government had further extended the Obligation level to 20.4%, it is very likely that this target would be met, which means the maximum ROC price would be the buy-out price in 2020. Assuming the buy-out price remains at £30/MWh (in real terms), the RO would pay about £1.9bn in subsidy to these four technologies in 2020. At a ROC price of £20/MWh (as it might be expected to be with a wholesale price of £35/MWh and a marginal cost of £55/MWh as shown in the chart above) the RO would pay about £1.2bn in subsidy.

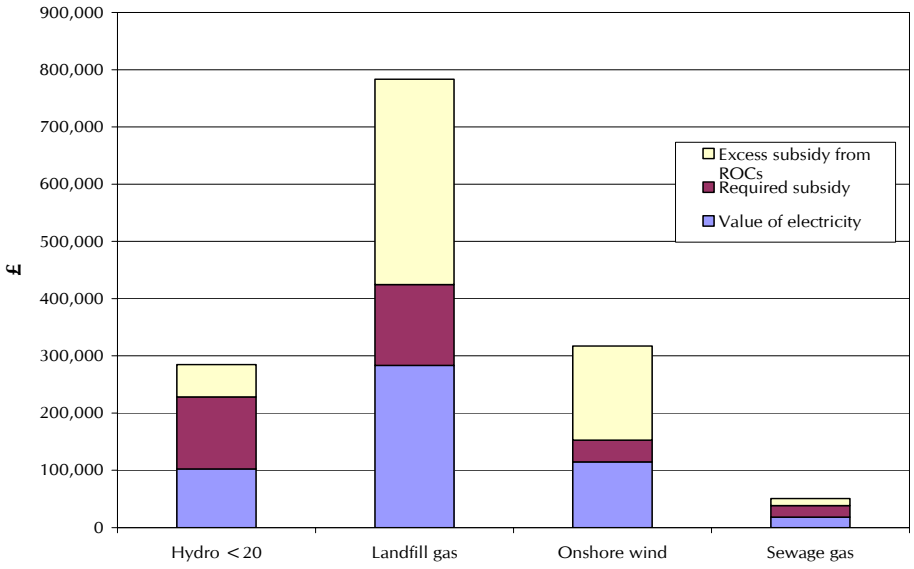
4.14. According to this analysis, the excess subsidy in 2020 may be between £0.98bn and £1.83bn, assuming ranges of £45-35/MWh for the wholesale price and £20-30 per ROC.

4.15. Turning back to the consultation, Ofgem remains to be convinced that the main findings as reflected in the consultation document, eg that it is the case that all currently ROC-eligible renewable technologies continue to require support under the Obligation, reflect the Oxera report's main findings. These make it

clear that there is a great deal of uncertainty about the costs and further careful consideration is recommended.

4.16. Ofgem has used the unit costs in the Enviros report and certain assumptions to demonstrate the possible excess subsidy to the four lower cost technologies referred to. Chart 6 shows the outcome.

**Chart 6 - Possible excess subsidy for four lower cost technologies**




4.17. The value of electricity is calculated by multiplying the number of ROCs issued to date for each technology by £30, which we have assumed in section 2 to be the average cost of wholesale electricity. This is roughly what the output would have cost if it had been produced from conventional sources. The required subsidy is calculated by subtracting the value of electricity from the product of the number of ROCs issued for each technology and the unit cost of that technology. This gives the total difference in generation costs between conventional and renewable generation. The excess subsidy is calculated by first working out the proportion of total ROCs issued to each technology, then applying that proportion to the RO target, to obtain a "target" for each of the technologies in each year. We then multiply that target by the buy-out price in each year, subtract the unit cost and aggregate for the three years of the scheme to date. This gives the amount of the subsidy that has been provided above the level needed to cover the costs of generation.

4.18. Ofgem agrees that there are clear benefits to adjusting the eligibility of different technologies to reflect the level of support they require, particularly the greater efficiency that would be achieved. Ofgem also notes that the Oxera report provides three states of the world and in regards to the EU-ETS allowance price, it would seem that this work may need to be revised given the recent increases which demonstrate that prices are edging more to the input assumption of 25 euros/tonne CO2. This would indicate that the effect of the EU-ETS as the market in allowances develops may be more material than the report acknowledges and at the very least requires revisiting before any decisions are made. The report also does not provide sufficient consideration of the stage at which the EU-ETS will have an impact where no further support for these lower cost technologies would be needed although it does acknowledge that the Government will need to keep a close watch.

4.19. Ofgem has published a report of a discussion day we convened on EU-ETS and the impacts on electricity consumers and this is available on our website, www.ofgem.gov.uk. Whilst the report deals with prices at the time of the seminar in February 2005, we acknowledge that prices have been more volatile than originally anticipated.

4.20. Using the criterion that support should not be given if significant new generation is not developed as set out in the Chapter examining the possible inclusion of energy from waste, then it is also true that support should not continue to be provided merely to encourage an insignificant amount of new generation nor to prevent there being an insignificant drop. Ofgem therefore encourages the Government to look closely at the levels of deadweight inherent in the Obligation and to develop further the methodologies suggested for removing or reducing that deadweight.

4.21. Ofgem understands that in relation to NFFO/SRO projects, the NAO report questioned the inclusion of these projects as being eligible under the Obligation. The FFL was previously used to support these projects and the surplus from the auctioning of the accompanying ROCs under the NFFO auctions referred to in section 2 is currently in the region of £167m for E&W and £9m for Scotland. If the Government takes NFFO/SRO generating stations out of the scheme, this

would reduce the amount of additional subsidy as set out in section 2 of this response. The NFFO/SRO generators would remain eligible for receiving support via the FFL mechanism. Consequently this may have to rise to provide that support but only by the amount needed to cover the NFFO/SRO contract prices therefore it is likely that this would be cheaper for consumers. However, providing there was sufficient money available from the surpluses that have accrued, consumers' bills may not be affected directly. It is likely that the surplus is to be used by the Government but the purpose of such use has not been made clear. Ultimately, it would be appropriate for this money to be returned to consumers although Ofgem recognises that there might be practical difficulties with this.

4.22. The consultation asks for views on not providing ex-NFFO/SRO projects with Obligation support once their contracts have expired. It is true that these projects will have had support for fifteen years but at a lower level than projects which benefit from support under the Obligation. This should also be compared to renewable technology projects which will receive support for the full period of the Obligation yet which may not require such support. Removing the ex-NFFO/SRO stations at the point their contracts expire and/or NFFO/SRO stations now would leave a bigger gap between qualifying renewable generation and the target. Fewer ROCs would be available in the market and so there would be increased competition between suppliers driving up the ROC price.

4.23. The principle of whether any proven technology continues to require support and by how much is the one that should be applied to any decision about removing or reducing support. If clear criteria are set for the removal or reduction of support, then the timing of any policy change should not affect investor confidence as the signals for the market will be set and investors can make decisions accordingly.

### *Full removal of eligibility*

4.24. If technologies not requiring support were completely removed, it might mean that there would be a net decrease in qualifying generation as higher cost technologies would not produce as much generation for the same amount of

money. But these higher cost technologies would have more money available to them for investment than now. However, the actual effect will be dictated by the market and as the removed technology would still be producing renewable generation it would still be contributing to the Government's aim of reducing emissions and increasing the energy contribution from renewable sources.

### *Phased removal of technologies*

4.25. This seems a reasonably straightforward way of reducing support and would not impact on suppliers in terms of potential compliance issues with such ROCs being limited in a similar way to co-fired ROCs, for example. There would be calculation issues and so an increased administration burden on Ofgem.

### *Shortening the period of eligibility*

4.26. The report does not seem to have analysed the effect of the various NFFO/SRO rounds in reducing prices although this might be useful in terms of assessing when a technology might no longer need support or the same level of support. However, Ofgem's initial view is that this option would be similar in effect to the phased removal of technologies without the calculation issues and resource implications of the phased removal option.

### *Segmentation of the RO*

4.27. This option would present added complexity for Ofgem and suppliers.

# 5. Obligation levels beyond 2015/16

5.1 Ofgem agrees with the Government's initial view that a further decision on the level of the Obligation is not necessary to incentivise new developments of the lower cost renewable technologies. In addition, if support is to be removed or reduced for these technologies, as Ofgem considers it should be, then more money will be available to the remaining higher cost technologies. Also, it is not clear how the support which would be provided under such an extension might be justified as renewable costs come down and the EU-ETS continues to impact electricity prices. Ofgem further agrees that any decision to increase the level would add to the deadweight currently in the scheme and any decision needs to be taken in the light of the decisions on the other proposals being considered. Therefore, Ofgem agrees with the Government position that a further decision on the level is at the very least premature.

5.2 Any such decision should be based on analysis of the pertinent factors including, eg how planning is going as the rate of successful development will play a part in determining ROC prices and so future development. Criteria are needed for any future decision and if these criteria are clear and transparent, the market can respond accordingly with investor confidence not being dented. Such criteria should be based on what the Government is trying to achieve through any such extension. This is not entirely clear given the overarching aim of the scheme and the fact that there is no target for 20% renewables by 2020 although Ofgem acknowledges the Government's aspiration in this regard.

5.3 The Government's alternative options are of real concern as they appear to represent a fundamental shift in the policy underpinning the RO, ie that support is given where needed but not guaranteed and particularly in light of the Government's acknowledgement that there is deadweight inherent in the scheme and its commitment to review this. The alternatives would provide a floor price for ROCs even if the Government's 2010 target was met – which DTI has confirmed it sees as the main objective for the scheme. Costs to consumers would increase and the criterion that such costs should be acceptable would

appear to have no weight attached to it. The consultation provides no evidence that such alternative options are required.

5.4 At this stage, Ofgem would strongly oppose any such decision as we consider that the case for such an extension has not been made. Any such case should be based on further detailed and rigorous analysis on what would be achieved in terms of renewable generation and carbon savings. While it should certainly draw on views from industry, it should include critical analysis of these.

# 6. Combined Heat and Power and the RO

6.1. Support for CHP is a policy decision for Government as is the method for support but Ofgem has an interest where additional costs to consumers would be involved as would be the case with the proposal outlined in the consultation. Ofgem welcomes the criterion that the cost to consumers would need to be acceptable in view of the carbon savings anticipated. Ofgem considers that the Government should be consistent in using this as one of the criteria for any decision in the Review and looks forward to the Government providing such analysis as the Review progresses.

6.2. Ofgem notes that the Cambridge Econometrics updated quantitative analysis is not yet available. Ofgem looks forward to this analysis as the consultation document implies that this will feed into the Government's decision on the proposal being considered.

# 7. Operation of the ROC market

## *Liquidity of the ROC market*

7.1. Ofgem considers that the level of importance that should be attached to liquidity within the ROC market should be analysed in relation to the following areas:

- the current liquidity and scope for increased liquidity in the ROC market;
- the effect on investment in renewables and delivery of renewable generation; and
- the likely change in costs to consumers.

7.2. For example, at the very least any measure to improve liquidity should be cost neutral with no additional cost to consumers as a result and should not be pursued as an end in itself.

7.3. These areas relate to the criteria set out in the Regulatory Impact Assessment ("RIA") against which the Government has said it will make any decisions. Ofgem notes that Chapter 1 of the consultation document presents the RO to be effective at stimulating renewable generation. If the RO is already effective at stimulating renewable generation then it is questionable whether increasing liquidity should be of great concern.

7.4. Ofgem acknowledges that ROCs which represent a compliance tool are generally sold in bundles with electricity generation. Evidence is required that the existing liquidity levels are having an adverse effect, and the size of any adverse effect, on investors' decisions to invest in renewable generation. It is also important that the likely cost of any change to the Obligation to increase liquidity is properly understood. The current contractual arrangements between generators and suppliers may be the preferred contractual method for generators if they value long-term certainty as a way of securing investment. Suppliers are also generally in a better position to spread risk than generators so the current structure of the market may represent the optimum.

## *Amending the rules on ROC revocation*

7.5. ROCs can be bought and sold in the market and so represent a commodity. There are uncertainties relating to the quality of goods in many commercial markets and the ROC market should not be treated differently. If generating stations ensure that the information they provide is accurate and reliable and the onus is on them to do so then there should be no fear of revocation.

7.6. It is not clear that ROC revocation is resulting in reduced effectiveness of the Obligation. As the current level of ROC revocation is low, the risk for the supplier of holding a ROC that is later revoked is also low it would seem therefore, that objections to revocation are theoretical rather than real. Ofgem has several general areas of concerns about amending the rules on ROC revocation and some more detailed concerns about the suggested alternative measures.

7.7. Ofgem's experience in the administration of the RO has been that ROC revocation has acted as an effective deterrent to generators potentially behaving fraudulently or providing incorrect data. So far Ofgem has not discovered any issues of fraud under the RO. Ofgem publishes our experience of ROC revocation under the RO on our website, www.ofgem.gov.uk. As yet Ofgem does not consider that the case has been made for a change to the rules on ROC revocation and change should only be implemented on the basis of strong evidence that change is required and that the new sanction would be as effective a deterrent. All practical implications of any change to the current system of revoking ROCs should also be thoroughly investigated, the change should be easy to implement and the extent of the work involved should match the size of the problem.

7.8. Ofgem's view is that contracts appear to deal sufficiently well with ROC revocation, eg through clauses which compensate the buyer if a ROC is revoked. In addition if increased liquidity is not seen as a priority then the current contractual arrangements in the market will continue to be sufficient.

7.9. Ofgem's detailed views on the suggested alternative approaches are set out below.

## *Withholding ROCs*

7.10. There are several issues that should be considered if withholding ROCs is to be introduced to the RO.

7.11. There would be resource implications relating to Ofgem's administration of the RO. The ROC Register and internal database systems would require change and there would be a new learning curve for those involved in the administration of the scheme as well as those involved in the scheme itself, eg generating stations and suppliers. In an already complex scheme there is the potential for more errors to be made, eg issuing ROCs to generating stations when they should not be issued. Ofgem considers there needs to be an appropriate balance between increasing the administration burden and meeting every request for change.

7.12. Such a change could also increase confusion amongst generating stations and has the potential to cause conflict where they do not understand why ROCs are being withheld. Ofgem has put considerable resource into making clear to generating stations what the current legislation requires. If confusion amongst generating stations and industry was to increase this could reduce confidence in the ROC market and so reduce the potential for investment in renewables. There would also be administration costs involved for generating stations and suppliers in changing their contracts.

7.13. If this proposal is considered further several of the practical issues raised in the consultation and some other issues will first need to be addressed. Ofgem has outlined these below and will be happy to work with the Government on these issues.

**(1) How would ROCs issued under NFFO and SRO contracts be treated?**

7.14. As stated in the consultation document withholding ROCs would be more complex where ROCs are sold under NFFO and SRO contracts. As the NFFO electricity along with ROCs are currently sold under six month contracts (and it is likely that SRO ROCs will be handled in a similar way), this raises several questions:

- how would withheld ROCs be treated under such contracts and would this lead to any greater certainty for purchasers than the prospect of ROCs being revoked (the issues would be the same even if the contracts were to move to annual);
- what would happen if ROCs were withheld over the course of more than one six month contract;
- how would additional metered output be dealt with;
- what would be the effect on NFFO auction prices;
- how would the risks involved in holding NFFO ROCs change; and
- how would the two latter points impact on the surplus in the FFL fund?

**(2) How would the issuing of ROCs part-way through the month be dealt with?**

7.15. If the eligible output was greater than the number of ROCs to be withheld in that month the method used to deal with this would need to be simple to avoid the potential for error.

**(3) How would seasonality be dealt with equitably?**

7.16. Some renewable technologies are seasonal in terms of the amount of their output. As such, they may end up being dealt with inequitably in terms of cash-flow depending on the time of year. A station generating electricity from wind is likely to make up their shortfall more quickly in winter than in summer because it is likely to generate more in the winter months. This could have different cash-flow implications, and how quickly a generating station began to receive ROCs again would be dependent on what point in the year ROCs were being withheld.

**(4) How would this method affect the risks involved in buying ROCs under long-term agreements?**

7.17. If investment houses and banks value long-term power purchase agreements between generating stations and suppliers when deciding whether to invest in

renewable generation then whether ROCs have the potential to be revoked after having been issued or have the potential to be withheld before being issued, there will still be similar risks involved. Most ROCs are sold bundled in this way.

**(5) What would happen if Ofgem withdrew accreditation from a generating station?**

7.18. As acknowledged in the consultation a fine might not be appropriate so there would need to be a suitable deterrent for a generating station whose accreditation had been withdrawn.

**(6) How would the statistical value of ROC data be affected?**

7.19. The number of ROCs issued is currently used by suppliers to establish an estimated value for ROCs. ROC data is also used as a robust source of disaggregated data to demonstrate the development of renewable electricity generation. If ROCs were to stop reflecting electricity generation other sources of information would be needed to replace the numbers of ROCs issued. This would have associated resource costs.

**(7) Would withholding ROCs over-ride the principle of ROCs not being revoked due to a change in gross output and/or input electricity?**

7.20. Currently all ROCs are issued on the basis of gross output and input electricity notified to Ofgem within the specified two month period. Ofgem must disregard any changes to these figures after that time even if ROCs have not yet been issued. Ofgem supports this principle. We assume that withholding ROCs would not be an exception and that the issue of ROCs based on this principle would continue. Any change to the principle could serve to increase uncertainty over whether the number of ROCs that have been issued will change in future rather than reduce it.

## *Fining*

7.21. The introduction of fines to generating stations under the RO could increase costs and have resource implications for Ofgem. Ofgem is opposed to having

such a power in regard to renewable generating stations. Ofgem does not consider that there is sufficient evidence to warrant such a change and in any case, further work is necessary on the practical implications of introducing such a measure. Ofgem agrees that there would need to be a change to the primary legislation to bring renewable generating stations under such an enforcement regime.

7.22. Issuing financial penalties can be an extremely lengthy resource and costly process. For example, any one decision requires the Authority to sit at least three times and each hearing must consist of at least three Authority members. Ofgem has published a process for the issuing of financial penalties on our website, www.ofgem.gov.uk.

7.23. The consultation suggests that fines would be used in instances of fraud. The level of proof required for fraud is higher than the level of proof required under standard civil law. The higher the standard of proof the more difficult it would be to impose a financial penalty, this then makes the effectiveness of a financial penalty for generators questionable under the RO. Were a case of fraud to be found that resulted in a large financial benefit to a generating station from the scheme, it would seem more appropriate for this be dealt with by the police.

7.24. Ofgem has outlined some practical issues with this proposal below.

**(1) What would happen if generating stations did not pay or could not pay a fine?**

7.25. Ofgem would not want to be in a position of having to chase a 'debt'. It is not clear what the outcome would be. If fines were not paid and there was no further sanction, using fines as a deterrent to inappropriate behaviour would lose any value. This calls into question whether fines would work as an equally effective deterrent to the revocation of ROCs. It should be noted that Ofgem does not have a close regulatory relationship with exempt generators (unlike with licensed suppliers).

**(2) On what basis will fines be set?**

7.26. Clarity as to how the size of a fine would be determined would be required. Would it for example directly relate to the number of ROCs wrongly issued? It would be important that this was clear and transparent so that Ofgem was not put in the position of determining the penalty any one generating station would receive.

**(3) By whom would the fines be set?**

7.27. Would the Authority have to set the fines? In addition to the discussion above, if such a decision was to be made by the Authority then this would impact upon Authority time and resource. This could have implications on the make-up of the Authority. Whilst Authority members at present have time for other commitments, if the Authority was to meet more often to hear any case involving enforcement against a generator under the RO the Authority may have to be made up only of members who are able to commit a larger amount of their time. This could restrict the body of people available to sit on the Authority and have cost implications. There is also a question as to whether such decisions need to be escalated to the level of the Authority. All the instances in the past where Ofgem has revoked ROCs have related to relatively minor issues and have not been escalated higher than the head of the team. This level of involvement would seem appropriate for the decision being made as it includes the necessary expertise and Ofgem considers there is no justification for escalating such a decision.

**(4) Where would the fines go?**

7.28. Would the fines, for example, go into the Consolidated Fund? Dependent on where the fines would go, there would likely be additional costs.

## *Removal of accreditation for a period of time*

7.29. Ofgem would be interested to know how this would work in practice and what would decide how long accreditation would be withdrawn for. If this option as to be pursued, it should be simple to implement and the length of time that accreditation would be withdrawn for should be clear and transparent. If this

was not the case the temporary removal of accreditation for such purposes could increase the potential for disputes putting pressure on resources at Ofgem.

## *Allowing non-suppliers to present ROCs*

7.30. Whilst Ofgem considers that such a change would fall under the terms of reference, such a significant change to the operation of the RO might serve to undermine long-term investor confidence. If increased liquidity in the market is not a priority in itself then the case needs to be made for allowing non-suppliers to present ROCs. Ofgem agrees that such a change could not be implemented from 1 April 2006.

7.31. Ofgem has the following detailed comments:

***Practicality***

7.32. The proposed method for non-suppliers to produce ROCs would seem to work as a basic principle but it would add complexity to what is already a complex scheme. If this were to be considered seriously there should be evidence to show that such a significant change is necessary and some of the details would require further consideration.

7.33. It is important that measures to deal with the percentage limits on banked and co-fired ROCs, the late payment fund and mutualisation are simple to administer and easy for those involved in the scheme to understand. Ofgem agrees that further work would be needed in these areas to ensure this would be the case. Otherwise, for example, non-suppliers may not understand what they would be entitled to receive for each ROC presented.

7.34. Allowing non-suppliers to present ROCs would make the administration of the supplier compliance process much more complicated. Again this would have resource implications for Ofgem and could result in more confusion within industry about the operation of the scheme. As it would not be an obligation on non-suppliers, would they meet the deadlines required to ensure the obligation works? The Government will need to consider where its priorities lie as the added complexity in the administration of supplier compliance could push against the time constraints for the distribution of the buy-out fund. This would

run counter to any aim to tighten the timeframe for the distribution of the buy-out fund (as set out in section 1 of Chapter 8 of the consultation document).

***Impact on operation of the Renewables Obligation and ROC market***

7.35. Additionally the Government might need to consider what effect this would have on liquidity in the ROC market. First, there is currently scope for traders to hold onto ROCs particularly as banked ROCs are accepted in the next year although with only one percent of suppliers' obligations being met using banked ROCs in the second year, this indicates that holding onto ROCs is not a high priority for traders. Second, suppliers are well placed to spread any risk in holding ROCs so it is questionable whether it would be more attractive for generators to hold onto ROCs. They may not be so well placed to spread risk and so may prefer to sell their ROCs to maintain a steady cash-flow.

***Impact on cost to consumers***

7.36. Ofgem considers that there would be issues about costs to consumers with this proposal. Before a decision is made to allow non-suppliers to present ROCs there should be evidence on what the cost to consumers is likely to be.

## *Market Operator, Administrator or Oversight role*

7.37. Ofgem agrees that it is not clear what the actual issue is that industry is seeking to resolve. Ofgem's role is to administer the Obligation according to the rules set out in the legislation and has no remit in the ROC market. It seems that there may still be some confusion in industry about this role.

7.38. Ofgem considers that the Government should be cautious about any change in this respect, not only because there is no evidence that this is needed but also because of the costs involved in such a change. Primary legislation would be required to remove responsibility in some of the areas of administration from Ofgem and while Ofgem is not necessarily opposed to this, we are clear that we would be opposed to being left in a position where we were having to make decisions involving large sums of money, eg in regard to an individual participant's commercial considerations, without the necessary legislation. Such decisions should not be for Ofgem but are more properly for the Government.

We are also concerned about the potential for duplication of work as some aspects would still remain with Ofgem. Additionally, a new framework to underpin any change would be required and so Ofgem is not convinced there would be a decrease in the regulatory or administration burden. Clearly defined criteria with no scope for 'creep' would be required for any code that the Government wishes to sponsor. Included in such criteria would have to be the necessary process for consultation of affected parties and timings for any change proposed under such a code as well as the basis for decision.

### *Appeals mechanism*

7.39. Ofgem does not consider that there is any evidence that such a mechanism is needed but would welcome examples that this is the case to enable us to properly review the request.

7.40. Ofgem agrees with the Government about the likely issues that would arise with such a mechanism. For example, there would be resource and cost issues. Ofgem has also other concerns in relation to such a proposal. For example, it would be inappropriate to create a legitimate expectation which parties can rely upon that we will review every matter on which we receive a query as to our interpretation – to avoid unhelpful precedents we should only undertake to review matters if new information is produced to us. We should also make it clear that we will not review if the purpose of the query is clearly to frustrate best regulatory practice. Ofgem reiterates our undertaking to abide by our new best regulatory practice duty and our current good practice, which has been in place for some time, through which participants can make cases to us. We will continue to consider valid legal arguments submitted by industry as we have done so in the past. We would point out that we will not normally undertake to seek Counsel's advice except at our discretion and for our benefit and that any opinion gained would be legally privileged and for our use only. Although on occasion we could seek Counsel's advice, instructing jointly with DTI, if thought appropriate. Otherwise, Ofgem considers that if the Government wants an appeals mechanism, then a mechanism on a formal legislative basis should be introduced. It is imperative that the final arbiter must be the correct legal

interpretation of the statute as this is what provides certainty to all participants. To date, our interpretation has not been seriously challenged.

# 8. Administration and other detailed technical or definitional issues

## *Section 1: Timetables and processes within the Obligation*

### *ROC issuing*

8.1. If the deadline for the submission of data for ROC issue was to be brought forward to by the end of the month following the month of generation, it would be possible for Ofgem to issue ROCs without too much difficulty. However, there is a large resource requirement for the monthly ROC issue and so there would need to be a long transition period to allow Ofgem to balance its resource needs and put in place the necessary systems. Ofgem does not have the resources to carry out two ROC issues simultaneously. While Ofgem has made efforts to streamline the ROC issue processes, eg introducing standard data templates, we are also considering whether any further streamlining, eg in relation to the systems, can be achieved.

8.2. Ofgem has identified the following issues with this proposal and would like to see these resolved if this is to be considered further:

- **further investigation of the effect on the frequency of issue of replacement ROCs and/or revocation of ROCs** – with a tighter timescale there is greater potential for generating stations to make mistakes in the submission of data. This could lead to an increase in the number of revocations and increases the possibility of disputes. A rise in either of these would lead to a higher workload for Ofgem;

- **the length of time required for the receipt of biomass sampling information** - generating stations that are required to provide us with sampling information may find it difficult to provide this within a one month deadline. The audit report of a typical co-fired station states that it takes between four to six weeks to get sampling analysis back from the

laboratory after samples are collected. As generating stations sample throughout the month it is likely many co-fired and biomass generating stations would find it difficult to meet a one month deadline for their sampling information. If such generating stations could not get their sampling information to us within the deadline Ofgem could be put in a position of having to perform several more ROC issues for individual generating stations. This would have resource implications and it is not an efficient way to manage the scheme.

There are currently 43 generating stations accredited as biomass or co-fired all of which could find it difficult to get all their information to us within the timeframe. These stations received over a fifth of all the ROCs issued in 2004/2005;

- **interaction with the issue of Renewables LECs –** if generating stations continue to have two months to send us Renewables LEC data we could potentially receive two sets of data from most RO accredited generating stations. This would prevent the dual calculation of ROC and LEC data and so increase inefficiency and resource needs. Ofgem would not want to be issuing ROCs for one month of generation and at the same time be issuing Renewables LECs for the previous month of generation. This could lead to confusion which increases the potential for errors; and

- **accuracy of data submitted –** information received from Elexon in relation to half-hourly data appears to indicate that such data will not differ that much in accuracy if submitted within a month after generation. The Government should be satisfied that it is possible for generating stations to submit accurate data within a one month timeframe before proceeding with this option.

8.3. Ofgem supports the clear data cut-off point for the submission of monthly information by generating stations. If the timescale for the submission of generating stations data were to be reduced a clear cut-off point should remain in place with generators having to submit their data on time. It is also important that a clear cut-off point remains for small generating stations to change from annual submissions to monthly submissions and that such a cut-off point is

altered according to the change in the data submission cut-off, ie if the submission of data is brought forward a month then Ofgem should be notified a month earlier whether a small generating station wishes to be issued ROCs on an annual or monthly basis.

### *Article 4(10)c declaration*

8.4. Ofgem welcomes the proposal to allow the submission of the article 4(10)c declaration on an annual or one off basis.

### *Input electricity*

8.5. Ofgem supports the proposal to disregard input electricity less than or equal to 0.5% where only an export figure is available as this would extend the option to more generating stations. If generating stations are no longer required to detail input electricity less than or equal to 0.5% of gross output or export the input electricity figures should still be measurable and auditable. This is important as removing the requirement to disclose such information monthly increases the potential for abuse.

### *Measurement of fuels*

8.6. The verification and calculation involved in the sampling and measurement of fuels is complicated and time consuming for Ofgem and so any simplification to the measurement of fuels which maintains rigour would be welcome.

8.7. Ofgem supports the first suggestion of deeming that all the output is from biomass where only a small amount of fossil fuel is used to make this more consistent with other schemes. However, if this were to be implemented the current rigour should remain and this should not result in deeming being made available in other situations.

8.8. One way the Government could reduce the burden for biomass only stations would be by changing the definition of biomass so that evidence of sampling from such stations is not required on a monthly basis. The legislation could allow Ofgem to be satisfied with past evidence about a particular fuel over a

sufficiently long period of time, eg a year and check the ongoing sampling procedure as part of the audit process. This may reduce the current rigour but as many of the biomass stations are 100% biomass anyway it may not be too much of a concern.

8.9. Any change in the legislation in relation to measurement away from the generating station is a policy decision for the Government. Ofgem's view, on the basis of the current legislation, is that fuel should be measured at the generating station, as that is where the fuel is used. Ofgem has set up a procedure which accepts information from the generator on a good faith basis subject to this information being satisfactorily auditable. If the fuels are measured away from the station particularly overseas, satisfactory auditing would become onerous, expensive and impractical, if not impossible. There would be considerable administrative complexity added to the process, leading to additional costs of operating the scheme. We also consider that there is potential for contamination of the fuels, changes in transit, scope for error, and scope for abuse. This applies whether those fuels are 'blended' or not, away from the generating station.

8.10. Ofgem's measurement and sampling guidelines describe what we are likely to regard as a valid approach for the measurement and sampling of each fuel at the generating station. They do not rule out other possible approaches, providing they are equally valid. It is open to generators to put forward proposals for other approaches for Ofgem's consideration.

## *Timetable for supplier compliance*

8.11. Ofgem is tentatively supportive of bringing forward the deadline for the submission of suppliers' data to 20 June and it is likely Ofgem could accommodate this without too much change to current working arrangements. On the basis of information submitted to Ofgem for the purposes of compliance last year it would appear that this would not have a significant effect on the overall size of the RO although there may be some small differences for individual supplier licences.

8.12. Ofgem does not support condensing the timeframe for the distribution of the buy-out funds particularly in an environment where this process is to become more complicated and time-consuming for Ofgem. Ofgem has no interest in taking any longer than necessary to distribute the buy-out fund and demonstrated this last year, distributing the fund in just over three weeks. Maintaining the current timeframe would still give suppliers a definite end date whilst allowing Ofgem the time to deal with any unforeseen events that impact on the time taken to distribute the buy-out fund.

8.13. Supplier compliance for the 2005/2006 obligation period will be more complicated than compliance for previous years. More suppliers will be involved with the addition of the Northern Ireland RO and there will be three buy-out funds to distribute to each supplier who correctly produces ROCs. This will also involve additional checking and correspondence with Ofreg about how the Northern Ireland suppliers have complied. Accuracy is paramount for the distribution of the buy-out fund and correspondingly Ofgem has strict checking procedures in place. Ofgem would not want to be under pressure to compromise these procedures for the sake of two weeks. Condensing the timeframe would also have resource implications. Ofgem has always made the distribution of the buy-out fund a high priority and will continue to do so in future.

### *Complying in aggregate across supply licences*

8.14. Ofgem opposes aggregating supplier compliance across licences in the current enforcement regime. Ofgem's powers of enforcement would be compromised by such a change as the company holding the supplier licence is the legal entity that the Authority has enforcement powers against and one company can only hold one supplier licence. If the Government was to go ahead with this proposal, Ofgem would need to be satisfied that the proposed arrangement would not compromise its powers of enforcement and so the integrity of the scheme as a whole.

### *Shorter Obligation periods*

8.15. Ofgem supports the Government's initial view on shorter obligation periods - six month obligation periods would be manageable but would have resource implications. As indicated in the consultation issues relating to seasonality would also need to be considered. Ofgem would not be in favour of quarterly obligation periods as dealing with these would be too heavy a resource burden. If a change to the length of obligation periods was to be considered further there should be clear evidence to show that there is a demand for it to warrant the additional work for Ofgem and suppliers.

## *Section 2: Administrative arrangements for smaller generators*

8.16. Ofgem supports the suggested changes for small generators as these would potentially ease the administrative burden for Ofgem and generators. There must be clear mechanisms in place and specified in the legislation on how the withdrawal of accreditation, issue of ROCs, revocation of ROCs, metering and contracts with licensed suppliers, eg 'sell-and-buy-back' contracts will be dealt with. To avoid confusion the legislation should include what the consequences would be if one generating station that was part of an amalgamation were to submit incorrect data. Ofgem is willing to work with the Government to resolve these issues in advance of such amendments to the legislation.

8.17. The administration relating to article 13 operator consumption and 'sell-and-buy-back' contracts has been complex and time consuming and so Ofgem would support any practicable simplification of this arrangement. Accepting 'sell-and-buy-back' contracts involves detailed checking and the resource required would not appear to warrant the amount of electricity that is generally covered by such a contract. In November 2003 a review was undertaken by Ofgem of generators with 'sell-and-buy-back' contracts when several generating stations were found not to have the correct contractual arrangements. The correspondence between the generators and operators demanded a lot of resource due to the complexity involved in this area. If this is considered further Ofgem would like to see all

electricity sold in the UK that does not enter the licensed network to be treated in this manner, eg the inclusion of export through an exempt distribution network. Such treatment could assist community schemes as well as small generators. There would also need to be consideration of how electricity currently supplied under 'sell-and-buy-back' contracts would be taken into account in the calculation of suppliers' obligations, eg would Ofgem apportion this additional electricity supply between suppliers?

# *Section 3: Other detailed and technical issues*

## *Fossil fuel generating stations with dedicated renewables generating sets*

8.18. Ofgem's view is that the current arrangements are adequate to allow individual generating sets to be classified as biomass generating station providing they meet the criteria in our guidelines on the definition of a generating station. However, ultimately, on any particular case, only a court can give a definitive answer and it may be that the Government wishes to give greater certainty to participants through providing a legislatively based definition of a generating station. Ofgem is not aware of any demand for change. In this regard the absence of demand and in the interests of simplicity change would not appear necessary.

## *Storage issues*

8.19. In relation to storage Ofgem welcomes the clarification and looks forward to the legal drafting to show that clarity of the intention has been achieved.

## *Treatment of landfill gas put directly into the gas network*

8.20. If the Government wishes to consider the issue of ROCs for electricity generated from landfill gas which is directly put into the gas network then the Government would need to ensure that there could be clear measurement of the amount of landfill gas used to generate electricity.

## *Section 4: Amending the ROS to provide more support for emerging technologies*

8.21. The ROS does not provide support specifically to emerging technologies in the context of moving towards a low carbon economy, however using the ROS in the way suggested would likely lead to increased costs to consumers without there being any compensating reduction in such costs from the removal of certain technologies, for example. The proposal, which is not supported by any analysis, does not compare other methods of supporting emerging technologies, eg capital grants and appears to run counter to the DTI's view that the Obligation is not the appropriate mechanism for providing additional financial support, over and above the "standard" ROC, for these longer-term or more expensive technologies. Consistency of view across the three Obligations is important for investor confidence. The proposal would increase complexity and would mean that there were potentially significant differences between the different obligations, as it is not clear whether such multiple ROCs would be eligible for suppliers to use in compliance under the RO and the NIRO.

8.22. We note that the consultation indicates that banding the ROS by technology would have led to higher electricity bills. However, this is only the case if the necessary adjustments are not made for each eligible technology. For example, if it is true that some technologies need additional support, then it must also be true that some technologies need very little, if any, support. Consistency of implementation in regards to what support is required across the renewable technologies is imperative for the integrity of the scheme. We had suggested, in our response to the DTI's Preliminary Consultation of August 2001, that the Obligation could be set so as to require suppliers to supply fixed proportions of the different technologies, with different buy-out prices for any shortfall in each band, set at levels to reflect the support needed by that technology. Whilst such banding could be said to lead to an increase in complexity, Ofgem believes that it could cope with such bands although there would be added complexity for ourselves and suppliers. We continue to believe that such an approach would minimise cost to customers, increase the diversity of renewable technologies and increase the likely level of compliance. It would also prevent cheaper and more

developed renewables receiving a windfall benefit as the Chapter on lower cost renewable technologies seems to indicate has happened.

### *Energy crops and biomass*

8.23. Ofgem notes the contents of the IPA Energy Consulting and Scottish Agriculture College study, "An analysis into a proposal for an amendment of the Renewables Obligation definition of energy crops", carried out for the Scottish Executive as part of the preliminary consultation. Ofgem notes that it is implicit that managed woodland products sourced from outside the UK would be eligible under this proposal but that the report views the transportation costs as being a limiting factor. Much of the biomass used to date by co-firing stations has been sourced from overseas.

# Appendix 1 - Comments on the report by Enviros

We also have some detailed comments on the report by Enviros commissioned by DTI and referred to in section 4.

It seems to us that Enviros have misinterpreted the 'super shallow' generation connection boundary and consequently have identified costs in an unusual manner. Any transmission asset which is potentially sharable is charged for via use of system charges. Use of system charges are comprised of: a locationally varying charge reflecting an annuitised cost of distance related assets (lines or cables) installed or upgraded to accommodate the connection of a generator; and a non-locationally varying charge to recover the costs of non-distance related assets (substations) and recover NGC's allowed revenue. Connection charges cover only assets which could not be shared by another user. This would normally be generator transformers only. Consequently, references on page 6 of the report to grid connection and grid upgrade charges are incorrect.

The report also says that connection charges are largely a function of the distance between the facility and the points of connection. In reality, use of system charges are determined by the distance between the facility and the point of connection, the location of the onshore connection point (ie where it is relative to the prevailing pattern of North - South flows), and the need for upgrades to the existing system to accommodate the output from the generator.

The final paragraph on charging on page 7 mentions a range of charges from £18/kW in Scotland to £8/kW in the South West. In reality, charges range from £23/kW in Northern Scotland to minus £8/kW in the South West.

Charges will change depending on how much generation is installed and where it is, therefore any certain estimates are difficult.

In considering relative production costs, the report seems to imply that all renewable production will have equal value when it is the case that electricity generated from a flexible renewable source will have a higher value than electricity from a fairly

continuous renewable source such as landfill gas generation which in turn will produce electricity with a higher value than that produced from an intermittent renewable source such as wind. This statement does not take account of the relative carbon abatement ability of the different renewable technologies and so careful analysis is required.

With regard to the onshore wind capacity factors while the source of the data is reliable, it is likely that these represent the maxima. Inferring a 95% availability for onshore wind from section 6.1 of the report means that the overall output factor will be between 1 and 2% less than indicated by the capacity factor. Currently, total MWh output from installed wind generation in Great Britain corresponds to around 27% of installed wind capacity. Allowing for a 95% availability, that would indicate that wind speeds are generally quite low, ie less than 7m/s. In most cases, high wind speed sites have been chosen and so possible explanations for this may be lower availability or older turbines being less efficient.

We note that the offshore costs are based on the base case figures quoted by Garrad Hassan and it seems that these figures are in the lower to middle range of the wide array of figures available. Enviros quotes the O&M costs as being £70,000 per MW but this should actually be £70,000 per turbine. However, it is likely that this is a typing and not a modelling error.

# Appendix 2 - Regulatory Impact Assessment

Ofgem notes that the initial Regulatory Impact Assessment ("RIA") that accompanies the consultation makes reference to a full RIA being included with the Statutory Consultation. Ofgem looks forward to seeing that full and detailed RIA. Such a RIA would give substance to any proposals that are to be progressed and would serve to underline the reasons why certain policy options are being proposed.

Ofgem has the following detailed comments on the initial RIA.

In regards to the criteria for assessment of any proposed change, it is not clear what weighting is to be given to each of these.

On Obligation levels post 2015/16, there is no evidence that, at this stage, investor confidence needs to be ensured for projects with long lead times. The RIA also does not make any reference to the disbenefits of extending the Obligation levels further which we make reference to in section 4.