

NEW & RENEWABLE ENERGY

Prospects for the 21st Century

The Renewables Obligation Preliminary Consultation



dti

Department of Trade and Industry

NEW & RENEWABLE ENERGY

Prospects for the 21st Century

The Renewables Obligation

Preliminary Consultation

dti

Department of Trade and Industry

Contents

Foreword by Stephen Byers.....	1-4
Executive Summary.....	5-6
1.0 Introduction	
1.1 Aims of the Consultation.....	7
1.2 Renewable Energy.....	8
1.3 Government Policy on New and Renewable Energy.....	9
1.4 Policy Instruments.....	10
1.5 Timetable.....	11
2.0 The Renewables Obligation	
2.1 Introducing the Obligation.....	13
2.2 Division of Responsibility – The Legislative Framework.....	14
2.3 Suppliers Affected by the Obligation.....	15
2.4 Eligible Renewables.....	16
2.5 Profile of the Obligation to 2010.....	18
2.6 Demonstration of Compliance – The Role of Renewables Obligation Certificates.....	19
2.7 Banking & Borrowing (B&B).....	20
2.8 Buy Out Payments.....	21
2.9 Cost to the Consumer.....	21
2.10 Recycling Buy out Payment Receipts.....	22
2.11 The Case for a Banded Obligation.....	24
2.12 Capital Grants.....	25

3.0	Other Policy Instruments	27
4.0	Summary and Responses	
4.1	Summary.....	31
4.2	Responses.....	31
Appendix:	Saving Arrangements for NFFO-3, 4 and 5 Contracts	33
Annex A:	Draft Regulatory Impact Assessment	35
Annex B:	Renewables Obligation Certificates for Demonstrating Compliance with the Renewables Obligation in England and Wales (and the Renewables (Scotland) Obligation)	43
Annex C:	Capital Grants	49
Annex D:	Glossary of Abbreviations	55

Foreword

by Stephen Byers



In February of this year Helen Liddell, the Minister for Energy and Competitiveness in Europe, introduced the Government's new policy on new and renewable energy¹. Our aim is to stimulate the development of the renewables industry so that it will provide a continuously growing contribution in the competitive energy market. We want to promote a climate of opportunity, and to encourage innovation so that renewables can become increasingly cost effective and competitive with other more traditional energy sources. Our objective is that, by the end of 2003, 5% of UK electricity requirements will be met by renewables, rising to 10% in 2010. This is subject to the cost to consumers being acceptable.

Our policy on renewables is part of our wider approach to climate change, and one of a range of initiatives to support the development of a more sustainable approach to energy use. The recent report of the Royal Commission on Environmental Pollution, *Energy – The Changing Climate*² highlights the need to take action now to avoid problems for this and future generations from increasing greenhouse gas emissions as a result of our increasing demands for energy.

Progress has already been made: in 1998 the UK's greenhouse gas emissions were 8.5% lower than 1990 levels. The Government's Draft Climate Change Programme and the parallel Scottish

¹ Department of Trade and Industry. (2000). *New and Renewable Energy: Prospects for the 21st Century: Conclusions in Response to the Public Consultation*. London: DTI.

² Royal Commission on Environment Pollution. (2000). *Energy – The Changing Climate*. London: The Stationery Office.

Climate Change Programme, identify an integrated package of measures – for transport, business, the energy sector, agriculture, the Public Sector, and individual domestic users – to reduce emissions still further to 21.5% lower than 1990 levels by 2010. We are all encouraged to “do our bit” to adopt a more forward-thinking approach to how we treat the environment and its resources. Of course, we cannot afford to be complacent and we must continue with our efforts, not least because we will need to make much more demanding reductions in the future if we are to avoid the more serious consequences of climate change.

The Government has introduced a number of key policy initiatives that will help us to make further progress. In July of this year, I was pleased to learn that my Department will receive £39 million from the Climate Change Fund to provide further financial support for those renewables most in need of an extra boost. In addition, a further £12 million will be made available from the same fund to the Ministry of Agriculture, Fisheries and Food (MAFF) for the development of energy crops.

The Renewables Obligation is the focus of this particular consultation exercise, and

will be introduced in England and Wales next year once an Order has been laid before, and approved by, Parliament.

(A similar Order will be laid before the Scottish Parliament in respect of the Renewables (Scotland) Obligation).

The Obligation will oblige individual licensed electricity suppliers to supply a specified proportion of their electricity from renewable sources to their customers in Great Britain.

We promised to consult on the mechanisms of the Obligation so this document invites your comments on our proposals and provides more details on how we expect the Obligation to operate in practice.

It explains how licensed electricity suppliers will be expected to comply with the terms of the Obligation, and the evidence that they will need to provide to demonstrate that.

We have been listening closely to the concerns of those within the industry, and the level of the buy out price has been an area for sometimes heated debate. We propose that the buy out price will be set at a level of 3.0p/kWh (£30/MWh).

We would welcome comments on whether this strikes the right balance between progress towards our targets and the cost

to the consumer. We aim to encourage suppliers to meet those targets – so as a further incentive we propose that receipts from the buy out will be recycled to suppliers in proportion to the quantity of renewable electricity supplied under the Renewables Obligation (i.e. the number of certificates redeemed).

We are also aware that many individuals and organisations within the industry would like to see a banded Obligation – with the buy out price set at different levels for different renewable sources of energy. The Government has considered this option in some detail and has decided that it would not provide sufficient impetus for the industry to become more competitive in its own right, as detailed in section 2.11 of this document. We believe that a banded Obligation would segment the market unnecessarily, and would lead to Government dictating the relative importance of each technology. We also feel that it is no longer Government's job to pick winners or to introduce artificial distortions into the marketplace. As I

announced in August³, the future role of DTI will be one of action but not direct intervention.

In recognition of the competitive challenge that this poses for the industry, we are proposing additional support for an initial round of both offshore wind and energy crops projects. This will take the form of capital grants, proposals for which are included in this document for the first time. Details of the funding available will be announced by the end of October.

The role of energy from waste has also been a contentious area. As stated in *Conclusions in Response to the Public Consultation*, we believe that this technology will have an important part to play in relation to our targets, but we have decided that it should not be included in the Obligation. We consider that energy from waste and large scale hydro are both sufficiently commercially viable to allow us to concentrate support on those renewables which have yet to reach this stage.

³ Speech by Stephen Byers, Birmingham Chamber of Commerce, 2 August 2000.

Our drive to make the industry more competitive has to be balanced against our social responsibilities. The Government is committed to ensuring that all consumers have fair and equal access to the electricity market and to the benefits of increased competition within that market. We have introduced the buy out price so that we can place a limit on any additional cost to consumers incurred as a result of suppliers trying to fulfil their Obligation, if the cost of renewables is too expensive. Fuel poverty remains an issue for too many families and individuals in the UK, while its indirect impacts have implications throughout the economy and the environment. Ensuring that electricity prices do not rise by an excessive amount as a result of our drive to encourage renewables has therefore been an important part of our decision making process.

The introduction of the Renewables Obligation will take place against a backdrop of changes to the electricity industry. Soon we will see the introduction of the New Electricity Trading Arrangements (NETA) in England and Wales, and the subsequent splitting of the supply and distribution activities of the UK Public Electricity Suppliers. The complexion of the electricity market in the UK is going to change irrevocably – and it is my sincere hope that those involved will work towards fulfilling the Obligation, achieving our targets and adopting a more sustainable attitude to energy utilisation.

A handwritten signature in black ink, reading "Stephen Byers". The signature is written in a cursive style with a long, sweeping underline.

Stephen Byers

Secretary of State for Trade and Industry



Executive Summary

The Government published its policy for renewable energy in February 2000. The main objective of that policy is to increase the contribution of electricity supplied from renewables to 5% by the end of 2003, and 10% in 2010, subject to the costs to the consumer being acceptable. A key policy instrument to facilitate this growth is the Renewables Obligation – which is the focus of this particular consultation. This paper explains the Obligation's key features and the timetable for its introduction. It also outlines the implications for those companies likely to be affected by its introduction – for example, generators of electricity from renewable sources of energy and licensed electricity suppliers in England and Wales. The additional cost to consumers is also estimated.

The current policy on renewables is itself part of the Government's proposed programme to tackle climate change and to encourage a more sustainable approach to energy consumption. Previous policy has been successful in introducing renewables to the UK marketplace and in reducing costs. The focus of current policy is to build on these achievements through a number of

instruments, including the Renewables Obligation and a system of capital grants designed to bring forward offshore wind and energy crops, thereby maximising the chances of meeting the Government's targets.

Each policy instrument will provide support for renewable technologies and will enable the UK to move towards the Government's targets. It is likely that the 5% target for 2003 will be met mostly from existing capacity and that contracted under the various NFFO arrangements. The Renewables Obligation will be the main mechanism through which progress will be made from 5% towards the 10% target. It will be an Obligation on all licensed electricity suppliers in England and Wales to supply a specified proportion of their electricity supplies from renewable sources. In Scotland, the equivalent Renewables (Scotland) Obligation will apply. Similar arrangements are being considered in Northern Ireland.

It is anticipated that the Obligation will start in October 2001 (after an Order has been laid before, and approved by, Parliament), and that it will remain in place until March 2026



– a sign of the Government’s long term commitment to renewables.

This paper sets out how licensed electricity suppliers will be expected to comply with the terms of the Obligation, and the mechanisms through which they can demonstrate that compliance. Monitoring compliance will be the responsibility of OFGEM, who will administer a system of certification. Renewables Obligation Certificates (ROCs) will be issued to qualifying renewables generators as evidence that qualifying electricity has been supplied by a licensed electricity supplier to their customers in Great Britain. It is envisaged that these certificates may be traded separately from the electricity to which they relate. A system of limited banking and borrowing of certificates is proposed in order to give individual suppliers more flexibility as to how they meet the demands of the Obligation.

Should the cost of supplying renewable electricity become prohibitively high, suppliers can choose the buy out option as an alternative to supplying what would be the more expensive renewable-generated electricity. It is proposed that the buy out price will be set at a level of 3.0p/kWh (or £30/MWh). **Views are particularly sought on this and on the associated cost to consumers.** It is also proposed that buy out receipts will be recycled to suppliers in proportion to the extent that they meet with the targets set out in the Obligation, as evidenced by the redemption of Renewables Obligation

Certificates. This should increase the likelihood of meeting the 2010 target by providing a financial investment incentive for supply companies, whilst placing a limit on the overall additional cost to electricity consumers.

It is recognised that certain renewables may require a further financial boost in order to improve their potential commercial viability and to enable them to make a greater contribution to the targets. While the concept of a “banded” Obligation is rejected, the Government considers that offshore wind and energy crops need assistance in bridging the gap between research and development and commercial deployment. For this reason, capital grants will be available for early projects involving these two renewable sources. The Government’s proposals are set out in Annex C and details of the funding available will be announced by the end of October this year.



Islay Wave Device

Section

1

Introduction

1.1 Aims of the Consultation

When the Government published its New & Renewables policy statement⁴ in February 2000, it made a commitment to consult with those parties affected by the introduction of the new Renewables Obligation (RO). This particular document is, therefore, targeted mainly at an audience comprising licensed electricity suppliers, renewable energy generators, and electricity consumer groups.

The Utilities Act 2000 provides the legal basis for the statutory instruments that will impose the Renewables Obligation in England and Wales, and the Renewables (Scotland) Obligation (RSO). The Orders can only be put into place once the Public Electricity Supplier licences have been split. The proposed contents of the Order that will impose the RO in England and Wales form the backbone of this preliminary consultation exercise. A statutory consultation will take place next year before the Order is laid before Parliament.

This document will set out the wider context of the Government's policy on renewables, and the measures through which it will be

implemented. Section 2 will focus on the Renewables Obligation in detail, exploring the key features of the Obligation, the timetable for its implementation, and its implications for electricity supply companies, generators and consumers.

Your views are sought on a number of key issues, specifically:

- The sources of renewable energy which are eligible for the Obligation;
- The proposed profile of the Obligation to 2010;
- The evidence required to demonstrate compliance – Renewables Obligation Certificates;
- The level of the buy out price;
- Whether the balance between the environmental benefits and cost to the consumer is correct;
- Proposals for banking and borrowing of Renewable Obligation Certificates;
- The system for recycling buy out payments;
- The proposed capital grants for offshore wind and energy crops.

⁴ Department of Trade and Industry. (2000). *New & Renewable Energy: Prospects for the 21st Century: Conclusions in Response to the Public Consultation*. London: DTI.



Each of these issues is discussed in Section 2 below, while a review of the Government's other renewables policy instruments is presented in Section 3.

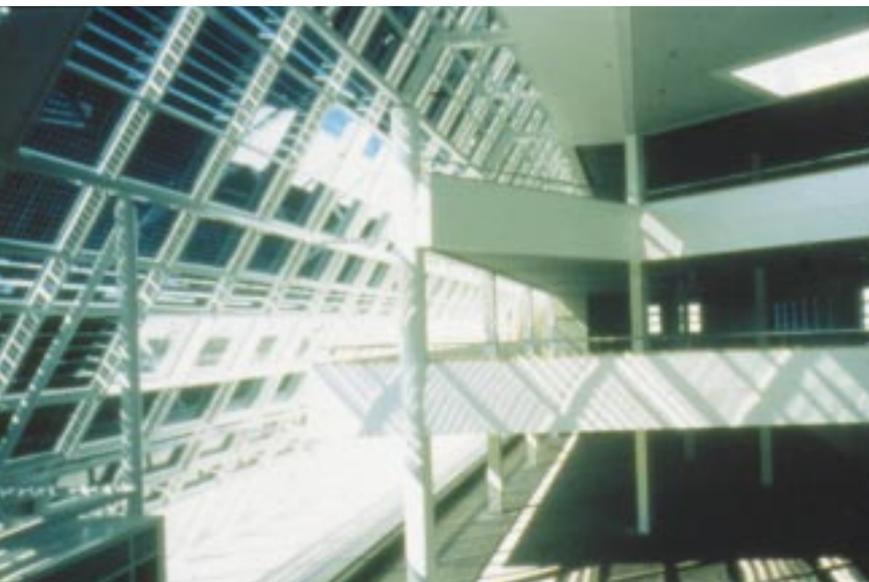
1.2 Renewable Energy

Renewable energy, at its most basic level, can be thought of as energy that occurs naturally and repeatedly in the environment. The basic definition of "renewable sources" in the Utilities Act 2000 is "sources of energy other than fossil fuel or nuclear fuel...". Such sources are continuously available, offering the potential to help the UK achieve its aims in terms of sustainability of energy supplies. Worldwide energy demand continues to increase (currently at a rate of 2% per annum), while the availability of fossil fuel is expected to decline in the longer term and concerns over the potential impact of global warming continue to grow. The sustainability

of energy supply can therefore be expected to continue rising up the social, economic and political agenda in the years to come.

The most well known renewable energy sources are probably hydro, wind and solar power. However, as the above definition makes clear, Government targets for renewable energy can include energy generated from: *biofuels* (e.g. all types of biomass, including *energy from waste, landfill gas, sewage gas, agricultural and forestry residues, and energy crops*); *onshore and offshore wind*; *water (Hydro power, wave power and tidal energy)*; and *solar energy (including Photovoltaics)*.

Renewables have a key role to play in the Government's wider Climate Change programme: these sources generally produce lower (or even negligible) levels of pollutants (e.g. greenhouse gases) than the conventional sources of energy they displace and thus also help the UK to meet its climate change targets. Projections indicate that the use of renewables within the UK could result in an annual saving of around 2.5 million tonnes of carbon emissions in 2010⁵. The Royal Commission's report also backs up this assumption, and confirms that greenhouse gas abatement will be a key future role for renewables, and that increasing the uptake of renewables has to be a non-negotiable element of future energy use.



Inside the "Solar Office", Doxford International Business Park, Sunderland

⁵ Department of the Environment, Transport and the Regions. (2000). *Climate Change: Draft UK Programme*. London: DETR.



ARBRE Wood-fuelled Power Station, North Yorkshire

1.3 Government Policy on New & Renewable Energy

The Government wants to promote a climate of innovation and to develop the competitive potential of the renewables industry both at home and abroad. The Government's broad policy for new and renewable energy was published as *New & Renewable Energy: Prospects for the 21st Century: Conclusions in Response to the Public Consultation* in February of this year. That set out a number of aims and targets for renewables based on a thorough review, assessment of the potential for renewables and extensive public consultation.

Policy Aims

Essentially, the Government's renewable energy policy has five key aims:

- To assist the UK to meet national and international targets for the reduction of emissions including greenhouse gases;

- To help provide secure, diverse, sustainable and competitive energy supplies;
- To stimulate the development of new technologies necessary to provide the basis for continuing growth of the contribution from renewables into the longer term;
- To assist the UK renewables industry to become competitive in home and export markets and, in doing so, provide employment;
- To make a contribution to rural development.

Targets

The objective is to increase the contribution of electricity supplied from renewables to 5% by the end of 2003, rising to 10% in 2010, subject to the cost to the consumer being acceptable. At the end of 1999, renewable energy sources represented 2.8% of total electricity generated in the United Kingdom (*Digest of United Kingdom Energy Statistics, 2000*)⁶. It is expected that the 2003 target will be met by existing capacity and new capacity to be built under NFFO-3, 4 and 5 contracts. The new Obligation is expected to stimulate the growth that will be required to make the move from 5% to 10%. The Obligation will remain in force until 2026 and will provide a guaranteed market for electricity generated from renewable sources until that date. Such long-term commitment is an unusual step for Government but highlights the importance attached to this particular energy issue.

It is estimated that between 36 – 39 TWh of renewable generation will be needed to meet the 10% target in 2010. This represents a substantial increase in the use of renewables - an extra 20 - 23 TWh in addition to that which is expected to be built under NFFO-3, 4 and 5. Renewable energy projects can take up to 6 years from inception through to commissioning. Consequently, it will be in the interests of suppliers and generators to be forward thinking and to recognise the long lead times of many of the renewable resources they will need to deploy.

1.4 Policy Instruments

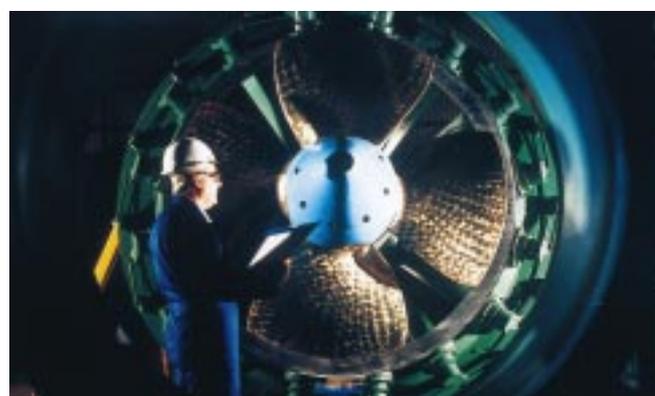
The Government's new strategy has a number of key policy themes, including the new Renewables Obligation for England and Wales (and the analogous Renewables (Scotland) Obligation) which will be an Obligation **on all licensed electricity suppliers** to supply a specified proportion of electricity from renewables to customers in Great Britain or, as alternatives, to purchase Renewables Obligation Certificates, or to pay the buy out price. The Northern Ireland Assembly is responsible for considering whether to introduce an analogous mechanism.

In the past, the Government's principal renewables policy instrument has been the Non Fossil Fuel Obligation (NFFO) and analogous Scottish Renewable Obligation (SRO) and Northern Ireland Non-Fossil Fuel

Obligation (NI-NFFO) arrangements. These succeeded in creating an initial market for renewables. As of 30 June 2000, 331 projects with an aggregate capacity of 834 MW DNC (Declared Net Capacity) had been commissioned under the various NFFO, SRO and NI-NFFO Orders.

The Renewables Obligation moves away from the NFFO approach and reflects the Government's belief that the way forward is to create the market conditions for a thriving, dynamically competitive renewables industry. Its introduction means that there will be no further NFFO contracts. Instead, all licensed electricity suppliers in England and Wales will be subject to the RO. This will, of course, have implications for those companies currently holding NFFO contracts: the relevant saving (or transitional) arrangements which have been put in place for NFFO 3, 4 and 5 contracts are outlined in the Appendix.

The new Obligation is one of a series of measures to promote the development of renewables. Other policy strands include:



2000 metre Axial Flow Hydro Turbine

⁶ Department of Trade and Industry (2000). *Digest of United Kingdom Energy Statistics, 2000*. London: The Stationery Office.



Baldovie Energy from Waste Plant

- Exemption of electricity from renewables from the Climate Change Levy;
- A supporting programme of Research and Development and technology transfer to provide a technology push, and assistance in overcoming non-technical barriers to deployment;
- Development of a proactive strategic approach to planning in the regions and the introduction of regional targets for renewables based on renewable energy resource assessments;
- Capital grants for early offshore wind and energy crops projects.

Each of these is discussed in more detail in Section 3.

1.5 Timetable

The Obligation's first period is likely to run from 1 October 2001 – 31 March 2003.

Subsequent periods will be likely to last for

1 year. This also applies to the RSO in Scotland. The initial 18 month period will give suppliers, renewables generators and OFGEM an extra opportunity to become accustomed to the new arrangements. The proposed timetable, showing important dates for the electricity industry in relation to the new Obligation, is shown in Table A.

The Renewables Obligation and the capital grants are State Aids and, as such, they have to be approved by the European Commission. Although the EC has already been notified, arrangements cannot be implemented until approval has been received. Any delay in achieving this will have implications for the timetable. The date on which the PES licences are split into separate licences for supply and distribution may also have an impact on the timetable.

The Government has no plans to curtail the duration of the Obligation once it has been put in place.



Beinn Ghlas Wind Farm Argyll, Scotland

Table A: Provisional Timetable

EVENT	DATE
Closing date for responses to this Consultation	5 December 2000
Open register for expressions of interest in capital grants	January 2001
Statutory Consultation on Renewables Obligation	March/April 2001
Order for Renewables Obligation laid before Parliament	April/May 2001
Order made	June/July 2001
First period of Obligation begins	1 October 2001
Proposed closing date for capital grant applications	End of 2001
Grants announced	September 2002
Last period of Obligation ends	31 March 2026

Section

2

The Renewables Obligation

2.1 Introducing the Obligation

The Renewables Obligation for England and Wales (RO), and the equivalent Renewables (Scotland) Obligation (RSO) will place a legal obligation on all licensed electricity suppliers to supply a specified proportion of their electricity supplies from renewable energy sources to their customers in Great Britain. Renewable energy supplied in Northern Ireland will count towards achievement of the UK target and will also be eligible for CCL exemption, although the Northern Ireland Assembly will be responsible for considering whether to introduce a mechanism analogous to the RO and RSO.

Scottish electricity suppliers supplying customers in England and Wales will also have to comply with the terms of the Obligation, while Northern Irish and English companies supplying in Scotland will be subject to the RSO.

Licensed electricity suppliers will be required to provide evidence to the Office of Gas & Electricity Markets (OFGEM) of their compliance with the Obligation. In order to ensure maximum flexibility, suppliers will be

given a choice of options as to how they comply with the Obligation.

If they choose to supply renewable electricity they will demonstrate their compliance through a system of certification using Renewables Obligation Certificates (ROC)⁷. These are certificates issued to a qualifying, accredited renewable electricity generator and will provide evidence that the specified quantity of electricity has been supplied by a licensed supplier to a customer in Great Britain from an eligible renewable source.

Generators will be able to trade ROCs on to the obligated suppliers (perhaps via an intermediary) who will be able to rely on those certificates as evidence of their compliance with the Obligation. Suppliers may choose to trade in ROCs in addition, or as an alternative, to supplying electricity from renewable sources themselves.

Any additional costs incurred by purchasing electricity from renewable energy over other conventional sources may be passed on to the consumer. That extra cost will be limited by a “buy out price” in case the electricity from renewables proves more expensive than expected. The buy out price is the price at which suppliers can choose to buy out their

⁷ In previous DTI publications and the Utilities Act 2000, ROCs were referred to as “Green Certificates”. The term ROC has been introduced to avoid any possible confusion with certificates used for CCL exemption, carbon trading and international green certificate trading.



Obligation as an alternative to supplying renewable-generated electricity. The NFFO arrangements, and accompanying system of support, have already had considerable success in reducing the cost of renewables. It is anticipated that the Government's new and expanded range of policy instruments will drive those costs down still further, creating the conditions for further investment and uptake of renewable technologies, and reducing the need to use the buy out option.

So, licensed electricity suppliers will have 3 main ways in which they can comply with the Obligation:

- Through supplying power from eligible renewables generating stations to consumers in Great Britain, and redeeming the ROCs which they receive; and/or
- Buying ROCs independently of the power that gave rise to their issue; and/or
- Paying a buy out price to OFGEM rather than supplying renewable electricity.

They may also be able to bank ROCs to use in subsequent Obligation periods, or to borrow certificates against later supplies, as detailed in section 2.7.

The Government is committed to the Obligation as a mechanism for increasing the uptake of renewables. **For this reason, the Government would like to assure the renewables industry that, once the Obligation is in place, there are no plans to:**

- Lower the buy out price during the time that the Obligation remains in force;

- Reduce the size of the Obligation as long as it remains in force;
- Curtail the duration of the Obligation;
- Disqualify any renewables proposed to be eligible.

The details of the Renewables Obligation will be set out in an Order that will specify, as a minimum:

- The licensed electricity suppliers on whom the Obligation will fall;
- The sources of renewable energy eligible under the Renewables Obligation;
- The proportion of their supplies which must be supplied from renewable sources in each period of the Order. It is expected that the first Obligation period will run from 1 October 2001 to 31 March 2003, and thereafter for periods of one year ending on 31 March 2026;
- The evidence that must be provided to OFGEM to enable them to issue ROCs to generators;
- Arrangements for banking and borrowing of ROCs;
- The arrangements for suppliers to be able to buy out their Obligation (or any part of it) in any particular year as an alternative to supplying renewables electricity and/or buying ROCs;
- The price of the buy out option; and
- The system of allocation whereby receipts from suppliers who choose to buy out their

Obligation will be recycled among suppliers who have complied with the Obligation by redeeming ROCs.

Each of these topics is discussed in the following sections of this document. The next section outlines the responsibilities of Government, the industry and the regulator in ensuring compliance with the Obligation.

2.2 Division of Responsibility – The Legislative Framework

The new Renewables Obligation will be implemented through a three-way division of responsibility as follows:

The Secretary of State for Trade and Industry (DTI) will be responsible in England and Wales for:

- Making policy decisions⁸;
- Consulting⁹ the Office for Gas and Electricity Markets (OFGEM), the Gas and Electricity Consumers Council, the licensed electricity suppliers, generators and anyone else he considers appropriate; and,
- Laying before Parliament and making an Order imposing the Obligation on licensed electricity suppliers to supply a proportion of their supplies from renewable sources of energy.

The Obligation will be placed on *all licensed electricity suppliers* supplying electricity in England and Wales. Each supplier in this category will be responsible for making arrangements to:

- Supply a proportion of their supplies from renewable sources of energy;
- Or purchase ROCs independently of electricity supplied to their customers;
- For providing evidence in a form acceptable to OFGEM that they have done so; or,
- As an alternative, paying the buy out price to OFGEM.

OFGEM¹⁰ will have responsibility for:

- Accrediting generators who meet the requirements of the qualifying generation definition;
- Issuing ROCs to generators, which will provide evidence of generation and supply by licensed suppliers to customers in Great Britain;
- Registering all trades of ROCs between generators, suppliers and other parties;
- Redeeming ROCs provided by suppliers as evidence of the amount of qualifying renewable electricity supplied to customers in Great Britain;
- Assessing the extent of compliance by suppliers and calculating the amount of buy out payments due from each supplier;
- Collecting the buy out payments due from suppliers;
- Distributing the proceeds of the buy out payments in accordance with the provisions of the Order; and,
- Providing an Annual Report to the Secretary of State.

⁸ Department of Trade and Industry. (2000). *New and Renewable Energy: Prospects for the 21st Century: Conclusions in Response to the Public Consultation*. London: DTI.

⁹ Final statutory consultation will take place once the PES licenses have been split.

¹⁰ And OFGEM Scotland

The basis on which licensed suppliers choose to comply with the Obligation, and obtain evidence that they have done so, is a matter for them and the generators or intermediaries with whom or through whom they have chosen to contract.

The acceptability of any ROC as evidence that a licensed supplier has supplied eligible renewable electricity to a customer in Great Britain will be a matter for OFGEM. The use of such a ROC for any purpose other than as evidence of compliance with the Renewables Obligation, for example international trading or domestic retail sales, is a matter for those engaging in such activity, although OFGEM will have to be notified of all such sales that occur.

2.3 Suppliers Affected by the Obligation

As outlined in *Conclusions in Response to the Public Consultation*, the Government has been actively considering whether it would be worthwhile to exempt certain categories of licensed electricity suppliers from the Obligation, specifically those with a very low percentage market share, recent entrants into the marketplace and those already involved in the voluntary green market.

However, **the Government proposes that the Obligation should apply to all licensed electricity suppliers in England and Wales.** It believes that this inclusive approach is necessary from day one if targets are to be met, and if individual supply companies are to

recognise that the Government is serious in its commitment to the Obligation.

While Government recognises that smaller companies may face some initial difficulties (for example, with costs and access to renewables), companies in this situation will be able to choose the buy out option to comply with the Obligation. Given that compliance will be judged against a supplier's total supplies in the year being assessed, new entrants may also be more likely to choose the buy out option.

2.4 Eligible Renewables

All sources of renewable energy are at different stages of development in Great Britain. Large scale hydro, (i.e. exceeding 10MW installed capacity) and energy from waste (energy recovery from municipal solid waste [MSW] and from mixed streams of industrial and commercial waste [ICW]) are already commercially viable, well established in the market, and can compete with electricity from fossil fuels. **For this reason, the Government considers that these two renewable energy sources, large scale hydro and energy from waste, should be excluded from the Obligation.** This will allow resources to be targeted more effectively on those renewables needing continued support.

The proposed European Directive on the promotion of electricity from renewable energy sources in the internal electricity market (Com (2000) 279 final) contains a definition of those renewable sources of

Table B: Summary of Incentives for Renewables

Source	10% Target	Renewables Obligation ¹¹	CCL Exemption ¹²	Capital Grants
Landfill Gas	✓	✓	✓	
Sewage Gas	✓	✓	✓	
Energy from Waste ¹³	✓		✓	
Hydro exceeding 10 MW installed capacity	✓			
Hydro 10 MW or less, installed capacity	✓	✓	✓	
Onshore wind	✓	✓	✓	
Offshore wind	✓	✓	✓	✓
Agricultural and forestry residues	✓	✓	✓	
Energy crops	✓	✓	✓	✓
Wave Power	✓	✓	✓	
Photovoltaics	✓	✓	✓	

energy that Member States will be able to count towards their national targets. The question of whether energy from waste should be included in national targets for renewables is still under discussion in Europe.

Renewables such as small scale hydro, onshore wind and agricultural and forestry residues are unlikely to develop further without the stimulus provided by the Obligation. Bringing development of offshore wind and energy crops forward will be particularly important if

the 10% target is to be met. The Government believes that this can best be achieved by additional support through a system of capital grants for early commercial projects.

Renewables such as wave and photovoltaics will need further development before they are likely to be able to play a more significant role in the renewable energy portfolio.

Electricity generated by projects contracted under NFFO-3, 4 and 5 will be eligible for the RO and exempt from the Climate Change Levy to

Table C: Regional Variations

	Renewables Target	Renewables Obligation	CCL Exemption ¹⁴
England/Wales	✓	✓	✓
Scotland	✓	✓ (RSO)	✓
Northern Ireland	✓		✓

¹¹ The Government has no plans to disqualify any of the renewables proposed to be eligible during the life of the Obligation

¹² Subject to Parliamentary Approval

¹³ Energy recovery from municipal solid waste (MSW) and from mixed streams of industrial and commercial waste (ICW)

¹⁴ The Climate Change Levy applies throughout the whole of the United Kingdom.

the extent that the renewable sources of energy in use are eligible for each. However, the saving arrangements put in place will ensure that generators do not derive any benefit from eligibility until their contracts end (as detailed in paragraph 25, Annex B). Similarly, electricity generated from ex NFFO-1 and 2 projects, their contracts having ended in 1998, will also be eligible to the extent that the renewable sources used are themselves eligible.

The Government's approach seeks to evaluate each technology according to need, and to provide stimulus according to the degree of that need and the potential offered by the technology. Thus resources will be focused on those areas which require assistance most. In the light of this approach, Table B highlights the sources to be included in the Obligation. It also shows which sources are expected to benefit from CCL exemption and capital grants.

Electricity generated from renewable sources of energy, where heat is also put to beneficial use (i.e. combined heat and power (CHP)) will be eligible under the new Renewables Obligation, where the electricity would be eligible in the absence of CHP.

Table B highlights differences in terms of eligibility of renewable sources. There will also be regional differences, which are highlighted in Table C. Northern Ireland supplies will count towards the UK target, and will also benefit from CCL exemption, but will not be eligible for the Renewables Obligation unless generators in Northern Ireland are supplying to licensed suppliers in England or Wales (or Scotland for the RSO). In Northern Ireland, the

Department of Enterprise, Trade and Investment (DETI) plan to issue a consultation paper later this year assessing the potential for further development of the renewables resource within Northern Ireland.

In Scotland, licensed suppliers will be subject to the RSO. The Scottish Executive are responsible for the Order to effect this mechanism and consultation is expected to take place in late Autumn 2000, with the RSO being introduced at the same time as the RO comes into force in England and Wales.

2.5 Profile of the Obligation to 2010

The new Order will set out how suppliers will be required to incrementally increase the volume of electricity supplied from renewable sources from its current level to a level consistent with 10% of total UK electricity supply in 2010.

Table D presents the profile of the Obligation for achieving the 10% goal in 2010. The figures in the final column represent the target percentage of eligible renewable electricity which will be required in each period of the Obligation.

It has been emphasised in this and previous policy statements that achieving the 10% target will be contingent upon the additional cost to the consumer being acceptable. The Government is committed to meeting the 10% target and to supporting renewables but not at the expense of excessive increases to current electricity prices. This does not mean,

Table D: Profile of the Obligation to 2010¹⁵

	Estimated Sales by Licensed Suppliers	Estimated Consumption by auto generators	Estimated Losses	Estimated Total Electricity Available	Renewables Target (to reach 10% in 2010)	Contribution from Non-Eligible Renewables	Contribution from Eligible Renewables Required	RO as % of Sales
	TWh	TWh	TWh	TWh	TWh	TWh	TWh	%
1999	300.5	21.2	29.1	350.8		6.0		
2000	301.9	22.0	29.3	353.2		5.9		
2001	304.0	22.5	29.2	355.7		6.3		
2002	306.1	23.0	29.0	358.2	16.1	6.7	9.4	3.1
2003	307.9	23.9	28.9	360.6	18.0	7.0	11.0	3.6
2004	309.7	24.4	29.1	363.1	20.0	7.5	12.5	4.0
2005	311.8	24.9	28.9	365.6	21.9	8.0	13.9	4.5
2006	314.3	25.5	28.7	368.5	25.8	9.0	16.8	5.3
2007	316.4	26.4	28.6	371.4	29.7	10.0	19.7	6.2
2008	318.9	27.0	28.4	374.3	33.7	11.0	22.7	7.1
2009	321.4	27.6	28.3	377.3	35.8	12.0	23.8	7.4
2010	323.6	28.1	28.5	380.3	38.0	13.0	25.0	7.7

however, that targets for individual periods of the Obligation will be lowered, rather than the buy out price mechanism will effectively limit the additional cost to the consumer.

The Obligation is likely to be defined as a percentage of the supplier's total supplies in the year being assessed. The first period of the Obligation will require suppliers to supply little more than the eligible electricity expected to be available with projects generating under NFFO-3, 4 and 5 contracts, and the eligible renewables likely to be available outside the NFFO arrangements.

The profile for these periods of the Obligation reflects a need for at least three times the rate of growth in output from new capacity compared to that achieved from projects contracted under NFFO-3, 4 and 5 over a similar period of time. While the incentives available to the existing NFFO projects are rather different to those which will be available under the new RO arrangements, generators will have the benefit of much greater levels of experience in the development of renewable energy projects. The more positive approach to planning now being put in place also encourages the view

¹⁵ Forecasts are based on Draft Energy Projections which assume that Northern Ireland will comprise 2.5% of totals. In addition, figures for years other than 2003 and 2010 are assumed.

that the greater growth in output that this profile implies is attainable. Other incentives, such as CCL exemption and recycled buy out receipts, are expected to result in a similarly positive impact.

It is anticipated that the Obligation from 2011 to 2026 will be maintained at a level consistent with providing a growing market for the electricity supplied to meet the 2010 target. There is a possibility that more demanding greenhouse gas abatement targets will result in a need to set the Obligation at a higher level during this period.

The Government would welcome views as to whether these Obligation levels are reasonable, and on the year-on-year increase which has been put forward. Industry views on the speed of growth that is desirable and attainable would also be welcome. For example, does industry believe that the fastest growth should occur in the early or later stages of the Obligation?

2.6 Demonstration of Compliance – The Role of Renewables Obligation Certificates

One way that licensed electricity suppliers can choose to demonstrate that they have complied with their Renewables Obligation commitments is through Renewables Obligation Certificates – ROCs. Each certificate will represent a metered unit of eligible renewable electricity that has been generated and then supplied by licensed suppliers to their customers in Great Britain. Some

suppliers may choose to meet their target completely with ROCs, while others may choose to buy out some (or indeed all) of their Obligation target by making payments to OFGEM.

A supplier will have fulfilled their Obligation if they can produce certificates equivalent to a predetermined level of renewable supply by a specified date. The certificates required will be dependent upon the target within the period being assessed, as proposed in table D above, and will rise steadily from the first period of the Obligation. Presentation of a certificate will have one of two implications: either the supplier will have physically supplied renewable-sourced electricity; or another supplier will have done so on their behalf. Suppliers and generators will be required to inform OFGEM about each trade in ROCs that occurs.

OFGEM will be responsible for the issuing of ROCs and they will monitor data on the metered output of each accredited renewable electricity generator. Certificates will then be issued to those generators according to the quantity of electricity produced and supplied by a licensed supplier in Great Britain. Generators will then be able to trade these certificates to licensed electricity suppliers with whom they have contracted. The certificate will act as proof that qualifying renewable electricity has been supplied by a licensed electricity supplier to their customers in Great Britain.

Suppliers will be expected to inform OFGEM about the number of ROCs that they wish to redeem in order to fulfil their Obligation.

Ofgem will verify that the certificates suppliers want to redeem are valid and have not already been redeemed by another party.

Suppliers with a deficit of ROCs will have the option of buying more and those with surplus certificates can sell them. This trade in ROCs is likely to be completely separate from the trade of electricity which gave rise to the certificate in the first place. It is anticipated that this will result in a GB-wide market for ROCs, thus creating an extra level of competition within the newly restructured electricity market. This market will be regulated by Ofgem who will protect against fraudulent dealing and ensure that the level of ROCs in circulation is always consistent with the actual amount of renewable electricity that has been generated and supplied by licensed suppliers to customers in Great Britain.

Ofgem will make an Annual Report on the extent of compliance with the demands of the Obligation. Non-compliance will be subject to the full range of Ofgem's enforcement powers under the Electricity Act 1989 as amended by the Utilities Act 2000.

Ofgem will also be responsible for monitoring the additional cost to electricity consumers and, in particular, the impact on those consumers who can least afford any increase in electricity prices.

2.7 Banking and Borrowing (B&B)

Banking and borrowing of ROCs are two further options for suppliers bound by the Obligation.

Banking can be achieved by redeeming a ROC issued in one Obligation period in a later one. If a supplier supplies more renewable energy than stipulated by the Obligation, they will be able to keep the "extra" certificates that they receive and redeem them at a later date. Banking can only occur to the extent that a time-dated certificate is acceptable for redemption against the Obligation in a future period.

Borrowing will occur where a supplier is permitted to avoid paying some, or all, of the buy out price but remains liable in respect of the relevant part of their Obligation until a later date. Because all buy out money must be recycled, borrowing is effectively from other suppliers.

Under such a scheme, suppliers will be able to meet part of their RO for a particular time period by using ROCs issued in previous time periods (banking) or subsequent time periods (borrowing). Giving suppliers access to a limited amount of B&B has the potential to avoid volatility in ROC prices, such as that which might be caused by unusual weather conditions affecting either electricity demand or the supply of renewable electricity.

The Government believes that there is a clear case for placing some restrictions on banking. **To avoid manipulation of the market it is proposed that a limit should be set at 50% of a supplier's Obligation in the period concerned.**

In the case of borrowing there is a risk that, if it was unlimited, suppliers would fail to meet their RO for several years and then claim that

the cost of making up the shortfall would be prohibitive. Extensive borrowing by suppliers could also lead to higher greenhouse gas emissions during the borrowing period and thus a possible threat to achievement of the UK's climate change targets. **For both these reasons it is proposed that borrowing be restricted to no more than 5% of a supplier's obligation target in any time period.**

2.8 Buy Out Payments

As already stated, the new arrangements will give suppliers the opportunity to buy out all (or a part) of their Obligation in any given period as an alternative to supplying renewables-generated electricity and/or buying ROCs. This will act as a safety net to limit the costs to the consumer should the price of renewables be higher than expected. It is estimated that the additional peak cost of meeting the 10% target is likely to be around £600 million in 2010 – representing an average increase of approximately 3.7% on 1998 electricity prices.

The buy out price will set the additional amount that suppliers would be likely to pay for renewable electricity in excess of the market value of the electricity derived through the New Electricity Trading Arrangements (NETA). Exemptions will be available at the buy out price per kilowatt-hour (kWh). Projections indicate that the value of electricity is likely to be between 1.8 and 2.5p/ kWh in 2001/2002, the first period of the Obligation. Of course, such estimates may be subject to a range of factors, and may also be affected by issues

such as future NETA imbalance payments, as well as the price of fossil fuels. The value of the buy out will have to cover the difference between this value and the anticipated value of the marginal projects required to meet the demands of the Obligation.

It is proposed that the buy out price will be set at 3.0p/kWh (£30/MWh). The Government has no plans to reduce this level at any time once the Obligation has been put in place.

It is felt that this price offers the best balance between the probability of meeting the 10% target with the associated environmental benefit and an acceptable level of additional cost to the consumer. Views are sought on this. The implications of this price are presented in Annex A, the Draft Regulatory Impact Assessment, and contrasted against the implications for a higher and lower buy out price.

If renewable electricity can be produced at less than the combined value of the market value of electricity, CCL exemption and the buy out price, then it will be cheaper for suppliers to buy renewable electricity, rather than buying non-renewable electricity in the market and paying the buy out price.

The Government also proposes to link the buy out price to the Retail Price Index. Again, views are sought on this.

2.9 Cost to the Consumer

The interests of the consumer are at the heart of the new Utilities Act. It encourages competition, and establishes a single Gas and

¹⁶ Source: Electricity Association Press Release, 21 January 2000

Electricity Consumer Council as a simplified single representative body for the energy user. The accompanying reform of the electricity market and the implementation of NETA are also expected to benefit the consumer – resulting in a reduction of at least 10% in wholesale electricity prices by 2010. This is in addition to a fall of 29% in electricity prices in real terms since 1990¹⁶.

Given the Government's stated commitment to improving access to electricity and reducing fuel poverty, there is an obvious desire to minimise any potential impact on the price of electricity through the setting of targets to increase the use of renewable energy. The Government's environmental policies cannot be implemented without regard to economic considerations. This was the rationale behind the introduction of the buy out price.

With a buy out price set at 3.0p/kWh, (£30/MWh), it is estimated that the additional cost to consumers will peak at around £600 million in 2010. This will be equivalent to a 3.7% increase on 1998 electricity prices. 3.7% of the typical electricity bill in 1998 amounted to £9.92, or just under £2.50 per quarter. This figure will thus represent up to an additional 20p a week on 1998 electricity prices by 2010.

Obviously, these figures are dependent on a number of issues – such as actual demand for electricity, the price and availability of fossil fuels, and the level of inflation. If, as expected, the policy initiatives put in place act as a catalyst to further cost reductions in renewables generation, this figure will be lower.

The Government believes that this particular figure represents an acceptable additional cost, but would welcome views on this.

Annex A, The Draft Regulatory Impact Assessment sets out the cost to the consumer in more detail, and also presents a comparison of those costs with the buy out price set at different levels.

Whatever the level of the buy out price, the cost to the consumer is likely to be outweighed by the range of intangible benefits and outcomes to which the Obligation will contribute. Electricity consumption in the UK is set to grow from 310 TWh in 1998 to 360 TWh in 2003 and to 380 TWh in 2010. It is against this background that the electricity consumer's increasing demands for diverse, secure and sustainable energy supplies at competitive prices now, and in the future, creates the need for investment in renewable energy projects. Security of supply can only be achieved through diversity of supply, to which renewables will be a major future contributor. Thus the consumers who meet the additional cost of the Renewables Obligation will benefit directly from the new energy supplies it subsidises.

The electricity consumer is not the sole beneficiary. As the concept of sustainability embraces measures to abate climate change, which have a global benefit, and to reduce emissions of acid rain precursors, which have a regional benefit, the beneficiaries therefore extend beyond electricity consumers in Great Britain.

2.10 Recycling Buy Out Payment Receipts

The Utilities Act 2000 stipulates that the receipts gained from the buy out payment must be returned to suppliers. Receipts could be recycled either to all suppliers in proportion to market share, or only among those who have chosen to comply with the Obligation by redeeming the required number of ROCs, in proportion to the degree of that compliance. Those ROCs will themselves have been gained in one of two ways – either through the physical supply of power from eligible renewable sources, or purchase independent of the electricity which gives rise to their issue. Recycling buy out payments will have the effect of raising the value of electricity from renewable sources if total supply should fall short of the Obligation targets.

In order to provide further commercial incentives for electricity suppliers to fulfil the Obligation, **it is proposed that buy out payments will be recycled in proportion to actual fulfilment of the Obligation through the supply of renewable energy and/or purchase of ROCs.** Funds raised from the proceeds of buy out payments will be recycled to suppliers in proportion to the extent to which they have met their Obligation by producing the requisite number of certificates.

If a supplier chooses only the buy out option it will not get any of that money back and will be effectively condemning itself to competitive disadvantage relative to its competitors. This should act as a sufficient disincentive to those who would choose to see the buy out as an

“easy” option. Each time a supplier pays the buy out price, it knows that money will be passed back to its rivals who have chosen the renewables route.

The proceeds given to suppliers will be calculated by the following formula:

$$\text{£p} = \text{£T}/y$$

£p = Proceeds per certificate redeemed

£T = Total receipt from buy out payments from all suppliers

y = total number of certificates redeemed in the Obligation period by all suppliers

The payment for each **individual** supplier (£S) can then be calculated by:

$$\text{£S} = \text{£p} \times \text{Number of Certificates redeemed by that supplier.}$$

This can be illustrated by a simple example, which assumes the following:

- The total supply market is 1000 kWh;
- The RO is set at 10% – giving 100 kWh;
- The buy out price is 3p/kWh;
- Total generation by renewable sources eligible for the RO is 73 kWh.

It is assumed initially that each individual supplier has a shortfall against its obligation. In that case, total buy out payments will be $(100 - 73) \times 3 = 81p$. This means that each supplier will receive $(81/73)p = 1.11p$ for each unit of renewables they redeem.

What is the amount that a supplier would be prepared to pay for an extra ROC in this

example? Buying an extra unit means that it saves 3.0p buy out payment and will also receive an extra 1.11p in the share out of the “pot”. So the buyer is prepared to pay 4.11p, but no more, for an extra certificate. Likewise, a supplier selling a certificate would face an increased buy out payment of 3p and would see its share of the “pot” fall by 1.11p. So a seller would require at least 4.11p. This suggests that the price of certificates, if sold ex-post when their supply is fixed, would settle at 4.11p.

What happens when a supplier is able to redeem more ROCs than required to meet its Obligation? Assuming that the buy out price is set at 3.0p/kWh, for each additional ROC purchased, the total amount in the overall “pot” will increase by 3p. The extra unit will give that supplier a slightly increased share of a slightly increased overall fund. Using the figures above, the supplier would be prepared to pay 1.15p, or a 1/73 share of the increased pot of 84p. Clearly, this is well below what another supplier would be willing to sell for: so by keeping its ROC it would have saved itself the buy out price, and earned itself a greater share of the total fund.

Concerns have been expressed that the recycling system might encourage large suppliers to buy up all available certificates. The Government has analysed the possibilities of this occurring, and believes that this is unlikely. For example, if a supplier with a small share of the market were to buy up all the certificates, it would have to pay more than the buy out price for each one, while the return achieved (£S) would be minimal and result in a loss.

2.11 The Case for a Banded Obligation

Industry has indicated a relatively high level of support for an approach that takes into consideration the different stages of individual technologies. As already stated, some technologies such as large scale hydro are already commercially viable, while others remain at a much earlier stage in their development, and require varying degrees of assistance to advance further to a stage where they could be commercially deployed on a large scale. A “banded” Obligation would address these differences by setting different buy out prices for different technologies, with those in need of the greatest incentive having the highest buy out price. Banding would impose an obligation on suppliers to supply a specified amount of electricity from specified renewable sources.

The Government has considered the arguments for a banded Obligation and is proposing to reject this approach. It takes the view that it would involve Government in choosing which specific technologies should be used to meet the Obligation. This runs counter to the market led approach that has been designed to ensure that suppliers will meet their Obligation by the most economic means. The Government does not want to segment or unduly distort the marketplace, or to send out the message that some renewables are more important to the UK’s targets than others. Instead, it believes that competitive forces should be the drivers that shape the industry that emerges as a result of

the introduction of the Obligation. It believes that, to help bridge the gap between initial demonstration and commercial viability, early offshore wind and energy crops projects should instead be supported through capital grants.

In addition, a banded Obligation would amount to an unacceptably long term and inflexible commitment by Government to particular technologies. To implement such a policy would require Government making firm and irrevocable decisions as to which technologies should be used to meet the Obligation. This would fail to take future technological and market developments into account, and perhaps lead to resources being directed to areas of least need. The Government's preferred approach is sufficiently flexible to accommodate both changing circumstances and future developments, which are inevitable over the period of the Obligation. The Government will keep its policy under review while maintaining a dialogue with stakeholders.

2.12 Capital Grants

The Government anticipates that a significant contribution from energy crops and offshore wind will be needed by 2010 if the 10% target is to be achieved. However, these sources have yet to make any contribution to electricity supplies in the UK and are at a very early stage of commercial development worldwide. Initially, at least, electricity from these sources is likely to be more expensive than that from more established renewables, such as onshore wind and landfill gas, and it will be difficult for those involved to compete.

The Government is, therefore, proposing that a small number of early projects should receive additional support in the form of capital grants. The experience gained from these projects will help reduce costs and risks towards the point where they can compete without such support, thereby bringing further investment options into the renewables marketplace.

More details of the proposed capital grants are at Annex C. Subject to approval from the European Commission and following full consultation with industry, it is anticipated that applications will be invited from next April. It is proposed that grants of up to 40% of eligible costs will be awarded on the basis of the lowest cost to DTI in £ per MW capacity installed. There will be separate schemes for offshore wind and energy crops and applicants will be required to obtain all consents necessary for construction of their project in advance. Subject to the views of industry, applications will be invited for submission by the end of 2001, but this deadline could be extended if insufficient proposals were received. Proposers will be given one year to complete their financial arrangements and commit to the project before their grant is re-allocated and the grant terms will be structured to encourage early completion.

Section

3

Other Policy Instruments

The Obligation and capital grants are two elements of the Government's strategy for renewables. The other strands of this strategy are: exemption from the Climate Change Levy for electricity generated from renewables; a renewed programme of Research and Development (R&D) and support for technology transfer; and a new strategic approach to planning for renewables within the regions.

Climate Change Levy Exemptions

The Climate Change Levy will come into effect on 1 April 2001. The Levy on electricity sales will be set at 0.43p/kWh, equivalent to a 7-15% increase in the price of electricity to business energy users. The Levy will not be placed on domestic consumers. Qualifying electricity from renewable sources will be exempt from the Levy. This forms an integral part of the UK's Climate Change Programme, helping the UK move beyond its Kyoto targets towards the Government's domestic goal of a 20% cut in carbon dioxide emissions by 2010.

Electricity suppliers will qualify for exemption if they can comply with the following conditions:

- The renewable electricity must have been generated by renewable energy generators compliant with the appropriate definitions for renewable source electricity;
- The electricity has not been generated by any means other than a renewable source;
- The supply has to be made under a contract that contains a renewable source declaration;
- The supplier has fulfilled the prescribed conditions set out by Her Majesty's Customs & Excise in the relevant statutory instrument;
- The supplier informs Customs & Excise Commissioners that they will fulfil those conditions as set out in the Finance Act 2000 and the relevant statutory instrument;
- The electricity has been supplied to customers in the United Kingdom.

Exemption from the Levy will be administered through a system of certification similar to that outlined for the Renewables Obligation. More detailed advice on CCL exemption is available from Customs and Excise – their website may be accessed at <http://hmce.gov.uk>



Supporting Programme of Research and Development and Technology Transfer

The Government aims to remove barriers to the uptake of renewables by stimulating research and development, fostering innovation, promoting technology transfer, facilitating industrial development and encouraging exports. Previous programmes have succeeded in introducing renewables to the UK market and stimulating a fledgling industry with some 800 organisations employing over 4,000 people. The Government has funded projects throughout the UK, covering a wide range of technologies and sources.

DTI's New and Renewable Energy Programme budget has risen from £9.7 million in 1998/1999 to £14 million for the 2000/2001 period. Further funding of £3.5 million per year is also available from the Engineering and Physical Sciences Research Council (EPSRC) to support R & D activities, with existing research projects totalling over £11 million. These focus on both established and experimental technologies. Further information on EPSRC's programmes can be found on their website, <http://www.epsrc.ac.uk>. Those engaged in R & D may also benefit from the recent DTI publication, *Guidelines on Research & Development*, and the R&D tax credit which was recently introduced.

In order to further develop both the UK industry and the renewable energy contribution to sustainable energy development, DTI will continue to support a wide range of activities through both its

New and Renewable Energy Programme and other initiatives.

The New and Renewable Energy Programme will continue to support:

- Resource, technology and environmental assessment;
- Research, development and innovation in industry;
- Work to address non-technical barriers;
- Technology transfer, information dissemination and public awareness.

There is also considerable scope to work with the UK Trade Partners initiative to address export markets and to help less developed countries develop their own renewable resources through a wide range of international initiatives. For example, the G8 Renewable Energy Taskforce is examining ways in which its member countries can assist in the development of renewables within the developing world, and this is an area in which Government expects the UK to play an active role.

Planning for Renewables

The Government recognises the fact that increasing the use of renewables will not be without environmental implications in local communities and landscapes. The planning system, therefore, also has an important role to play if targets are to be met. The Government wants to promote a positive and strategic approach to planning, and to create an atmosphere conducive to open and constructive dialogue among operators, the

planning authorities, and local people so that suitable sites can be identified with sensitivity and care.

DTI, in conjunction with the Department of the Environment, Transport and the Regions (DETR) is taking active steps to promote the importance of renewables at regional and local level. In February of this year DETR published its *Guidance on Preparing Regional Sustainable Development Frameworks*. This elaborates the regional approach to renewables and sets out plans for regional targets for renewables within the Regional Sustainable Development Frameworks, which the Government would like to see in place by the end of 2000.

Throughout the country, much work is already being done. In England, each of the nine Government Offices for the Regions has initiated work to prepare regional assessments and targets for renewable energy provision. This is combined with efforts to improve general environmental awareness. Some of these assessments may be based upon

existing resource studies – others are taking the opportunity to produce updated studies before they deliver guidance on how renewable energy can best be promoted and integrated into the local approach to planning.

Planning is a devolved issue and so in Scotland the Scottish Executive has drafted revisions to the *Planning Guidelines on Renewable Energy* and is about to publish a revised version designed to assist developers of renewables projects. In Wales, the same applies – responses are being sought on their *Planning: Consultation Paper On Draft National Planning Guidance For Unitary Development Plans*. In Northern Ireland the forthcoming renewables consultation will examine the development of a regional planning infrastructure and targets under the proposed Regional Strategic Framework for Northern Ireland. Throughout the UK then, the overall focus will be on the promotion of renewables within the planning process, and on the setting of regional targets for renewable energy.

Section

4

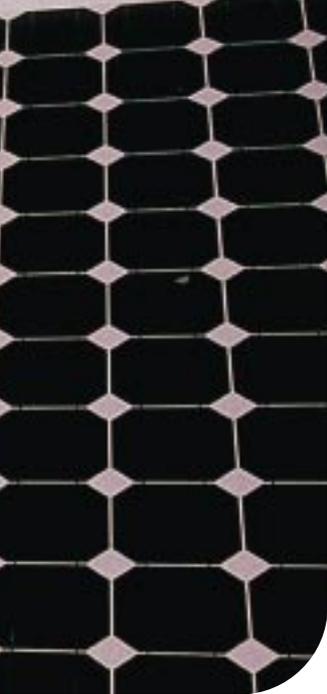
Summary and Responses

4.1 Summary

The Renewables Obligation (RO) is a key policy instrument for the Government to meet its UK-wide targets for renewables electricity supply. The Utilities Act 2000 provides the basis for a statutory instrument to impose the Obligation, which is expected to come into force in 2001 following approval by Parliament.

This document has explored the way in which the RO will operate in practice. A number of key proposals have been put forward:

- All licensed electricity suppliers in England and Wales will be subject to the Obligation;
- While relatively well-established technologies such as large scale hydro and energy from waste will count towards achievement of the 10% target, they will be excluded from the Obligation;
- Suppliers will be able to demonstrate their compliance with the Obligation through a system of certification using ROCs. Generators and suppliers may choose to trade in those certificates;
- Suppliers may also have a limited opportunity to “bank” ROCs gained in one period of the Obligation to be used in subsequent periods;
- There will also be a more limited opportunity to “borrow” ROCs against renewable electricity supplied in future Obligation periods;
- Suppliers may also choose the buy out option. It is proposed that the buy out price should be set initially at a level of 3.0p/kWh (£30/MWh);
- Receipts from buy out payments will only be recycled to those suppliers who have chosen to comply with the Obligation targets by actually supplying electricity sourced from renewables and/or buying ROCs;
- It is expected that the introduction of the Obligation will result in a maximum 3.7% increase to 1998 electricity prices by 2010;
- Capital grants to support an initial round of offshore wind and energy crop projects are proposed.



4.2 Responses to Consultation

The Government invites your views on Section 2 and Annex C of this document, namely on the details for the operation of the new Renewables Obligation, the proposals for capital grants and the impact of the individual proposals that have been presented.

Responses to this document should be sent to one of the addresses below no later than 5 December 2000. A synopsis of the comments received will be published. Please indicate in your response if you have any objection to any of your comments being published at a later date or included in the summary of responses.

Send your responses by post to:

Dr Marilyn Booth
Room 1116
Sustainable Energy Policy Unit
Department of Trade & Industry
1 Victoria Street
LONDON
SW1H 0ET

(Tel: 0207 215 2653)

(Fax: 0207 215 2674)

Or e-mail ropc@dti.gov.uk. (Please ensure that comments sent by e-mail include full contact details).

This consultation paper is also available on the DTI web site –

<http://www.dti.gov.uk/renew/ropc>.

Appendix

Saving Arrangements for NFFO-3, 4 and 5 Contracts

With the introduction of NETA and the split of the Public Electricity Supplier (PES) licences, it will be impossible for NFFO contracts to continue in their present form. Government recognises the importance of continuity in its approach to the renewables industry, especially in relation to those companies developing NFFO/SRO projects, since they will be responsible for helping to meet the Government's initial 5% target in 2003.

Therefore, the Utilities Act 2000 enables saving arrangements for existing projects constructed under Non-Fossil Fuel Obligations (NFFO-3, 4 and 5) to be made. These arrangements will ensure that existing contracts will continue. Responsibility for these arrangements will be transferred from PES's to their supply successors after the PES licence split. The Government's overall aim is to effect a seamless transition from the old to the new regime, so that generators will not notice any difference.

This will be a two-stage process –

- At NETA's start date, the Non-Fossil Purchasing Agency (NFPA) will have contracted directly with generators in amended contracts which retain the essential economic features of the original NFFO contracts as regards premium price, indexation and contract duration.
- At the licence split date, the ex-PES supply successors will assume responsibility for the new arrangements from the PES's and those arrangements will remain in place until the last contract ends in 2018.

Continuity will be assured in relation to: premium price; RPI linkage; contract duration; and access to the Fossil Fuel Levy. Generators will remain under their existing obligation to use "reasonable endeavours" to generate.

These saving arrangements will not apply to SRO projects. The Scottish Executive, as part of its consultation exercise for the Renewables Scotland Obligation, will be putting forward proposals for the treatment of SRO projects within that Obligation. In Northern Ireland arrangements for existing NI-NFFO contracts will also be the subject of the consultation which is planned to take place later this year.

Annex

A

Draft Regulatory
Impact Assessment**Title**

1. This is the Draft Regulatory Impact Assessment (RIA) of the Renewables Obligation Order.
2. The purpose of this RIA is to assess the impact of the Renewables Obligation. The Obligation has been appraised for its potential impact on the environment, particular groups of society and business. Relevant cost and benefit information has been included where appropriate. The environmental benefits have been measured and quantified in terms of carbon savings.
3. This assessment does not take into account the compliance costs associated with the Obligation. This is because the detailed design of the administrative arrangements is yet to be finalised. This document will be updated as appropriate to reflect any significant changes to compliance costs.

**Purpose and Intended Effect
of the Measure****Issue**

4. Climate change is considered to be one of the greatest environmental threats facing the world. Scientists estimate that the world's climate could warm by about 3°C over the next 100 years if no action is taken to reduce the greenhouse gas emissions that cause climate change. This rate of warming is greater than any since the last Ice Age, 10,000 years ago. Climate change is likely to have far reaching effects on all aspects of the world's environment, economy, society and health. In the UK, temperatures could rise by a further 3°C by 2100; rainfall could increase by as much as 10% over England and Wales and 20% over Scotland by the 2080s and changes to the seasons are expected. Higher temperatures in the UK might also exacerbate the effects of air pollutants, particularly in the summer months.
5. In response to the threat of climate change, developed countries agreed at Kyoto in December 1997 to legally binding targets which will reduce their emissions

of the six main greenhouse gases by 5.2% below 1990 levels over the period 2008-2012. The European Union and its Member States agreed to an 8% reduction. In June 1998, Member States agreed to share out the EU's target and the UK agreed to cut its emissions by 12.5%. The Government also has a more challenging domestic goal of a 20% reduction in carbon dioxide emissions below 1990 levels by 2010. The devolved administrations have also adopted this goal.

6. Kyoto was only the start of a longer-term process. The Intergovernmental Panel on Climate Change has confirmed that it will be necessary to stabilise greenhouse gas emissions if damaging climate change is to be avoided. Further cuts in emissions will be needed and the challenges of meeting future targets cannot be overstated.

Objective

7. The draft UK Climate Change Programme proposes a package of policies and measures that will deliver the UK's legally binding target from Kyoto to cut greenhouse gas emissions and move towards its domestic goal. Stimulating new, more efficient sources of power generation is an important part of the package. The main means of stimulating an increase in the proportion of electricity supplied from renewable energy sources will be the Obligation on electricity suppliers to procure sufficient supplies from such sources, consistent with a total supply of renewables of 10% by

2010, subject to the cost to consumers being acceptable.

8. The programme will act as the framework for a long term comprehensive strategy on climate change for the UK as a whole. It also looks beyond the Kyoto commitment period of 2008 – 2012 and uses the domestic goal as the spur for further action to cut emissions that will see the UK onto a more sustainable path by encouraging a move to a lower carbon economy. Moving towards the domestic goal will also enable the UK to ensure that it will be better placed to meet future, more difficult, targets. It will send a strong signal to the international community that the UK is leading by example; and it will help safeguard the competitiveness of UK firms by encouraging a more energy efficient industry and by stimulating the development of new environmental technologies. The final programme will be published shortly.
9. The purpose of the Renewables Obligation within this programme is to specifically encourage the uptake of renewable power generation sources by the electricity supply industry, and to reduce emissions of greenhouse gases from the sector.

Risk Assessment

10. The full implications of allowing climate change to happen at its current rate are not fully known but scientists believe that the net effect will be detrimental. Initial work by the UK's Hadley Centre has indicated that, globally:

- Sea levels are expected to rise by over 40 centimetres by the 2080s causing sweeping changes to coastal communities and environments and the dislocation of millions of people;
 - By the 2070s, large parts of Northern Brazil and central southern Africa could lose their tropical forests;
 - Climate change could affect global food supplies. Africa is expected to experience significant reductions in cereal yields, as are the Middle East and India;
 - An additional three billion people could suffer increased water shortage. Northern Africa, the Middle East and the Indian subcontinent will be the worst affected; and
 - Climate change could expose an additional 290 million people to the risk of malaria – with China and Central Asia likely to see the largest increase in exposure.
11. The potential effects of climate change in the UK were assessed in 1996. The review concluded that, although some sectors could benefit from climate change, for example forestry, some forms of agriculture and tourism, climate change would;
- Adversely affect the UK's water resources and cause more flooding and property damage, affecting not only people but sectors like the insurance industry;
 - Harm people's health through the spread of disease;
- Cause soils – the foundation of natural habitats, agriculture and the built environment – to suffer more drought, erosion and clay shrinkage;
 - Cause a northward shift in farming zones and wildlife (including pests and diseases), which could result in new species coming over from the continent as well as the loss of familiar landscapes; and
 - Cause sea levels to rise, which will increase the risk of coastal flooding and erosion, with economic impacts on property in those areas and damage to natural habitats.
12. The implications of the UK failing to meet its Kyoto target are not yet known. Discussions about compliance with the Kyoto Protocol are continuing internationally and the European Union is still discussing the implications of Member States failing to meet their respective share of the target sharing arrangement (see paragraph 5). One of the Government's reasons for moving towards the UK's domestic goal is to allow some headroom to ensure that the Kyoto target is met.
13. The UK's greenhouse gas emissions are currently forecast to begin increasing again after 2000. As stated above, another of the Government's reasons for moving towards the domestic goal is to ensure that the UK is better placed in the longer term to meet future international targets. Taking a long-term perspective at this

¹⁷ Department of Trade and Industry. (1999). *New and Renewable Energy: Prospects for the 21st Century*. London: DTI.

stage will ensure that change can be introduced gradually, thereby minimising the cost of transition.

Options

Identifying the Options

14. The evidence above clearly demonstrates that action is needed if the global community is to avoid the serious effects of climate change. The Government believes that taking no action is not an option and consequently in 1997 a review of the status and prospects of renewables was carried out. This included an examination of what would be necessary and practicable to achieve 10% of UK electricity requirements from renewables by 2010 and what contribution renewables could make to reducing greenhouse gas emissions. In March 1999 the Government published a consultation paper¹⁷ reporting the outcome of the review and possible ways forward in implementing the Government's new drive for renewables.

15. Following the public consultation DTI published an analysis of the responses to the consultation paper¹⁸ in July 1999 and then in February 2000 a conclusions paper¹⁹. The latter summarised the aims of Government Policy on renewables. These are:

- Assisting the UK to meet national and international targets for the reduction of emissions, including greenhouse gases;

- Helping to provide secure, diverse, sustainable and competitive energy supplies;
- Stimulating the development of new technologies necessary to provide the basis for continuing growth of the contribution from renewables in the longer term;
- Assisting the UK renewables industry to become competitive in home and export markets and in doing so provide employment in a rapidly expanding sector;
- Contributing to rural development.

16. The Government proposed an initial 10-year strategy in collaboration with industry to meet its aims. The Government proposed to establish a sequence of targets in the electricity sector to act as a stimulus to industry and to provide milestones against which progress can be monitored.

17. The Government proposed that 5% of UK electricity requirements should be met from renewables by the end of 2003 and 10% by 2010, subject to the cost to the consumer being acceptable. A 10% target for renewables electricity would be equivalent to around an additional 2.5 million tonnes per annum of carbon saving for the UK climate change commitments.

18. The key component in achieving these targets is the Renewables Obligation to provide a growing market in which the industry can invest with confidence.

¹⁸ Department of Trade and Industry. (1999). *New and Renewable Energy: Prospects for the 21st Century: Analysis of the Responses to the Consultation Paper*. London: DTI.

¹⁹ Department of Trade and Industry. (2000). *New and Renewable Energy: Prospects for the 21st Century: Conclusions in Response to the Public Consultation*. London: DTI.

²⁰ Department of Trade and Industry. (1999). *UK Energy in Brief*. London: DTI.

Issues of Equity or Fairness

19. The Government believes that all sectors must play their part in contributing to improving energy efficiency and reducing emissions of greenhouse gases to contribute to meeting our climate change target. Accordingly, the draft UK Climate Change Programme sets out a package of policies and measures for all sectors in the economy.
20. The power sector accounts for about 27% of the UK's emissions of carbon dioxide²⁰. The sector has a special role to play as the principal source of carbon dioxide emissions in industry.
21. The Renewables Obligation, along with a new target to double the capacity of combined heat and power by 2010, will be the main components of the UK Climate Change Programme specifically designed to assist the power sector to achieve significant greenhouse gas reductions.
23. The Renewables Obligation will help to achieve these targets for greenhouse gas emission reductions. The Obligation will form part of a package of measures alongside other existing regulations, voluntary arrangements and incentives, as well as any future initiatives designed to achieve the reductions required.
24. As well as these environmental benefits the Government believes that the Renewables Obligation will stimulate investment in renewable technologies and assist these industries to compete on the world stage in what will become a significant global industry. For example, estimates based on World Energy Council projections²¹ indicate that cumulative investment in renewables could range from £150 billion to £400 billion between 2000 and 2010. Similarly, Shell suggests that renewables will meet 40% of world energy needs by the middle of the century.

Benefits

Identifying the Benefits

22. The draft UK Climate Change Programme will help ensure that the UK meets its legally binding Kyoto target to cut greenhouse gas emissions by 12.5% below 1990 levels by 2008-2012 and move towards the domestic goal of a cut in carbon dioxide by 20% below 1990 levels by 2010.

Quantifying and Valuing the Benefits

Overall Cost to Consumers:

25. Estimates of the overall cost to consumers are shown in Table E, both in absolute terms and as a percentage of the total value of electricity sales in 1998 (£16 billion). The table assumes that the 10% target is equivalent to a supply of 39.0 TWh in 2010. This represents 10% of the **upper** estimate (390 TWh) for the total electricity

²¹ Department of Trade and Industry. (1999). *New and Renewable Energy: Prospects for the 21st Century*. London: DTI.

market for Great Britain in 2010 – and therefore the highest estimate of the additional cost to the consumer.

26. The table also assumes that receipts from suppliers are recycled in relation to the amount of compliance with the Obligation and that this does not increase the maximum potential cost to the consumer. Let us assume that the Obligation is set at 20 TWh, that the buy out price is 2.0p/kWh, that the total renewable generation is 16 TWh and that all Renewables Obligation Certificates are traded ex-post. Buy out payments then total £80 million (4 TWh multiplied by 2.0p/kWh) and the share of buy out payments is therefore 0.5p/kWh (£80 million divided by 16 TWh). Renewables Obligation Certificates would therefore settle at 2.5p/kWh – the price of the avoided buy out plus the share of total buy out payments. In aggregate, suppliers would pay generators £400 million for the Renewables Obligation Certificates and would have no net position on buy out. The costs for consumers would therefore be in line with the theoretical maximum of £400 million. (20TWh multiplied by 2.0p/kWh).

Table E: Cost of Renewables Obligation to Consumers in 2010

Buy out price (p/kWh)	2.0	3.0	4.0
Renewables Target (TWh)	39.0	39.0	39.0
Contribution from non-eligible renewables (TWh) – Hydro exceeding 10MW installed capacity – New and Existing Energy from Waste	14.0	14.0	14.0
Contribution from NFFO-3,4 &5 (TWh)	7.0	7.0	7.0
New capacity required from eligible renewables (TWh): Mainly onshore wind, offshore wind and energy crops; but also hydro not exceeding 10MW installed capacity, landfill gas and sewage gas	18.0	18.0	18.0
Maximum cost in £million for buy outs (18.0 TWh x buy out price/kWh)	360	540	720
Proposed 3.0p band for offshore wind and energy crops if buy out set at 2.0p/kWh	90	–	–
Additional cost for projects which come forward through the Obligation rather than NFFO e.g. if they fail to receive planning permission (£million)	25	55	85
Total cost (£ million)	475	595	805
% of 1998 sales value	3.0	3.7	5.0
Probability of Achieving 10% Target (1 is highest)	3	2	1

27. On balance the Government believes that the benefits of the 3.0p/kWh option will outweigh the costs involved, but is keen to hear the views of interested parties, especially electricity users, before reaching a final decision on the level of the buy out price.

Compliance Costs for Business

Business Sectors Affected

28. Depending on certain decisions regarding the design of the Renewables Obligation, the following types of firm will be affected:

- Licensed electricity supply companies;
- Generators of renewable energy.

29. The Government estimates that there will be less than 100 businesses that will be required to comply with the Renewables Obligation. Many of these businesses are large companies.

Compliance Costs for a “Typical” Business

30. The compliance costs of the Renewables Obligation fall into two categories:

- Initial start-up costs;
- Recurrent costs of complying with the obligations imposed by the Order.

31. Initial start-up costs for businesses are likely to include:

- Time spent in planning and preparing for the new Renewables Obligation;
- Changes to existing administrative and computer accounting systems;
- Training of staff;
- Any consequential printing and stationery costs.

32. Recurrent costs would include:

- Providing the evidence as required by OFGEM;
- Maintaining records and accounting systems to enable the RO to be complied with;
- Purchasing Renewables Obligation Certificates (ROCs) and providing these to OFGEM.

Consultation with Small Business: “The Litmus Test”

33. The preliminary consultation on the Renewables Obligation will take place in the autumn of 2000. The results of this consultation, and in particular responses from small businesses, will be included in an updated RIA to be produced following the consultation.

Other Costs

Distributional Effects; Number and Type of Losers; Average Loss; Gainers

34. It is not possible to say at this stage what the net effect of the introduction of the Renewables Obligation will be on individual industries or sectors. The net effect depends on:

- The future energy consumption of firms in the sector;

²² Department of Trade and Industry. (1999). *New and Renewable Energy: Prospects for the 21st Century*. London: DTI.

- The way in which licensed suppliers choose to pass on the cost of complying with the Renewables Obligation.

Gender Impact

35. None envisaged.

Environmental Impact

36. The Renewables Obligation is expected to save around 2.5 million tonnes of carbon a year by 2010. These savings will make an important contribution towards meeting the UK's climate change targets.

Effect on Work Incentives

37. It is expected that the Renewables Obligation, by stimulating investment in new environmentally beneficial technologies, will have a favourable impact on employment. As stated in paragraph 24, the worldwide market for renewables has the potential to grow significantly. Previous estimates²² have suggested that working towards the 10% target, combined with efforts to improve export capability, could result in an additional 10,000 – 45,000 jobs in the UK renewables sector. These figures must be treated with caution, however, given the dearth of rigorous research in this area.

Impact on Retail Price Index (RPI)

38. The Obligation is expected to increase electricity prices by around 3.7% in 2010 depending on the final form of the

Obligation and in particular the level of the buy out price. The impact on the RPI is expected to be less than 0.1%.

Results of Consultations

39. A preliminary consultation on the Renewables Obligation is proposed for the autumn of 2000. A final statutory consultation is proposed for spring 2000. This RIA will be updated following these consultations.

Summary and Recommendations

40. Although additional costs are likely to be incurred by the power sector, business and the public as a result of the introduction of the Renewables Obligation, the Government believes that the economic, environmental, social and health benefits to be gained significantly outweigh these costs.

Enforcement, Sanctions, Monitoring and Review

41. The Renewables Obligation will be administered by OFGEM. Administration and enforcement will also be undertaken by OFGEM. The level of the buy out price is subject to a further statutory consultation, the results of which will be incorporated in this document when available. Post Implementation Review (PIR) is subject to ministerial decision.

Annex

B

Renewables Obligation Certificates for Demonstrating Compliance with the Renewables Obligation in England and Wales (and the Renewables (Scotland) Obligation)

Introduction

1. The proposals call for the issue of two separate certificates to renewable electricity generators for the same quantity of physical generation, one relating to exemption from the Climate Change Levy – the Levy Exemption Certificate (LEC) – and one to the Renewables Obligation – the Renewables Obligation Certificate (ROC). The institutional arrangements and processes of each mechanism are fundamentally similar, amounting to the accreditation of generators, the issuing of certificates, their transfer between parties, their registration and their redemption (or consumption). Related practical arrangements for metering data collection, the treatment of losses and disputes are also proposed.
2. The ROC & LEC mechanism is proposed for its ability to carry necessary evidence in a flexible and transparent way. This system infers certain advantages over other options, including its ability to integrate different policy instruments, to simplify the trading of renewable energy benefits (where appropriate), to achieve compliance with policy objectives with maximum economic efficiency, and to provide a robust, fraud-resistant framework for renewable energy.
3. The intention of Government is that both the CCL exemption value and the RO compliance value should both support the same quantity of renewable benefit. Because the CCL exemption value and the Renewables Obligation compliance value are ‘additive’, it is necessary to use separate certificates. These are termed Climate Change Levy exemption certificates (simplified to LECs) and Renewables Obligation Certificates (ROCs).
4. Whether the voluntary market value will be additive to either or both of the CCL or RO values has yet to be decided. One view is that it should be left to the market (i.e. the obligated supply companies) to decide how to harness any voluntary demand. It is important that voluntary consumers are not misled, however, and that accurate information is available that explains the relationship between the supplier’s obligation and the voluntary tariff.
5. In short, the mechanism amounts to the

accreditation of generators, the issuing of certificates, their transfer between parties, their registration and their redemption.

Details of the Mechanism

Certificates as a Means of Evidencing Supply

6. 'Green certificates' is a generic term for instruments that validate and carry the evidence of the renewable benefit arising from renewable electricity generation. Two distinct types of certificate are proposed: LECs and ROCs. One of each type would be issued to evidence the generation of the same quantity of energy from a qualifying renewable source.
7. In practice, these certificates may take an electronic form. OFGEM will hold accounts for each party involved in the production, trading and redemption of certificates. Buyers and sellers of certificates (or parties transferring the certificates in the case of LECs) will inform OFGEM of each transaction.
8. The information content of the certificates would need to include:
 - The name of the plant at which the electricity was generated and, if appropriate, the process which has been used;
 - The type of technology used in generation;
 - The name of the generator;
 - Date and period of generation;

- Quantity of electricity generated;
 - A unique identifier.
9. The amount of information that appears on the 'face' of the certificate, i.e. information that is available to parties transferring the certificates, need be quite limited. However, all other data relating to a single certificate would, of course, be available through the unique certificate identifier.
 10. The size of the certificate, denominated in the underlying energy, could be 10 MWh, a size commonly discussed elsewhere in Europe. Smaller denomination certificates would enable smaller generators to access the market more easily, but could carry transaction cost penalties.

The Central Role of OFGEM

11. OFGEM will assume a central role in the mechanism. It will be responsible for monitoring the arrangements for both ROCs and LECs in respect of renewable source electricity. In each case, OFGEM's responsibilities and functions will be laid down in the statutory instruments made under the Utilities and Finance Acts respectively.
12. In respect of the RO, OFGEM's role will be to accredit renewable energy generators, to issue and register ROCs, to manage suppliers' redemption of them and to make reports to DTI. It will also administer banking and borrowing, and

arrangements for recycling buy out payment proceeds.

13. OFGEM have the option of managing the certificate mechanism in-house or through chosen agents.

Components of the Mechanism

Accreditation of Qualifying Generators

14. OFGEM will accredit renewable energy generators that wish to participate in the mechanism. The scheme for RO accreditation will be separate from that for CCL exemption. The purpose of accreditation is to ensure the 'quality' of certificates in the system. Without such registration, the system could be open to abuse, and confidence in the system could be eroded. OFGEM will maintain a register of accredited renewable energy generators.
15. The nature, scope and duration of accreditation will depend on the generation technology, prime mover source and electrical configuration of the generator. In general, more complex arrangements (such as thermal plant burning a variety of eligible and non-eligible fuels) may require more intensive accreditation than simpler plant (such as a wind farm with a single electrical connection and metering point). Renewable energy generators would first complete questionnaires to establish the basic information, and this may be

followed up by site visits as considered necessary by OFGEM.

Certificate Issuing

16. OFGEM will be the issuing body for both CCL and RO purposes. The metered output data for each generator will need to be verified. This data will be passed to the issuing body, in accordance with existing data collection protocols. Separate certificates (LECs and ROCs) will be issued to an accredited generator that qualifies under each scheme, or to their assignees if appropriate. Certificates may be issued monthly or at another frequency that would be dependent on the amount of generation.
17. Suppliers will be responsible for ensuring that all relevant information is presented to OFGEM.

The Registrar Function

18. Managing the issuing and redemption process is a core function within the mechanism, for which OFGEM will have responsibility. This registrar function is the process of recording, issuing, ownership, transfer and redemption of certificates. The registrar will hold accounts for each supplier and renewable energy generator involved in the mechanism. In the case of the CCL, transfers will be direct from the generator to the supplier as an integral part of the electricity sale **as LECs will not be traded separately from the electricity**

to which they relate. In the case of the RO, title could pass between many hands as ROCs are traded. Security arrangements for the registration system may be desirable to verify title to ROCs, to enable tracking and to prevent fraud.

Certificate Redemption

19. Redemption, as applied to certificates, is an action that may also be described as destruction, cancellation, retirement or other such terms. Redemption is the end-point of the certificate's life cycle, and from the point of redemption onwards the certificate is no longer available for sale or transfer. Ownership of the certificate has effectively passed to the body, or the scheme, against which it is redeemed.
20. There is no statutory requirement on suppliers to claim renewable exemption from the CCL, although there is an economic incentive to do so. By contrast, there is a statutory requirement on suppliers to either demonstrate compliance with the Obligation (i.e. to redeem ROCs), or to pay the buy out charge. In physical terms, redemption of a certificate entails a change to the status of the certificate in the electronic register.

Reporting

21. OFGEM will report to each supplier its Renewables Obligation Certificate balance. Moreover, it will make reports on each supplier's performance to DTI. Further public reporting on the certificate

mechanism will also be appropriate.

The Role of Traders and Market Place Providers

22. The market in Obligation Certificates may be facilitated by third parties such as:

- Brokers, who exist to bring together buyers and sellers usually in return for a fee related to the size of the trade. The early days of the certificate market will suit a brokerage function since the market will be information-rich, with a limited number of participants, and highly illiquid.
- Exchange providers, who provide (usually) an electronic marketplace which buyers and sellers may use, usually in return for a joining fee, and trade directly. The benefits of such market places are high liquidity, and the ability of participants to see a representative 'market price'. Typically an exchange will also provide full financial settlement facilities, and can be in a position to provide other elements of the overall mechanism, such as a registrar function.
- Traders, who take a position in the market (unlike brokers and exchange providers), in the expectation of making profit. Such position-takers, otherwise described as speculators, can fulfil an important function by helping to provide liquidity. Traders could have accounts with the Registrar.

Imports and International Protocols

Imports

23. Imported certificates will be acceptable to OFGEM in terms of the evidence they carry, providing they have been correctly issued under an issuing procedure that is acceptable to OFGEM. The question of proof of electricity supply by a licensed supplier to customers in Great Britain is more complex. All such supplies will nominally transfer across electricity interconnectors. In order to judge legitimacy of imported certificates, OFGEM will wish to judge whether the claimed import of the underlying energy could physically have taken place – in other words, whether capacity exists on an interconnector that would permit physical energy to be imported.

International Protocols

24. In order for overseas participants to supply renewable source electricity to suppliers in the UK to qualify for CCL exemption, or for such supplies to count against a supplier's RO, OFGEM will have to agree protocols with their counterpart issuing bodies in participating countries. This 'reciprocity' will ensure that there are common definitions of the commodity, and common procedures for the accreditation of generators, issuing, supervision and redemption of certificates. Moreover, accreditation bodies

in each state will need to agree to accept certificates issued in one state and redeemed in another. The certificate mechanism is sufficiently flexible to easily permit this type of trade.

25. However, it is not envisaged that an electricity generator receiving operating aid under another regime to support renewables, including the NFFO, would be eligible to receive operating aid as a result of the electricity being eligible for the Renewables Obligation. This approach is designed to avoid the cumulation of aid and encourage a liberalised market for renewable electricity, despite the fact that many renewables require operating aid in order to be commercially viable.

Application to the RO

26. The Utilities Act makes provisions for the RO that are similar to the provisions for CCL exemption, but with some important distinctions. The RO will allow suppliers a limited opportunity to bank and borrow Obligation Certificates, to defer their compliance or to choose the buy out option.
27. A party wishing to bank certificates into a future year is accepting a risk that their value could fall. This risk creates a natural limit to banking, tending to prevent 'hoarding'. The cost of borrowing could be calculated in financial terms rather than energy terms (since it is essentially borrowing from the buy out fund). This should be based on the money forgone by compliant suppliers from their recycling

entitlement and so could be some function of bank base rates.

28. Suppliers may, if they wish, fulfil their obligation in whole or part by paying a buy out price. The buy out revenues should be recycled back to suppliers in relation to their degree of compliance through the redemption of ROCs. OFGEM will monitor suppliers' compliance and report to suppliers and DTI. Due to timing cycles, the compliance information may not be available until two months after the end of a period, and even at this point the compliance information may be provisional due to the reconciliation process for unmetered supplies.
29. The duration of each compliance period will be set by DTI, but is likely to be a year, although it is proposed that the first period be set at 18 months. OFGEM will calculate the degree of compliance at the end of that period. OFGEM may also publish reports that describe each supplier's percentage compliance. Each supplier will be responsible for informing OFGEM of the quantity of Obligation Certificates that they wish to redeem, bank or borrow, or the amount that they wish to buy out. Suppliers' accounts in the register will be updated accordingly. Throughout the following settlement period OFGEM will issue invoices and payment notes as it is informed of adjustments to each supplier's portfolio. The process will end 14 months after the end of the period, by which time all suppliers' supplies should have been reconciled by the settlements process.

Disputes

30. A number of areas with potential for dispute have been identified, as have potential mechanisms to be used for resolution of those disputes:
 - *Accreditation.* Disputes could arise between generators and OFGEM. Disputes must be handled so as not to compromise OFGEM's compliance with its statutory functions. Options for resolving such disputes could include arbitration, judicial review, litigation, or internal review. The latter approach is the most appropriate as it does not conflict with OFGEM's statutory duties.
 - *Certificate issuing.* Disputes could arise on over- or under-issuing, possibly arising from meter reading or similar errors. The correct quantity of certificates to be issued must be calculated, as must a means for calculating the monetary value of the re-adjustment.
 - *Meter reading.* Disputes could arise between suppliers and metering agents, over lateness, faulty meters, or incorrect readings. These could be covered in agreements between the parties concerned with the assistance of OFGEM.
 - *Ownership.* Disputes could arise when parties dispute the title to Obligation Certificates. The terms of any agreements governing trading should cater for the resolution of such disputes.

Annex

C

Capital Grants

Introduction

1. The proposed Renewables Obligation (RO) will encompass electricity generated from both offshore wind and energy crops and the Government anticipates that a significant contribution from these sources will be needed if the proposed 10% target is to be reached. The Government recognises, however, that early development of these resources is unlikely without additional support.
2. The Government is proposing, therefore, that a small number of early commercial demonstration projects should be given additional funding in the form of grants towards the capital cost of plant construction.
3. This Annex sets out the Government's proposals. Subject to State Aid approval from the European Commission, it is proposed that applications will be invited from April of next year (2001). The Government anticipates that the information in this Annex will enable industry to begin preparation of project proposals in advance of the formal launch.

It intends to open a register for expressions of interest from potential proposers early in the New Year. It is expected that comprehensive application and guidance packs will be issued in April next year. **Full details will be developed in partnership with industry to ensure that industry's needs and commercial requirements, as well as the Government's policy objectives, are met. Details of the funding available will be announced by the end of October this year.** Proposals for evaluating the effectiveness of the expenditure will also be developed. Some of the main issues requiring further discussion are indicated in the following paragraphs.

4. **Separate schemes are proposed for both offshore wind farms and for projects generating electricity from energy crops.** The following section sets out proposals for offshore wind. The Government anticipates that the energy crops scheme will be broadly similar but the final section of this Annex highlights some of the differences that may be necessary to reflect the different nature of the projects

involved. Prospective proposers are encouraged to consider these proposals further so that full proposals can be brought forward swiftly in the New Year.

Offshore Wind

Aims and Objectives

5. The primary aim of the scheme is to stimulate early deployment of a significant capacity of offshore wind farms in order to:
 - Deliver an early contribution to the Renewables Obligation (RO) and emission reductions;
 - Underpin development of the industry and equipment supply chains;
 - Provide a learning experience that will improve confidence and help reduce future costs towards the point when projects can proceed without additional support.
6. In developing these proposals the Government seeks to maximise value for money from the public expenditure involved by:
 - Securing the maximum contribution from industry and the maximum generating capacity possible for the funding available;
 - Promoting development of a diversity of UK based companies capable of implementing such projects in future;
 - Ensuring that successful proposals progress to completion and generate as swiftly as possible;
 - Supporting a range of projects involving different technical and commercial approaches;
 - Contributing to the development of technologies which can offer future cost reductions and provide experience of their commercial deployment and operation;
 - Ensuring that electricity generated by successful projects is made available to electricity suppliers in Great Britain to help them fulfil their RO.
7. It also seeks to:
 - Provide a fair, transparent and auditable process;
 - Ensure compliance with any legal requirements;
 - Minimise the burden on applicants and grant recipients;
 - Maximise uptake of the funding available.

Key Proposals

Award Process

8. A competitive award process will help ensure that the taxpayer gets best value for money and will maximise the number of projects and amount of capacity that can be supported with the funding available. Following an open competition,

grants will be offered to those projects requiring the lowest grant per unit generating capacity (£/MW). All proposals will be screened for compliance with defined criteria and non-compliant proposals will be rejected before selection.

9. Should there be two or more equally ranked bids at the margin, preference will be given to the proposal with the lowest percentage contribution to eligible costs. If some funding still remains unallocated the project with the next lowest cost per unit capacity which can be funded will be chosen.
10. Proposers will be allowed to withdraw their proposal at any time before the closing date. They will also be allowed to re-submit any proposal in its original form, or submit a new or modified proposal at any time before the closing date. Once the closing date is reached, however, all proposals will become final and DTI will not enter into any subsequent negotiation on the level of grant or other aspects of any proposal.

Compliance Criteria

Level of Funding

11. The maximum level of funding proposed is 40% of eligible costs (as defined in paragraphs 31 and 32). Public support from other sources, including the European Union, will be permitted subject to the maximum level of support from all

sources (other than the RO and exemption from the Climate Change Levy) not exceeding 40%. Support from other sources must be declared as part of the application. Projects dependent on such support where it has not yet been granted will not be accepted. Nor will projects that have been supported under the Non-Fossil Fuel Obligation in England and Wales or the equivalent arrangements in Scotland.

12. **To ensure that a diversity of projects and developers can be supported it is proposed to cap the total grant available to individual projects. A limit of £10 million per project would allow at least four projects to be supported. Industry views on this are invited.** At the maximum funding level of 40% each project could have a generating capacity of around 25 MW but this would rise to 50 MW with 20% funding.

Project Eligibility

13. Support will be limited to projects sited within territorial waters. This brings the projects within the ambit of the UK consents process. DTI is currently reviewing the consents process for offshore wind and will require all proposals to include evidence of compliance with the specified consents process. This will help ensure that proposals compete on a fair and equitable basis and that they can proceed quickly to completion following the grant award.

14. Only projects to be connected to the public electricity supply system in Great Britain will be eligible. Evidence of appropriate connections agreements and any related consents will be required as part of the proposal.
15. Evidence that Crown Estate will grant a lease for the proposed site will be required as part of the proposal.
16. Applications will be required to nominate a commissioning date, to be no later than a date specified by DTI. **Industry views are invited on whether a period of three years from the initial closing date of the competition would be appropriate.**

Applicant Eligibility

17. All applicants must be UK legal entities. This includes UK registered subsidiaries of organisations with head offices elsewhere. Public sector organisations, whether acting on their own, or as part of a consortium, will not be eligible.
18. Applicants must be the legal entities who would hold beneficial ownership of the completed project. This would include equity investors but not those lending money to finance a project.
19. Proposals from both individual companies and consortia will be eligible. Consortia will be required to provide evidence that all appropriate legal arrangements, such as a collaborative agreement or joint venture company, are in place at the time

of their application. This will help to ensure that projects that are selected for funding can progress rapidly to completion.

20. To ensure that supported projects are likely to proceed, proposers will be required to specify how they intend to fund the project. All applicants and each partner in any consortium will be subject to a financial viability test. Where loan finance is proposed, evidence that this is likely to be forthcoming will be required. This might be in the form of an indicative offer.
21. In order to encourage a diversity of project developers the Government wishes to limit each applicant to one proposal (though as discussed above, they would be able to withdraw and resubmit their proposal or submit a different proposal at any time before the closing date). For applications from consortia, however, it may not be practicable to limit consortium members to participation in a single application. **Industry views on this issue are invited.**

Other

22. An authorised representative of the applicant must endorse the application before submission to DTI. For applications made on behalf of consortia an authorised representative of each partner will also be required to endorse the application.

23. DTI will publish details of all proposals, not only those that are compliant or are awarded a grant, when the results of the competition are announced. DTI intends to publish the following information for all proposals:

- Identity of applicant (including consortium membership where relevant);
- Project location and capacity;
- Number and size of turbines;
- Estimated investment cost;
- Grant requested;
- Total public support from all sources;
- Financing arrangements (source of funds, loan terms including interest rates, duration and fees);
- Proposed commissioning date and project description (including key technical features).

Grant Conditions and Payment Terms

24. Provisional acceptance of any offer of grant will be required within three months of the date of offer. Applicants will be given a further nine months to confirm final acceptance, provide evidence that all the required finance is in place, and confirm that the project will proceed. If any applicant fails to comply with this requirement their offer of grant will be revoked and the funds offered to another

project, selected in accordance with the original competition rules.

25. All proposed changes of beneficial ownership or bankruptcy proceedings etc. (including consortium partners) must be notified immediately. Grant entitlement will cease and repayment of any grant already received will be required on the bankruptcy of any proposer or its parent company. At the discretion of DTI, the grant may also be withdrawn and repayment required on the bankruptcy of any partner in a consortium or their parent company. Proposed changes in beneficial ownership will require prior approval. On any unapproved change in beneficial ownership grant entitlement will cease and any grant already received will become due for immediate repayment.

26. At the discretion of DTI, grant entitlement will cease if any specified “key elements” of the project change. We propose that these key elements should include project location and total generating capacity.

27. Grant recipients will be required to notify any subsequent application for or award of European or State Aid. The grant payable will be reduced by the amount of any award not declared in the original application.

28. Quarterly progress reports will be required until the project is commissioned. Annual Reports will be required for a period of

three years thereafter. Information required in Annual Reports will include plant availability, load factor and operating and maintenance costs. Information in the quarterly and Annual Reports will be published, together with the actual investment costs, financing costs and grant payments.

29. Grant recipients will be required to co-operate with any evaluation exercise or audit investigation and with DTI promotional activity, including site visits during and after construction.
30. The grant will be paid in arrears at agreed milestones against actual costs both incurred and defrayed, subject to the maximum agreed percentage and maximum £/MW of actual capacity installed. The Government proposes to retain £100,000 against completion of the required annual reports and no more than 80% of the grant will be paid before commissioning. No payments will be made for any work undertaken more than 12 months after the scheduled commissioning date and all grant paid will become due for immediate repayment if commissioning does not take place within two years of the scheduled date. An independent accountant must certify all claims at the claimants' expense. **Industry views on appropriate payment milestones and evidence of successful commissioning are invited.**

Eligible Costs

31. Eligible costs comprise the additional cost of building the project, over and above that of building a conventional power station of comparable output. This would include the proposer's own costs and commissioning costs net of any income. It is proposed that the comparative cost of conventional generation would be based on that for gas fired combined cycle gas turbine (CCGT) plant, estimated at around £400,000/MW adjusted by a factor of 0.43 to allow for differences in output.
32. Eligible costs exclude:
 - Costs incurred before the date of the offer;
 - The cost of work contracted to connected companies unless the lowest cost following competitive tender.

Timetable

33. Applicants will require adequate time to prepare well-founded proposals and obtain the appropriate consents. The time required for this purpose is difficult to predict but a minimum period of one year seems likely.
34. **Government therefore proposes that the initial closing date for applications should be no earlier than the end of 2001** and that the results will be announced within six months. This may, however, give insufficient time for preparation of enough proposals to ensure a meaningful competition for public funds. It is

therefore proposed that the closing date should be extended by six months at a time until applications for grant totalling at least £60 million have been received. In this way it will be possible to issue grant awards at the earliest possible date.

35. These proposals are an attempt to strike a balance between a short bidding period, which would encourage early progress but might be unachievable for many, and a longer period, which might unduly delay some projects. **Industry views, including alternative proposals, are invited.**

Energy Crops

36. Prospective applicants will wish to consider how the proposed scheme might best be adapted for energy crop projects generating electricity. These projects would generate electricity from crops such as short-rotation coppice willow and miscanthus grown especially for this purpose, and may also be able to secure access to crop planting grants under MAFF's Energy Crops Scheme.
37. A number of specific issues will need to be addressed:

- Projects generating electricity from energy crops are likely to require other fuel inputs for commercial viability and to vary the proportion of different fuels over time. Should there be a minimum proportion of energy crops in the fuel supply, or would it be sufficient to reduce the maximum grant available in proportion to the percentage of total fuel input represented by energy crops?
- What evidence of the proposed fuel supply arrangements could applicants provide?
- What should the maximum grant be to ensure that a diversity of project developers can be supported?
- Would it be appropriate to exclude small projects, which tend to have higher costs? How might this be achieved and what would be the appropriate cut-off point?
- Should project location be taken into account in the award process? How might this be achieved?
- Should support be limited to projects deploying advanced technologies, such as gasification and pyrolysis, to ensure that support is focussed on those technologies likely to deliver significant cost and performance improvements in the future? How might this be achieved?

Annex

D

Glossary of Abbreviations

CCGT	Combined Cycle Gas Turbine		
CCL	Climate Change Levy	NETA	New Electricity Trading Arrangements
CHP	Combined Heat and Power		
DETI	Department of Enterprise, Trade and Investment (Northern Ireland)	NFFO	Non-Fossil Fuel Obligation (England & Wales)
DETR	Department of the Environment, Transport and The Regions	NFPA	Non-Fossil Purchasing Agency
DTI	Department of Trade and Industry	NI-NFFO	Non-Fossil Fuel Obligation (Northern Ireland)
EC	European Commission	OFGEM	The Office of Gas and Electricity Markets (also the Gas and Electricity Markets Authority)
EPRSC	Engineering and Physical Sciences Research Council	PES	Public Electricity Supplier
EU	European Union	R & D	Research and Development
HMCE	Her Majesty's Customs and Excise	RIA	Regulatory Impact Assessment
ICW	Industrial and Commercial Waste	RO	Renewables Obligation
kWh	Kilowatt Hour	ROC	Renewables Obligation Certificate
LEC	CCL exemption certificate	RPI	Retail Price Index
MAFF	Ministry of Agriculture, Fisheries and Food	RSO	Renewables (Scotland) Obligation
MSW	Municipal Solid Waste	SRO	Scottish Renewables Obligation (NFFO equivalent)
MW	Megawatt (1 million watts)	TW	Terawatt (10 ¹² watts)
MWh	Megawatt hour	TWh	Terawatt Hour

