



NEW & RENEWABLE ENERGY

Prospects for the 21st Century

**CONCLUSIONS IN RESPONSE
TO THE PUBLIC CONSULTATION**

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Department of Trade and Industry

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~~FOREWORD~~

by Helen Liddell

Minister for Energy
and Competitiveness
in Europe



NEW & RENEWABLE ENERGY

Prospects for the 21st Century

Renewable sources of energy are an essential ingredient of the Government's climate change programme and are set to make an increasingly important contribution to the provision of secure, diverse, competitive and sustainable energy supplies.

In March 1999, the Government published a consultation paper¹ seeking views on the kinds of support mechanism which might be used to promote the development of renewables. The responses offered a range of differing views and no single format was preferred. There was however some considerable support for an Obligation on electricity suppliers to supply a specified proportion of electricity from renewable sources. After further discussion with interested parties and extensive consideration within Government, we have concluded that we should move away from the existing Non-Fossil Fuel Obligation (NFFO)

arrangements and adopt a supply Obligation. The necessary legislative powers will be taken in the Utilities Bill which is now before Parliament.

This document summarises key elements of our policy and provides a guide on the working of the new Renewables Obligation. It is the Government's intention to impose the Renewables Obligation by Order, which will require the approval of Parliament. We will consult on the Order before it is made and I hope to be able to do so later in the year. The Renewables Obligation will enable us to make progress towards a target of generating 10% of our electricity from renewable sources by 2010, subject to the cost to consumers being acceptable.

¹ New and Renewable Energy: Prospects for the 21st Century.

To protect consumers from unacceptable increases in electricity prices, I am proposing to set a cap on the price of renewables subject to the Obligation. If electricity suppliers cannot purchase sufficient renewable energy at prices below the level of the cap, they will be able to buy out their Obligation in any particular year as an alternative to supplying renewables electricity. Electricity suppliers would also have the option of meeting their Obligation by the purchase of tradable green certificates. In addition, I shall be consulting the industry, as well as electricity consumers, on the costs of achieving the precise Obligation (and the rate of progress towards the overall target and price cap) in advance of the enabling Order being laid before Parliament. Equivalent arrangements will be made in Scotland.

I believe that this new mechanism provides a sound framework for the development of renewables in the longer term. It seeks to keep the level of Government intervention to a minimum and to work within the framework of a competitive market, thus minimising the additional burden on consumers through higher electricity prices.

I recognise that a 10% target would be stretching and that it will be important to ensure that the Obligation we set is realistic and does not impose an unacceptable cost on consumers, but I believe that the industry is well placed to respond to the challenge. Government is committed to playing its part, as evidenced by the recently agreed exemption for renewable energy from the Climate Change Levy. The Government is committed to expanding its supporting programme for renewables including research, development, demonstration and dissemination. The Government is also looking at the possibility of some limited additional support for offshore wind and energy crops. However, Government acting alone will not be sufficient to meet the challenge ahead. I expect to see extensive

collaboration with industry and environmental organisations to ensure an inclusive approach consistent with the significant growth in the contribution required from renewables.

This is an exciting time for the renewables industry, and an opportunity for it to move from being a fledgling industry to becoming a mainstream business activity. This policy offers good business opportunities in the home market, which will provide a good base for developing exports. Most importantly, it will make an important contribution to the protection of our environment, while contributing to diversity and security of energy supplies.



Helen Liddell
Minister for Energy and Competitiveness in Europe



PV powered service station, Bedford
BP Solar is one of the world's largest and most successful solar energy companies.

PURPOSE of report

The Government undertook a Manifesto commitment to a new and strong drive to develop renewable sources of energy. This document reports the Government's initial conclusions on its new policy following the public's response, published in July 1999, to the consultation document "New and Renewable Energy - Prospects for the 21st Century", which was published in March 1999. It is published to coincide with the introduction of the Utilities Bill to assist discussion of the powers in the Bill to introduce a Renewables Obligation on electricity suppliers. It is expected that a full report containing the proposed programme will be published later in the year after further discussion with interested parties in light of this document.



Tyseley
The 25MW energy-from-waste plant at Tyseley, awarded a contract under the NFFO-3 round, uses well-established technology to turn 350,000 tonnes of Birmingham's waste per year into electricity.

Blyth Harbour
wind farm

Border Wind's nine
turbine semi-offshore
wind farm, situated
on the harbour wall
at the port of Blyth,
Northumberland was
installed in 1992.



POLICY on new & renewable energy

The Government wishes to stimulate the development of new and renewable energy so that it can provide a continuously growing contribution in the competitive energy market alongside the more efficient use of energy. Use of renewable energy sources is an essential element of the Government's climate change programme and renewable energy is set to make an increasingly important contribution to the provision of secure, diverse, competitive and sustainable energy supplies. The Government believes that its aims for renewables can best be met within the framework of a competitive market giving the industry the greatest opportunity for technological innovation so that renewables can be made increasingly cost effective.

Aims of Government Policy

The key aims for the Government's policy on new and renewable energy 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 into 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.

Strategy and Targets

The Government proposes an initial 10 year strategy in collaboration with industry to help meet its aims. It will also be carried forward with full collaboration with international partners and contribute to the European policy expressed in the European Commission White Paper *Energy for the Future - Renewable Sources of Energy*.

The strategy will comprise a number of key elements including stimulation of the various sectors of the market; the establishing of a regional infrastructure for planning and development control; a collaborative research, development, demonstration and dissemination programme; and, removal of legal and administrative barriers.

The Government proposes to establish a sequence of targets particularly in the electricity sector, to act as a stimulus to industry and to provide milestones against which progress can be monitored. Clearly hitting higher renewable targets may, at least in the medium term, mean slightly higher costs to consumers and the acceptability of those higher costs must be fully considered. Initially the Government proposes that 5% of UK electricity requirements should be met from renewables by the end of the year 2003 and 10% by 2010. A 10% target for renewables electricity would be equivalent to an additional 2.6 to 3.0 million tonnes of carbon saving for the UK climate change commitments.

Market Stimulation

The various market sectors and technologies are at different stages in their development cycle. The Government therefore intends to stimulate the market elements in a variety of ways. Key instruments are:

- a new and long term renewable energy Obligation on suppliers of electricity together with transition of the existing Non-Fossil Fuel Obligation contracts into the new

market to create a growing market in which the industry can invest with confidence;

- exemption from the Climate Change Levy for electricity and heat supplied from renewable energy sources (excluding large hydro) to assist renewables to become competitive with existing and more polluting energy sources;
- demonstrations of new technologies, particularly in the heat and transport markets.



Solar Water Heating Tubes
Thermomax produces state-of-the-art evacuated tube solar collectors at its factories in Wales and Northern Ireland. They export over 90 per cent of their production, largely to Europe, where they are the largest supplier.

Supporting Programme including Research, Development, Demonstration and Dissemination

The Government also intends to expand its programme of supporting activities with funding from an increased budget. Key activities included within this programme are expected to be:

- resource and environmental appraisal;
- technological development and demonstration;
- removal of legal and administrative barriers including consideration of the needs of embedded electricity generation;
- provision of advice and information;
- assistance to industry in developing its export capability;
- facilitating the development of 'green trading' and 'green certificates';
- facilitating the development of regional planning infrastructure and targets for renewables;
- a marketing campaign to raise public awareness of renewable energy.



Short Rotation
Coppice
The ARBRE project
at Eggborough in
North Yorkshire will
generate 8MW of
electricity for the
National Grid.
This is the UK's first
significant power
plant to be fuelled by
energy crops.

the renewable energy OBLIGATION

Introduction

The Renewables Obligation² and the associated Renewables (Scotland) Obligation will be an Obligation on licensed suppliers to supply a specified proportion of their electricity supplies to their customers from renewable sources of energy. Any additional cost of supplying electricity from renewables will be met by suppliers and may be passed onto their customers. There will be no new levy for these arrangements. However, the cost to consumers will be limited by a price cap. This will be implemented by there being a fixed price at which suppliers can buy out their Obligation as an alternative to supplying renewable electricity. Compliance with the Obligation will need to be demonstrated to the Office of Gas and Electricity Markets (OFGEM) by suppliers providing evidence showing that specific quantities of electricity from renewables have been supplied.

Powers will be taken in the Utilities Bill to:

- impose the Renewables Obligation by Statutory Instrument, and,
- implement transitional arrangements for existing Non-Fossil Fuel Obligations (NFFO-3,4&5) and Scottish Renewables Obligations (SRO-1,2&3).

Areas covered by the Obligation

The Utilities Bill takes powers for there to be separate Obligations for England and Wales and for Scotland or for the whole of Great Britain. It is expected that an Obligation will be laid to cover England and Wales, with a separate Renewables (Scotland) Obligation.

² Separate arrangements exist in Northern Ireland.

Consultation

The Government plans to consult the industry, consumers' representatives and others on the details of the proposed Order, including whether an Obligation to achieve 10% by 2010 would impose an acceptable cost on consumers, before laying the Order before Parliament.

Scope of the Obligation

The Statutory Instrument imposing the Obligation ("the Order") will be subject to approval by each House of Parliament and in Scotland by the Scottish Parliament.

The Order will, as a minimum, specify:

- the suppliers on whom the Obligation falls (there may be some small exceptions);
- the proportion of their supplies which must be from renewable sources of energy in each year specified by the Obligation;
- the sources of renewable energy which will be eligible to count towards the Obligation, including how electricity generated using some ineligible renewables or fossil fuels will be treated;
- the evidence of compliance that must be provided to OFGEM or their agents who will be administering the scheme;
- the arrangements for the trading of green certificates as an alternative means of meeting the Obligation;
- the arrangements for suppliers to be able to buy out their Obligation (or part of it) in any particular year as an alternative to supplying renewables electricity or producing green certificates; and,
- the price of the buy out option.

Suppliers subject to the Renewables Obligation

Licensed suppliers will be under an Obligation to ensure that a specified proportion of supplies is from renewable sources.

It is intended that the proportion of supplies required to be from renewable sources in any one year will be based on the amount of electricity supplied by the licensed supplier in the previous year. If the supplier is not able to supply all or part of those supplies from renewable sources, it may instead purchase green certificates to show that another supplier has provided those supplies. If it is unable to buy green certificates it may buy out its Obligation by making a payment to OFGEM. There may be some small exceptions, for example, for new entrants to the supply market in their first year - but the intention will be to place an equal Obligation on all suppliers, corresponding to the volume of electricity that they supply.

Obligation Profile

The proportion of supplies which must be supplied from eligible renewable sources is expected to be set at a level consistent with increasing the contribution from all renewables from around 5% in 2003 to around 10% in 2010 and remaining at that level in subsequent years.

Period of the Obligation

The period of the Obligation is expected to apply until at least 2025. The Government believes that this should provide sufficient security for companies to be able to plan ahead with certainty.

Eligible Renewables

Eligible supplies are likely to include a wide range of renewable sources of energy. They may exclude hydro-electric schemes with an installed capacity exceeding 10 MW since large scale hydro has long been established in the market and is in a position to compete in the open market with fossil sourced energy.

Power from ex-NFFO-1&2 Projects

Eligible supplies are likely to include power from ex-NFFO-1&2 projects and the corresponding small hydro projects in Scotland to ensure that this power has a continuing market with an incentive for these projects to maintain their level of output in the long term.

Transitional Arrangements for NFFO-3,4&5 and SRO-1,2&3 Contracts

It will be essential to ensure that commercially viable projects already contracted under the NFFO and SRO arrangements continue to attract and retain project finance. Accordingly, transitional arrangements which aim to ensure that these projects continue to be viable are being developed by the contracting parties. The Utilities Bill will give powers for secondary legislation to be developed to facilitate this process. The Bill includes powers to continue the operation of the current sections 32 and 33 of the Electricity Act 1989 (relating to NFFO and SRO Orders and the Fossil Fuel Levy) and these measures may be amended to adjust to the new arrangements as necessary.

Co-firing and Combined Heat and Power

Electricity supplied from generating stations which also consume fossil fuels in the process to generate electricity from renewable sources will also be eligible to count towards the new renewables Obligation to the extent specified in an Order. Electricity from generating stations that export heat for beneficial use, i.e. combined heat and power stations, will be eligible where they are powered from renewable sources, on the same basis.

'Green' Certification

The Bill will make it possible for suppliers to fulfil their Obligation through the purchase of green certificates. It is intended that OFGEM will directly or through their agents be responsible for certification. Green certificates would be issued in respect of each metered unit of eligible renewable electricity.



Aerpac in Scotland
Aerpac designs and manufactures glass-epoxy rotor blades from 15m to 70m in diameter, for turbines of 50kW to 2MW.

Exemption from the Climate Change Levy

Claims for exemption from the Climate Change Levy in respect of electricity supplied to non-domestic consumers would have to be supported by a certification process similar to that envisaged for the Renewables Obligation. However, in this case, to qualify for exemption the green certificate could not be traded independently of the electricity that justified its issue. There would have to be a physical trade in the power from the generator to the supplier and its non-domestic customer claiming exemption from the Climate Change Levy.

Market for Green Certificates

Suppliers will have fulfilled their Renewables Obligation if they can produce green certificates equivalent to the specified proportion of their sales to consumers by the specified date.

Suppliers' need for green certificates to fulfil the Obligation would create a demand for green certificates. It is therefore envisaged that a market in green certificates will develop in which suppliers could trade with each other and with intermediaries. Prices are expected to vary according to the balance of supply and demand. Spot, forward and derivatives markets in green certificates may emerge, enabling generators and suppliers to hedge their risks.

The trade in green certificates may be entirely separate from trade in the electricity that gave rise to their issue. The electricity would be traded in the same way as electricity from non-renewable sources. So long as electricity from renewable sources remains more costly than fossil generation, green certificates may command a positive price in the market. The price for renewables and therefore green certificates would be higher the greater the production cost of renewables. If renewables were to become cheaper to produce than fossil generation the value of green certificates could fall to zero.

Options Open to Suppliers

Suppliers will be able to meet their Obligation by any or a combination of the following means:

- physically supplying power from renewables generating stations; or,
- purchasing green certificates independently of the power that gave rise to their issue; or,
- as an alternative, paying the buy out price to OFGEM.

Suppliers will be able to obtain renewable electricity from renewables generating stations which:

- they own;
- are owned by generators with whom they have contracted individually;
- are owned by generators with whom they have contracted collectively with other suppliers; or,

- are owned by generators with whom they have contracted through intermediaries.

The terms under which suppliers secure eligible supplies are entirely a matter for the parties involved.

Demonstration of Compliance

OFGEM will be responsible for ensuring compliance with the Obligation. In Scotland, OFGEM's Scottish office will do this in respect of an Obligation imposed on Scottish suppliers.

Option for Suppliers to Buy Out their Obligation

In order to provide a safety net so that the costs to the consumer of the Renewables Obligation do not rise out of control if there were to be serious delays in the development of the industry, the new provisions will allow electricity suppliers to buy out all or part of their Obligation in any particular year as an alternative to supplying renewables electricity or purchasing green certificates. The buy out price will effectively set the total cost of the price of renewables electricity needed to meet the Obligation which will reflect the underlying cost of alternative electricity supplies plus the buy out price. For example, suppliers who do not meet their Renewables Obligation in any particular year will have supplied their customers with non-renewable power purchased at a price of, say, 2.3p/kWh and paid OFGEM the buy out price of, say, 2p/kWh. Consequently, in this example, the

BP Solar Showcase, Birmingham
Incorporating PV, energy-saving glass and a solar heat reclamation system.



buy out price will set a cap of 4.3p/kWh on the price suppliers are likely to be willing to pay for electricity from renewables. The buy out price will therefore set an upper limit to the impact of the Renewables Obligation on consumer prices.

The buy out price is likely to be set initially at a minimum level of about 2 pence for every kilowatt-hour by which the supplier fails to satisfy the Obligation in the specified year and might be increased by an amending Order. It will be set following consultation and on advice from OFGEM and it is expected that the same buy out price will be used throughout Great Britain even if a separate Obligation is made for Scotland.



Little Packington Landfill

An 8MW Peter Brotherhood steam turbine at Little Packington landfill site, near Coventry.

Receipts from Suppliers who Choose to Buy Out their Obligation

The distribution of receipts from suppliers who choose to buy out their Obligation will be determined by the Order. The Government intends to recycle receipts to suppliers, on a basis to be set out in the Order. The recycling mechanism may be formulated to provide further commercial incentives for electricity suppliers to meet the Obligation through supply of renewable energy or purchase of green certificates rather than through buying out their Obligation. For example, receipts might be recycled on the basis of suppliers' shares of the electricity supply market or on the basis of their renewable electricity supply under the Obligation. In this way revenue from non-compliant suppliers may be fed back to compliant suppliers.

Compliance Reporting

OFGEM will report annually the extent of compliance and the additional cost to electricity consumers using information from suppliers on the cost of securing renewable supplies and the cost of alternative supplies. OFGEM may also report on the impact on different types of consumer and require additional information from suppliers. OFGEM are likely to publish such a report.

Supplementary Support for Longer Term Technologies

After further discussion with interested parties and extensive consideration within Government, we have concluded that we should move away from the existing Non-Fossil Fuel Obligation (NFFO) arrangements and in particular abandon plans for a further NFFO. It is against this background that supplementary support for offshore wind energy and energy crops is being considered. The renewable energy industry has been consulted³ on how the £50m Climate Change Levy Fund might be used to promote renewables. The closing date for responses to this consultation is 4 February 2000 and an announcement is expected later this year. We hope all those with an interest will respond to the consultation (which is obtainable through the DETR website at <http://www.detr.gov.uk/consult.htm>).

Further Obligations

Further Obligations may be imposed in respect of additional supplies from renewable sources in 2010 and beyond. Any such further Obligation is expected to amend or extend the Obligation.

³ Consultation on Energy Efficiency Measures under the Climate Change Levy Package, December 1999.



Delabole wind farm
Windelectric's ten-turbine project at Delabole in North Cornwall was the UK's first commercial wind farm, operational from 1991.

climate change L E V Y

Introduction

The Climate Change Levy is a major new policy initiative which will apply to energy used in industry, commerce and the public sector. Following recommendations made by Lord Marshall in his report *Economic Instruments and the Business Use of Energy*, the Government announced the introduction of the Climate Change Levy which will come into effect in April 2001. The Government conducted a major consultation exercise on the design issues surrounding the levy, and in the light of responses, announced a package of changes which will improve the environmental effectiveness of the levy and protect competitiveness.

Exemption for Electricity from Renewables

The Government has announced that it now intends to allow **electricity** generated from renewable energy (with the exception of large scale hydro) to be exempt from the levy. (Renewables used as energy sources in their own right, e.g. for **heat** will, as originally announced, be exempt from the levy.) In order to qualify, a supplier will have to contract with a generator or generators of eligible renewable energy to purchase such electricity and to supply it to non-domestic consumers, and both supplier and generator(s) will have to agree to independent audit by the authorities. This will provide an incentive for business to opt for electricity sourced from renewable energy and will form an important element of the new renewable energy policy.

Climate Change Levy Package

Revenue from the levy will be recycled to business via a 0.3 percentage point cut in the main rate of employers' National Insurance Contributions and additional support for energy efficiency measures. This will lower the cost to firms of hiring workers and will help to promote employment opportunities. This reform is therefore entirely consistent with the Government's Statement of Intent on environmental taxation. There will be no net gain to the public finances from this reform. The levy package as a whole will be broadly neutral between the manufacturing and service sectors of the economy. There will be £150m made available under the levy package in 2001-02 to support energy efficiency measures, £50m of which will be used to support the provision of energy efficiency advice, promoting the take-up of low carbon technologies and the promotion of renewable energy projects. The remaining £100m will be used to finance a system of 100 per cent first year capital allowances for firms making energy saving investments.



Brogborough
Landfill

The 10.7MW
generation plant at
Shanks and McEwan's
Brogborough landfill
site turns methane,
which is a very
potent greenhouse
gas, into electricity.



Elan Valley Hydro Scheme
Hyder, in response to NFFO, has successfully developed 5 separate yet interconnected hydropower schemes in the Elan Valley, Mid Wales.

SUPPORTING PROGRAMME including research, development, demonstration and dissemination

The Government intends to launch a new programme for new and renewable energy sources to help remove barriers to further uptake of renewables by further stimulating research, development and demonstration, disseminating information and facilitating industrial activities in UK and export markets. This new programme will complement the new Renewables Obligation and Climate Change Levy exemption for renewables. The programme will also involve extensive collaboration with industry, other Government Departments and environmental organisations to ensure an inclusive approach consistent with the significant growth in the contribution required from renewables.

Aims of the New Programme

The new programme will need to encompass action to tackle each of the key issues in

parallel. It would be short-sighted for example to rely on technology development without tackling non-technological issues such as planning or the availability of finance.

Each technology will progress through the stages of assessment, R&D, demonstration, market entry, full-scale industrialisation and finally open competition. Individual technology programme strategies will therefore have to encompass this process with technologies being at different stages of development at any one time. An exit strategy would be needed to encourage the industry to become competitive without subsidy. Green trading for electricity could be a significant element in a strategy to move from a subsidised regime to one where renewables operate in a purely commercial market.

In the UK Market

Action on each of the following is expected to be undertaken by the industry and Government to stimulate the development and deployment of new and renewable energy technologies in the UK:

- resource, technology and environmental assessment;
- research and development;
- demonstration;
- market stimulation and industrialisation;
- removal of legal and administrative barriers;
- marketing, information dissemination and education;
- appropriate consideration of planning and development control issues.

Particular emphasis would have to be given to the following, to develop an indigenous industry:

- industry responding to the opportunities;
- development of both components and plant;
- demonstrations of UK equipment;
- development of turnkey plants by UK suppliers;
- demonstration of technologies in the important but not historically-treated heat and transport markets.

In Export Markets

There is a rapidly expanding world market which provides opportunities for UK industry. International competition is fierce and UK industry has to compete in world markets. Other countries are ahead of UK industry at present in tackling export markets in some technologies with a range of joint Government/industry actions. For the UK to succeed in world markets it will be necessary for industry to:

- develop exporting skills within companies many of which are small and have no experience;
- develop strong trade associations with the capability to organise export activities;
- link the new industry to the established export network in Government, embassies and business;
- provide market assessments in this new and little understood area;
- develop turnkey groups capable of providing the full range of consultancy, project development, equipment and finance;
- establish demonstrations in target markets;
- reinforce links to the international institutions such as the World Bank, Global Environmental Facility, Asian Development Bank, European Bank for Reconstruction and Development, etc., all of which have policies and funds to promote the deployment of renewables.

Technology Priorities for the New Programme

Technology priorities for the new programme have been set for the development of technologies in terms of their likely cost effectiveness in home and export markets, the contribution they can make to reducing greenhouse gas emissions on differing timescales, and the scale and timing of any contribution. The classification of technology priorities for the new programme is given opposite.

DTI will prioritise its budget primarily towards the technologies as relevant to the short, medium and longer term periods in the classification table, taking account of other UK and European sources of funding. The technologies for the short and medium term are those most likely to receive market stimulation from the new Renewables Obligation.

NEAR TERM

Technologies closest to being competitive in UK or with immediate export potential:

UK and Export Market:

wastes and some biomass residues, landfill gas, onshore wind, hydro, passive solar

Primarily Export Market:

photovoltaics (stand alone), biomass residues, active solar

MEDIUM TERM (BY 2010)

Additional technologies which could contribute by 2010 and would be needed to meet a 10 per cent UK target, or with export potential:

UK and Export Market:

some biomass residues, offshore wind, energy crops

Primarily Export Market:

photovoltaics, fuel cells

LONGER TERM (AFTER 2010)

Technologies with longer term potential if pursued via R, D&D programme:

UK and Export Market:

fuel cells, photovoltaics (building integrated), wave, photoconversion

Primarily Export Market:

solar thermal electricity

VERY LONG TERM (AFTER 2025)

Technologies unlikely to be worth pursuing extensively at this time except at the fundamental research level where this would be perceived as necessary:

UK and Export Market:

tidal barrage, hydrogen, geothermal hot dry rock, ocean thermal currents

Demonstration projects will be considered where necessary. It might be particularly appropriate as a means of promoting technologies in the heat and transport markets where market stimulation via some form of Obligation would be inappropriate. A capital contribution of up to 25 per cent could be considered accompanied by independent monitoring of the project and an associated promotion and replication campaign. Demonstration projects might also be an effective way of introducing some of the more expensive near market technologies, such as offshore wind energy and energy crops, into the market stimulated by the new renewables Obligation. In addition there are underpinning technologies such as gasification and control relevant to several technologies which it would be advantageous to pursue.



Blood Hill Wind Farm
Blood Hill wind farm is located in West Somerton, Norfolk. The farm comprises ten 3-blade wind turbines, operational since 1992.

Non-Technological Priorities for the New Programme

The programme will also pursue the removal of non-technical barriers and assist UK industry to access export markets in conjunction with existing export services. Key areas for early attention are:

- embedded generation including facilitating the electricity industry in producing appropriate codes and guides for the connection of embedded generation and obtaining and disseminating an understanding of the role and value of embedded generation in the new electricity trading arrangements;

- facilitating the development of trading and green markets for renewables including introducing an accreditation scheme for renewable energy trading and investment schemes;
- raising awareness and hence reducing uncertainty of the characteristics of renewables so that consumers and players in the market are correctly informed when making decisions by information dissemination, marketing and education;
- increasing understanding of the potential and role of renewables in the liberalised energy markets;
- facilitating the embryo industry to expand into export markets.



Buckfast Abbey
small-scale hydro

The small-scale
hydro scheme
at Buckfast
Abbey, Devon
supplies SWEB
with electricity.

Programme Budget

The Department of Trade and Industry has increased expenditure on research and development, and plans to provide a growing budget for its support programme as shown below:

Year	Budget (£ million)
1998/1999	9.7*
1999/2000	11.5
2000/2001	14.0
2001/2002	18.0

* Actual outturn.

The Department expects to share cost activities appropriately with industry within the European State Aid provisions and for contributions to be sought from European sources most notably the Fifth Framework Programme.



Thetford Power Station

The 38.5MW Thetford Power Station - fuelled by 430,000 tonnes of poultry litter per year - is the biggest producer of power from biomass in Europe, generating sufficient electricity into the National Grid to supply the needs of 67,000 homes.

regional planning and T A R G E T S

Introduction

The planning system has an important role in helping to deliver the Government's targets and goals for renewable energy and climate change, which are central to achieving sustainable development, while continuing to protect the countryside. A positive, strategic approach to planning for renewable energy is essential. There needs to be an open and constructive dialogue between prospective operators, planning authorities and local people about identifying suitable sites with sensitivity and care.

National Policy

National policy for renewable energy is already part of the planning process through Planning Policy Guidance Note 22, "Renewable Energy". In Wales, the relevant advice is provided in Planning Guidance

(Wales) Planning Policy First Revision April 1999, which is currently being reviewed, and Planning Guidance (Wales) Technical Advice Note (Wales) 8 "Renewable Energy". In Scotland, the equivalent guidance is National Planning Policy Guideline 6 "Renewable Energy", also under review, and Planning Advice Note 45 "Renewable Energy Technologies". In Northern Ireland, there is no specific equivalent Planning Policy Statement (PPS) in Northern Ireland to Guidance Note PPG22 "Renewable Energy". However, the current programme for PPS production by DoE and, in particular, those for "Protection of the Environment" and "Public Services/Utilities", may address aspects of relevance to this issue.

Planning authorities must have regard to these documents in drawing up their development plans and in exercising their development control responsibilities.

The Government's new policy will provide a positive strategic approach to planning for renewable energy, including targets for renewable energy provision, from the regional level downwards to facilitate its development while continuing to protect the countryside. The Government is therefore proposing that regional renewable energy assessments should set the framework for a more strategic land-use planning approach at regional level, itself providing the framework for local authorities' development plans and decisions on individual energy projects.

Regional Approach

In order to facilitate the development of a regional approach the Government Offices for the Regions in England have been asked to set in motion the process of preparation of regional assessments and targets for renewable energy provision for planning purposes drawing upon and, where necessary, updating, existing resource studies.

In Wales, the National Assembly is about to consult on a draft of its statutory Sustainable Development Scheme, as required by section 121 of the Government of Wales Act 1998. This is being drawn up in partnership with others from the public and private sectors.

In Scotland, there is no regional planning system but the Scottish Executive shares the aim of identifying how the planning system can take on a more enabling role in relation to renewable energy.

In Northern Ireland, a review of regional planning is currently underway and it is expected that a final version of the Regional Strategic Framework for Northern Ireland, which has been the subject of a public consultation exercise, will be considered by the Northern Ireland Assembly, probably in Spring 2000.

Development Plans

Local planning authorities prepare their development plans within the framework of national policies and regional planning guidance. Development plans provide the basis for decisions on specific development proposals. This is the essence of the plan-led system of development control, which should ensure that planning decisions are not arbitrary and that developers will have a measure of certainty about what development will be allowed. In Northern Ireland, it is anticipated that, subject to the considerations of the Northern Ireland Assembly, progress will be made over the next few years to a plan-led system as in the rest of the UK.

Public Participation

There needs to be greater public familiarity with, and acceptance of, prospective renewable energy developments. More positive planning at regional and local levels will contribute to this. However, it is also important that operators prepare the ground with local authorities, environmental organisations and local people before formal planning applications are submitted. Proposals should be developed in consultation with them, with operators ensuring that they accurately set out the issues, including the contribution to local sustainable energy supplies. Informal discussions on siting and design and the local benefits of schemes, for example, involving local meetings and exhibitions, will increase mutual understanding, and help win hearts and minds.

