RENEWABLE ENERGY POLICY REVIEW

UNITED KINGDOM

Until recently, the United-Kingdom (UK) was largely self-reliant for energy, producing significant quantities of oil, gas and coal. The gradual depletion of oil and gas reserves and a decrease in domestic coal production has led to a growing dependence on imports. In the electricity sector, gas has replaced coal as the principal fuel. Since 2005, rapidly increasing energy prices, growing concerns on security of supply and awareness of climate change have raised the profile of energy in the UK. The government has come out strongly in favour of new nuclear build, while some regions are putting particular focus on renewable energies (particularly wind and tidal). The UK Government set out its energy policy on 23 May 2007 when it published its Energy White Paper *Meeting the Energy Challenge*.

However this White Paper acknowledged that the existing policies would achieve only 5% penetration of renewables in total energy by 2020, and new policies would be needed to meet the country's share of the EU target. A first step towards these new policies was the publications of a Renewable Energy Strategy consultation document in 2008. A second step was new measures in the 2008 Energy Act (see below).

In October 2008 the Government created a new Department of Energy and Climate Change (DECC), incorporating relevant sections from the Department for Business and Regulatory Reform (formerly Department of Trade and Industry) and Department of Agriculture, Food and Rural Affairs.

KEY FIGURES

- The **share of RES in total primary energy consumption** was of 2.3% in 2007[1].
- The **share of RES in the gross final energy consumption** was 1.94% in 2007[2].
- The **share of RES in the electricity production** was 5.16% in 2007[3] up from 4.6% in 2006.

1 This figure refers to inland total primary energy consumption, it hence excludes aviation, shipping etc. Source: http://stats.berr.gov.uk/energystats/dukes1_1_1.xls

2 http://stats.berr.gov.uk/energystats/dukes7_1-7_3.xls

3 http://stats.berr.gov.uk/energystats/dukes5_4.xls

- The **share of all biofuels** in the transport sector in 2007 was 1% by volume, 2.2% in 2008 (provisional data)[4].

- The United-Kingdom's dependence on external energy supplies was about 13% in 2005.

Technology specific figures

- For the first time in 2006, wind (with an 8% share) accounted for as much as hydro in primary input terms. Of the 4.43 million tonnes of oil equivalent of primary energy use accounted for by renewables, 3.94 million tonnes was used to generate electricity and 0.44 million tonnes to generate heat.

- Decreased water flow from low rainfall was the cause of the lower hydro levels in 2006.

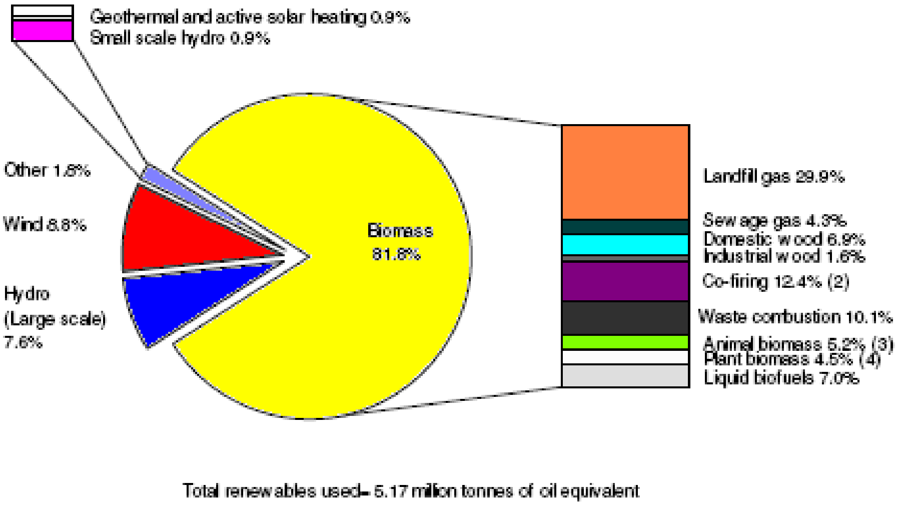
- Since January 2006 more than 540MW of wind and around 80 MW134 of other renewables, including landfill gas, photovoltaics and biomass have been installed. More than 2GW of wind is now connected to the grid – with the first GW taking around 14 years to become operational and the second only 20 months.

- A further 1,260 MW of renewables capacity is under construction; 4,600 MW has been consented, and 11,400 MW is in planning processes across the UK. The Department for Business, Enterprise and Regulatory Reform estimate that around £1billion has been either invested or committed to new UK renewable projects in the past year.

- Total sales of biofuels in the UK in 2006 were some 264 million litres, whilst total road fuel sales were approximately 49,000 million litres.

[4] https://www.uktradeinfo.com/index.cfm?task=bulloil

Renewable Energy Use (2007) [(1)]



(1) Excludes all passive use of solar energy and all non-biodegradable wastes. In this Chart renewables are measured in primary input terms – see paragraph 7.15.
(2) Biomass co-fired with fossil fuels in power stations; imported 7.3% of total renewables, home produced 5.1%
(3) 'Animal biomass' includes farm waste, poultry litter, and meat and bone combustion.
(4) 'Plant biomass' includes straw and energy crops.

Source: http://stats.berr.gov.uk/energystats/dukes08.pdf

RES TARGETS

Mandatory targets set by the Directive on the Promotion of the use of energy from renewable sources

- 15% share of RES on the final consumption of energy in 2020.
- At least 10% share of renewable energy in final consumption of energy in transport by 2020.

Indicative Target set by the RES- electricity European Directive from 2001[5]

- 10% share of RES on gross electricity consumption by 2010.

Indicative Target set by the European Biofuels Directive from 2003[6]

[5] Directive 2007/71/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market. Currently in force, sets targets up to 2010.

[6] Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport Currently in force, sets targets up to 2010, with indicative targets by 2005.

- Biofuel sales target for 2010 is 5% by volume of total road transport fuel sales. The UK Government recognises that the level of the obligation for 2010/11 falls below the 'reference value' (5.75% by energy content) set out in the Directive. The Directive allows Member States to set targets which differ from the reference values provided that any differentiation is "motivated". The UK Government's motivation is primarily that: the UK Government is not yet confident that higher levels of biofuels can be delivered in a sustainable way. The 5% by volume level is consistent with current EU fuel quality standards which impose a 5% volume-based limit for biofuel blends.

National commitments:

The UK government announced in January 2000 a 10% target RES- electricity supplied in the UK from renewable energy sources by 2010. This target has been embodied in the Government's Energy White Paper published in February 2003, which also introduced an aspiration to achieve a renewable electricity penetration of 20% of all electricity power generation by 2020. These goals were further underlined in the Energy White Paper 'Meeting the Energy Challenge' published in May 2007. The government also set out an aspiration to double this by 2020.

Progress towards the target

The UK will not meet its RES electricity target put forward by the European Commission, said a report published in March 2008 by Cambridge Econometrics. The report forecasts the British government will fall short of its 10% target for 2010 reaching just 6%.

RES POLICY INSTRUMENTS

Support for RES electricity

Renewables obligation

The Renewables Obligation (RO) is the Government's main mechanism for supporting merchant generation of renewable electricity. It was introduced in April 2002 and is the successor to the Non Fossil Fuels Obligation.

The RO places an obligation on electricity suppliers to source an increasing share of their power sales from renewable sources. In case they should not meet this obligation, they have to pay a penalty: 34.30 GBP (50.58 €) per MWh in 2007/2008. The percentage of renewable power that must be supplied is now 7.9% and will increase to 15.4% in 2015. For each megawatt hour of renewable energy generated, a tradable certificate called a Renewables Obligation Certificate (ROC) is issued.

Electricity suppliers meet their obligation:

- by surrendering Renewables Obligation Certificates (ROCs) as evidence of their own renewable electricity generation:
- by surrendering ROCs they have purchased from other renewable electricity generators;
- by paying the 'buyout' penalty;
- or by a combination of the options.

When a supplier chooses to pay the buy-out price, the money they pay is put into the buy-out fund. At the end of the 12-month Obligation period, the buy-out fund is recycled to electricity suppliers presenting ROCS.

The buy-out price is the fixed penalty that an energy supplier pays for each MWh that it falls short of its obligation. The buy-out price is linked to the Retail Price Index (RPI) and for 2007/08 the price is £34.30 per MWh. The suppliers pay this money into an account administered by Ofgem (the Buy-out Fund) and each year the accumulated Fund is shared among those suppliers who have presented RO Certificates (ROCs). The combination of the buy-out price and the extent to which suppliers have fallen short of their obligations determines the nominal value of a ROC and the total support available for each MWh of renewable electricity under the RO.

Resource	Penalty level [€cents/ kWh]	Quota in % (in year)	Year
All RES- E technologies except hydro above 20 MW, and energy from waste unless it is obtained through advance conversion technologies.	34.30 GBP (50.58 €) per MWh in 2007/2008. (annually adjusted with the retail price index)	15.4% in 2015	From 2002 to 2027

ROCs are issued to accredited renewable generators for **each 1MWh of eligible electricity generated irrespective of the technology used**. This will change to differentiated ROC issue for different technologies, when banding is introduced (see below). The Government is consulting on providing more targeted levels of support to different technologies in the form of multiple or fractional ROCs. New projects in more expensive technologies like dedicated biomass and anaerobic digestion would receive more support and those that are more economic like landfill gas would receive less. Subject to consultation and State Aid clearance, this change will take effect from 2009 at the earliest.

In May 2007, the UK Government announced – in the White paper- modifications to the Renewables Obligation (RO) legislation. Key announcements are:

- The RO will continue until 2027.
- Obligation levels will rise to 20% 'with guaranteed headroom': the obligation level will only be raised further if the growth in renewables generation justifies this.
- The RO will be 'banded': this means that technologies will be awarded more or less than one ROC for each MWh of electricity they produce depending on the technological development and costs. Banding thus stimulates emerging renewable technologies that are still more expensive. Decisions about the future bands will be taken after consultation and will then be applied until 2013.
- Emerging technologies, such as wave and tidal power, will still get support from capital grant schemes and other policies. The new Energy Technologies Institute and Environmental Transformation Fund will provide funding.

Climate change levy

Renewable electricity is exempted from the climate change levy on electricity of £4.3/MWh (approx. 6.3 EUR/MWh)

Support for RES Heating

The deployment of biomass fuelled heat projects in the UK is also supported by the £66m Bioenergy Capital Grants scheme, jointly-funded by the Department for Energy and Climate Change and the National Lottery's New Opportunities Fund. Support is targeted in four areas: amongst others: smaller heat and CHP, medium scale CHP.

Support for Biofuels

Renewable Transport Fuel Obligation

The Renewable Transport Fuel Obligation will, from April 2008, place an obligation on fuel suppliers to ensure that a certain percentage of their aggregate sales is made up of biofuels. The effect of this will be to require 5% of all UK fuel sold on UK forecourts to come from a renewable source by 2010. These targets have been set on a volume basis.

The RTFO is modelled on the existing Renewables Obligation in the UK electricity supply industry. The transport sector is responsible for 25% of emissions and through this initiative the RTFO expects to reduce the carbon emissions from road transport in 2010 by about 0.7 - 0.8 million tonnes, equivalent to taking 2.6 - 3.0 million tonnes of carbon dioxide.

Obligation

Under the Renewable Transport Fuel Obligation, the UK set a target in July 2006: Incorporation level shall reach 2.5% during the 2008/09 fiscal year, 3.75% in 2009/10 and 5% in 2010/11 (expressed in volume-thus considerably lower than the 2003 Directive's level). The levels for the latter two years were subsequently reduced to 3.25% for 2009/10 and 3.5% for 2010/11, thereafter rising in annual increments of 0.5% to 5% following the 2008 Gallagher Review – see below.

Under the scheme certificates can be claimed when renewable fuels are supplied and fuel duty is paid on them. At the end of an obligation period, these certificates may be redeemed to the RTFO Administrator to demonstrate compliance and certificates can be traded. If any obligated supplier does not have enough certificates at the end of an obligation period, it has to 'buy-out' of the balance of its obligation by paying a buy-out-price. The buy-out-price will be 15 pence per litre in the first and second years of the obligation.

In order to ensure compliance the Administrator will issue RTF Certificates according to the quantity of renewable fuel on which duty has been paid. It will be possible for companies to trade certificates. If a company cannot produce enough certificates at the end of each compliance period it will have to pay a buy out price which will go into a buy out fund.

Level of buy-out prices

The RTFO buy-out price - the price paid by fuel suppliers who fail to meet their obligation for the year by producing certificates showing biofuel supply - will remain at 15 pence per litre for the second year of the Obligation (i.e. 2009-10). The government's intention is that the level of the RTFO buy-out should be sufficiently high to ensure that obligated suppliers do not routinely resort to using it.

Sustainability requirements

The UK Government also announced on 21 June 2007 that it:

- aims to reward biofuels under the RTFO in accordance with the carbon savings that they offer from April 2010, provided that this is compatible with World Trade Organisation rules and EU Technical Standards requirements,

- aims to reward biofuels under the RTFO only if the feedstocks from which they are produced meet appropriate sustainability standards from April Promotion and Use of Biofuels in 2011.

  will ask the RTFO Administrator to report to the Secretary of State every three months on the effectiveness of the RTFO's environmental reporting mechanisms, and on the carbon and sustainability effects of the RTFO. The Government will keep the RTFO under review in the light of these reports.

In January 2007, the newly established Renewable Fuels Agency (RFA) in the UK published guidelines to companies on how to report on their fuels concerning the Renewable Transport Fuel Obligation, which is intended to entry into force on 15 April 2008. Companies can use the guidelines to provide information on the origin, greenhouse gas performance and production for all biofuels in their portfolio. Major suppliers are required to have an independently verified annual sustainability report.

Following the 2008 Gallagher Review, the government announced its intention to reduce the short term targets for the RTFO to 3.25% for 2009/10 and 3.5% for 2010/11, thereafter rising in annual increments of 0.5% to 5%. This was approved by parliament in March 2009. The industry believes this may need to be re-adjusted upwards to provide a credible path to the 2020 target.

Fuel Duty Incentives

Under the Alternative Fuels Framework published by the UK Government in December 2003, the UK Government sets out in each year's Budget the levels of fuel duty incentives for biofuels and other alternative fuels that will apply in each of the following three years. This provides certainty to support investment in the production and development of alternative fuels.
The RTFO is likely, over time, to replace fuel duty incentives as the UK Government's principal support mechanism for biofuels. However, the UK Government believes that, in the early years of the RTFO, there should be a gradual, rather than an abrupt, transition from one mechanism to the other.
Budget 2006 therefore announced that the 20 pence per litre duty differential would be guaranteed until 2008-09, and Budget 2007 has since extended it further to 2009- 10.

Enhanced Capital Allowances

The Government will re-apply for State aid clearance and, subject to that, will introduce a 100 per cent first-year allowance for biofuels plant that meet certain qualifying criteria, and which make good carbon balance inherent in their design, as proposed. In addition the Government will also Introduce a payable enhanced capital allowance for companies not in taxable profit to ensure both profit and loss making firms have an incentive to invest in the cleanest biofuels plant.

Government grant programmes

During 2006, the UK Government, through the Refuelling Infrastructure Grant Programme managed by the Energy Saving Trust, continued to provide grants toward the cost of installing alternative refuelling points including, for example, for hydrogen, electric, bio-ethanol and natural gas / biogas stations. Although not exclusively aimed at biofuels, the grant programme has attracted interest from a range of organisations considering the installation of E85 bioethanol refuelling points.

Regional Selective Assistance Grants

Regional selective assistance grants are one of the few methods of direct support for industry allowable under the EU's single market rules. During 2006 the Scottish Executive and the Regional Development Agencies continued to offer support to a number of businesses in the sector. The Scottish Executive confirmed that it would provide a £9 million grant towards the construction of a 500,000 tonne biodiesel plant at Grangemouth, due to come on stream in 2008.

Support for all RES

Bioenergy Capital Grants scheme

Funds are reserved from the New Opportunities Fund for new capital grants for investments in energy crops/biomass power generation (at least £33 million (EUR 53 million) over three years), for small-scale biomass/CHP heating (£3 million or EUR 5 million), and planting grants for energy crops (£29 million or EUR 46 million for a period of seven years). A £50 million (EUR 72.5 million) fund is available for the development of wave and tidal power, the Marine Renewables Deployment Fund.

The UK published a Biomass Strategy in May 2007 alongside the Energy White Paper. The **UK Biomass Strategy** has been developed by Department for Trade and Industry (now BERR) and DEFRA to achieve carbon savings from biomass, while complying with EU policies. This is now within the remit of DECC.

Bioenergy Action Plan

The Government published an action plan in April 2006. Key highlights include:

- The launch of a new five-year capital grant scheme for biomass heat and biomass Combined Heat and Power (CHP) systems at the end of December 2006.
- Confirmation that proposals for a new Energy Crops Scheme are to be included within the Rural Development Programme for England 2007.
- A set of regional maps identifying opportunities and optimum sitings for energy crops (short rotation coppice (SRC) and miscanthus) were published on Defra's website in May 2007
- A mapping exercise accessing the suitability of the Defra estate for conversion to biomass heating was undertaken. The mapping exercise is currently being rolled out to other Government Departments.

Renewable energy (production/feed-in) tariffs

The Energy Act 2008 included the enabling powers to introduce:

- A 'feed-in tariff for small scale low carbon electricity', and
- A 'renewable heat incentive' (which also covers biomethane injection into the grid)

The government has committed to introducing the electricity tariffs from April 2010 and the heat tariffs from April 2011.

The precise design of these two measures is now in hand[7]. The following characteristics are expected:

- The tariffs will be 'production' rather than 'feed-in' tariffs – i.e. they will pay for each kWh produced.
- They will be paid for by a levy on the energy suppliers (electricity suppliers for the electricity tariffs and fossil fuel heating suppliers for the heat tariffs).
- The electricity tariff will not apply above 5MW (to reduce conflicts with the Renewables Obligation).
- The heat and biomethane tariffs will apply at all sizes.
- Tariffs will be set for each technology classification at a level to incentivise contribution to the overall renewable energy targets.
- Tariff degression will be expected in future years, but 'grandfathering' will ensure that each installation will retain the level at which it enters the scheme.

[7] See http://www.r-e-a.net/policy/REA-policy/RET

Sources:

European Commission Factsheets by Country
http://ec.europa.eu/energy/energy_policy/facts_en.htm

Member States Reports in the framework of the Directive 2001/77/EC on renewable electricity
http://ec.europa.eu/energy/res/legislation/electricity_member_states_en.htm

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Renewable Energy Strategy consultation

Renewable Energy Association
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In the framework of the EU co –funded project: RES 2020: Monitoring and Evaluation of the RES Directives implementation in EU27 and policy recommendations to 2020

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