

## Encouraging the Growth of Wood Fuel

### *A Review of Govt Policies and Financial Incentives*

#### 1 Introduction

The Climate Change Act 2008 set the extremely ambitious target of reducing UK carbon emissions by 80% by 2050 (compared to 1990 levels). Effectively this will require both an enormous reduction in heat and energy consumption, as well as tremendous growth in renewable energy and a contribution from nuclear.

To achieve this we will need every appropriate renewable energy solution to play its full part – and this includes wood fuel.

The price of wood fuel already compares very favourably with other major fuel types such as gas and oil but the upfront capital costs are typically much higher. So like all renewable energy alternatives, some positive intervention is needed to stimulate the market to grow fast enough to achieve the ambitious goals being set.

Whilst positive stimulation is welcome, we arguably have so many policies and incentives that it is quite bewildering to assess the likely impact on the market. The purpose of this Construction Briefing is to provide a general overview of the main policy drivers and financial incentives that currently exist and are set to be introduced.

#### Scope of this briefing:

- Government policies on renewable heat and energy generation
- Incentives through planning requirements and guidance
- Incentives through building codes and regulations
- Direct grants
- Altering the economics of renewable energy



Laying district heating pipes on a new development  
Photo courtesy of Flexalen Ltd

This Construction Briefing is part of a planned suite of three on the subject of wood fuel. The other two are entitled:

- *Wood as a biomass fuel: the main issues to consider*
- *Waste wood as a biofuel*

## 2 Government policies on renewable heat and energy generation

### 2.1 Climate Change Act 2008

This is a lengthy act (over 100 pages) which government believes is particularly significant because it enshrines our long-term carbon reduction commitments into law. The opening section states that the target for 2050 is an 80% reduction on the 1990 level.

A system for setting carbon budgets for 4-year periods (the first being from 2008-2012) is defined. The budgets and actual performance are required to be regularly reported to parliament to keep the matter in mind.

This goal essentially sets the scene for all other policies on this topic.

Full act:

[http://www.opsi.gov.uk/acts/acts2008/ukpga\\_20080027\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1)

DEFRA summary of act:

<http://www.defra.gov.uk/environment/climatechange/uk/legislation/provisions.htm>

### 2.2 Energy Act 2008

This creates the powers to establish or strengthen a number of very significant financial mechanisms to incentivise renewable energy and heat. Historically incentives have concentrated on energy (but not heat), but in future the desire is to equally incentivise heat and energy. A wood fuelled combined heat and power (CHP) plant provides both direct heat (eg hot air or water radiator system) and generates electricity using a turbine, for example.



Wood pellets for use in a biomass boiler.

The main powers created that are of interest are:

- Creation of banding of Renewable Obligations Certificates (ROCs)
- Creation of Feed In Tariffs (FITs)
- Creation of Renewables Heat Incentive (RHI)

These are all discussed in section 6.

It also creates the power to fit smart metering to all buildings. According to the Energy Savings Trust, 80% of all homeowners find it difficult to understand their energy bills. Smart meters are simple to use and provide instant information on the heat and energy consumed in much the same way that some modern cars provide fuel consumption figures for the current trip.

Research has shown that having easy to read metering can lead to a 5-10% reduction in energy consumption. This act provides the powers to insist that such meters are installed in all buildings where energy is consumed.

Act:

[http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga\\_20080032\\_en.pdf](http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080032_en.pdf)

### 2.3 Renewable Energy Strategy

Government consulted on this strategy in summer 2008 and the finalised strategy is expected in summer 2009. The strategy will focus on the key incentive mechanisms required to achieve the medium- and long-term goals, one of which is that renewable energy / heat will meet a minimum of 15% of the total UK demand by 2020.

The powers to create these mechanisms exist through the acts discussed above. It is the details which now need to be agreed. Government consultation is planned for both Feed In Tariffs (FITs) and Renewable Heat Incentives (RHIs) in summer 2009 with implementation in summer 2010. Of crucial importance is the actual price levels paid. Suggestions range from 2p to 15p and more per kWh. Clearly the price needs to be high enough to incentivise building owners to invest in new equipment. To pay for this, all non-renewable heat /energy users will need to pay a levy on their energy bills – which is bound to be unpopular – but the money has to come from somewhere. The REA estimates that the increase in energy bills will be approximately 10%.

Consultation document:

[http://www.decc.gov.uk/en/content/cms/consultations/cons\\_res/cons\\_res.aspx](http://www.decc.gov.uk/en/content/cms/consultations/cons_res/cons_res.aspx)

## 2.4 Heat and Energy Savings Strategy (HESS)

Although the last couple of years have seen an enormous level of attention given to designing new buildings to a 'zero carbon' standard, the vast majority of energy is, and will continue to be, consumed by the existing building stock. This government strategy, which is being developed to address this, received a public consultation which ended in May 2009.

Some of the key aims given in the strategy are as follows:

- The desire to see emissions from all existing buildings approach zero by 2050. This is an incredibly ambitious challenge.
- By 2030 all homes to have received a 'whole house' package, including all cost-effective energy saving measures, plus renewable heat and electricity as appropriate.
- To develop new and effective financial incentive mechanisms, as described above.
- A new focus on district heating in suitable communities and removing barriers to their development.
- Encouraging CHP and the better use of heat through carbon pricing mechanisms.

Figs 6.2 and 6.4 within the consultation document show that biomass is considered financially attractive and worth incentivising at both individual dwelling and community level.

Consultation document:

<http://hes.decc.gov.uk/>

## 2.5 DTI and DEFRA UK Biomass Strategy 2007

Biomass is clearly seen as playing a major role in meeting the EU target of 20% of energy supply coming from renewable sources by 2020. Other renewable sources include eg wind turbines, solar power .

The following clear hierarchy is given for biomass fuel in terms of carbon savings:

- Biomass heating
- Biomass CHP
- Co-fired electricity in large fossil fuel plants (for example where wood fuel is added to coal)
- Dedicated biomass power plants
- Transport biofuels.

Some key aims of the strategy are to:

- Realise major expansion in supply and use of biomass in the UK
- Facilitate the development of competitive and sustainable markets and supply chains
- Contribute to the overall environmental benefits and health of ecosystems through the achievement of multiple benefits from land use.
- Increase the amount of perennial energy crops produced in the UK to meet market demands. The report states that there is the potential to use up to a further 350,000 ha across the UK by 2020, bringing the total land available to 1,000,000 ha, which represents approximately 17% of the total UK arable land.

Strategy:

<http://www.defra.gov.uk/environment/climatechange/uk/energy/renewablefuel/pdf/ukbiomassstrategy-0507.pdf>

## 2.6 Forestry Commission Wood Fuel Strategy for England 2007

Although wood is not the only form of biomass fuel, it is very significant and therefore the Forestry Commission produced this strategy to further elaborate on some of the key goals and issues raised in the UK Biomass strategy as they apply to wood and forestry.

One key goal in the biomass strategy is to increase the wood fuel from unharvested woodlands in England by 2 million wet tonnes (equivalent to 1 million dry tonnes). At present only 40% of the annual increment (additional volume of wood from one year's growth) in England's woodland is harvested and used for any specific purpose, including fuel. Two million wet tonnes represents just 50% of the available unharvested material and should therefore be quite feasible.

The document expands on this topic, looking at the issues that would need to be tackled if this goal is to be achieved. The most obvious hurdle is communicating with 50,000 - 80,000 landowners who collectively manage this resource.

Other wood sources which exist and are recognised within the strategy as being important include:

- Wood waste – some 6-7.5m tonnes currently goes to landfill
- Arboricultural arisings – 68% currently find no market
- New woodland creation.

Strategy:

[http://www.forestry.gov.uk/pdf/fce-woodfuel-strategy.pdf/\\$FILE/fce-woodfuel-strategy.pdf](http://www.forestry.gov.uk/pdf/fce-woodfuel-strategy.pdf/$FILE/fce-woodfuel-strategy.pdf)

## 3 Incentives through planning requirements and guidance

### 3.1 The 'Merton' rule

Developed by the London Borough of Merton in 2003, the Merton rule simply requires developments over 1000m<sup>2</sup> or 10 homes to generate a minimum of 10% of the energy needs using on-site renewable equipment.

It is a simple prescriptive measure, which is arguably overly blunt in its approach. Nevertheless it achieved the goal of raising the profile of renewable energy and was subsequently adopted by the Mayor of London and other UK councils.

Many challenged the legality of this approach and so this has been addressed by government through the Planning and Energy Act 2008, which gives powers to local authorities allowing them to impose reasonable requirements for:

- A proportion of energy used in development in their area to be energy from renewable sources in the locality of the development;
- A proportion of energy used in development in their area to be low carbon energy from sources in the locality of the development;
- Development in their area to comply with energy efficiency standards that exceed the energy requirements of building regulations.

This issue is also picked up in PPS22 (see below).

Policy:

<http://www.merton.gov.uk/living/planning/planningpolicy/mertonrule.htm>

### 3.2 Planning Policy Statement 1 (PPS1) Supplement: Planning and Climate Change

Planning Policy Statements set out the government's national policies for different aspects of land use planning in England. PPS1 sets out the overarching planning policies on the delivery of sustainable development through the planning system.

Published in December 2007, this document provides guidance on how planning can contribute to reducing emissions of carbon dioxide and other green house gases.

Some of the measures of interest that it suggests are:

- Encouraging the use of decentralised renewable / low carbon energy for new developments.

- Setting regional targets for renewable energy generation and ensuring that the ambitions fully reflect the opportunities in the region.
- Encouraging land use and land management practice that help secure carbon sinks eg forestry.
- Being more relaxed when considering planning applications that incorporate renewable energy.
- Encouraging the co-location of potential heat customers with heat suppliers.

Policy:

<http://www.communities.gov.uk/publications/planningandbuilding/ppsclimatechange>

### 3.3 PPS22: Renewable Energy

This policy statement strongly encourages and enables renewable energy through the planning system.

Some of the main relevant points that it makes are:

- Renewable energy development should be capable of being accommodated throughout England in locations where the technology is viable.
- Regional and local planning policies should encourage and promote, rather than restrict, development of renewable energy resources.
- Central government may intervene locally if it considers that local authorities are placing restraints on renewable energy developments which are too great or inadequately justified.
- Regional and local planning bodies should not make assumptions about the technical or commercial feasibility of renewable energy projects.
- Local authorities should foster community involvement in renewable energy projects because of its positive effect in gaining acceptance and interest in energy conservation generally.
- Regional spatial strategies should include renewable energy capacity targets for 2010 and 2020 for the region, derived from assessments of the region's renewable energy resource potential.

Policy:

<http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements/planningpolicystatements/pps22/>

## 4 Incentives through building codes and regulations

### 4.1 Code for Sustainable Homes (CSH)

This code sets out a framework for objectively measuring the overall sustainability credentials for homes, covering a very wide range of issues including natural drying of washing, providing storage space for bicycles and flood prevention measures where necessary.

Each issue addressed correctly attracts points with energy conservation / consumption, (including renewable energy generation), attracting the largest number of points for any single issue.

This design tool is being used in a number of ways, one of which is that meeting certain levels of compliance are a condition for the funding of new social housing. Effectively it is used by the client (the government) for demanding building standards above those of building regulations.

Similar code(s) are planned for non-domestic buildings.

Code details:

<http://www.planningportal.gov.uk/england/professionals/en/1115316369681.html>

TRADA Construction Briefing summarising CSH:

[http://www.trada.co.uk/downloads/constructionBriefings/CSH\\_Sum\\_reqts\\_Jan08\\_V4.pdf](http://www.trada.co.uk/downloads/constructionBriefings/CSH_Sum_reqts_Jan08_V4.pdf)

### 4.2 Building regulations and zero carbon policy

The building regulations set minimum performance standards for a range of issues which are considered essential for all buildings. Many of these are health and welfare related, such as structure, fire protection and drainage.

Energy performance standards are part of this list. For new build a 'whole building' approach is taken, whereby a maximum permissible carbon emission target is set appropriate for the size of building. Precise building regulation guidance on what is required is given in the following documents:

Approved Document Part L England and Wales  
 Section 6 Scotland  
 Technical Booklet N Northern Ireland

Achieving the target requires a combination of good building fabric (eg insulation, air tightness etc) and energy efficient / low carbon heat and energy generation. An increasingly tough trajectory of targets has been set for 2010, 2013 and 2016 – by which time the policy goal

in England is 'net zero carbon' for new build dwellings. 2019 is the target date for 'net zero carbon' non domestic new buildings. What is precisely meant by this term is being hotly debated, but what is certain is that the requirements will be very tough indeed.

As we head towards these tough targets, renewable energy generation will become increasingly in demand.



**Sigma Home by Stewart Milne Group, which achieved Code For Sustainable Homes Level 5.**

## 5 Direct grants: DECC Bioenergy capital grants scheme

Although wood fuel is very cost competitive compared to gas and oil, the up front capital costs for boilers and fuel storage are typically much more expensive.

A range of capital grants, including one for bio energy, has been offered by government to make renewable energy schemes for large users in England commercially attractive.

A maximum of £500,000 was available with no minimum set. The fifth round finished at the end of April 09 with no further rounds planned at the time of writing. The government intends to use Feed In Tariffs (FITs) and the Renewable Heat Incentive (RHI) as the new forthcoming primary financial tool for incentivising capital investment in this area (see section 6 for more detail). A major concern in the renewable energy sector is that it will be very damaging if this successful grants scheme ends one year or more before the new incentive mechanisms come into operation.

For individuals / householders DECC has been offering grants through the Low Carbon Buildings programme. The same concerns over a long transition gap between incentives equally apply to this.

Grant details:

<http://www.bioenergycapitalgrants.org.uk/>



Wood briquettes for use in a biomass boiler.

## 6 Altering the economics of renewable energy

### 6.1 Climate Change Levy (CCL)

One of the first financial tools developed by government was the CCL; an environmental tax levied on the supply of non-renewable energy supplies by energy suppliers to final business customers. The levy is collected by government.

The levy does not apply to domestic consumers. Electricity from renewable energy sources and used in the UK is exempt and 'badged' as such using a Levy Exemption Certificate, (LEC), issued by Ofgem. It has the effect of making renewable energy more valuable. In June 2007 it was worth £4.41 per MWh.

The CCL is separate from and runs in addition to Renewable Obligation Certificates (ROCs) which also involve the use of certificates.

BERR guide to LECs:

<http://www.berr.gov.uk/files/file18183.pdf>

### 6.2 Renewables Obligation and ROCs

The Renewables Obligation is a major financial trading scheme designed to encourage the growth of renewable energy in the UK, which intends to run until 2027.

A Renewable Obligation Certificate (ROC) is a green certificate issued to an accredited generator for eligible renewable electricity generated within the UK and supplied to customers within the UK by a licensed electricity supplier. For many years one ROC was issued for each megawatt hour (MWh) of eligible renewable output generated. This was changed in April 09 using 'banded' ROCs, where some forms of renewable energy will accrue more certificates and some less for each MWh generated.

Suppliers meet their obligations by presenting sufficient ROCs. Where suppliers do not have sufficient ROCs to meet their obligations, they must pay an amount into a fund, the proceeds of which are paid back on a pro-rated basis to those suppliers that have presented ROCs.

The overall effect is again to make renewable energy more valuable. The downside is that it is a fairly unpredictable quasi market, affected by several factors including the obligation levels set and the extent to which renewable energy grows.

The banding of ROCs means that different forms of renewable energy attract different levels of certificate – varying from ¼ certificate per MWh for the least favoured to 2 certificates for the most. CHP using biofuel achieves a double ROCs status, which is the most available to any fuel type.

ROCs are mainly traded by medium and large-scale operators rather than individuals, simply because of the administrative complexity involved.

Ofgem guide to ROCs:

<http://www.ofgem.gov.uk/Sustainability/Environment/RenewablObl/Pages/RenewablObl.aspx>

### 6.3 Renewable Heat Incentives (RHIs)

There isn't a market for heat in the same way that there is for electricity. Most homeowners do not buy heat per se, but instead buy gas or oil and then convert this into heat using domestic boilers. It is not easy therefore to run a ROCs-style scheme for heat.

Government has therefore decided to incentivise renewable heat using a tariff scheme that would apply to all sizes of operation. A payment would be made for every unit of renewable heat produced. The amounts, tiers and front-end weighting (required to help pay off the capital costs quickly) have yet to be decided.

Deeming – applying an estimate of annual production – will be necessary for small items such as domestic hot water units, where the cost of measuring the actual output is not cost justifiable.

The RHI will apply to a range of technologies, including:

- Biomass
- Heat from waste
- Microgeneration eg solar hot water

The current plans are to begin operating RHIs in Summer 2010.

### 6.4 Renewable electricity Feed In Tariffs (FITs)

These have proved extremely successful in rapidly growing the market for renewable energy in countries like Germany. The person or company generating the energy is paid a sum for each unit of renewable energy. It will work in much the same way as RHIs and is planned to be introduced at the same time (summer 2010).

This is yet another emissions trading scheme that is in the process of being finalised by government. It affects

### 6.5 Carbon Reduction Commitment (CRC)

public and private organisations consuming in excess of 6000 MWh per year (excluding transport energy). This equates to an energy bill of approximately £0.5m at the time of writing. The exception is those organisations already required to participate in one of two longer standing schemes: EU Emission Trading Scheme and Climate Change Agreement. These affect the largest energy consumers.

THE CRC scheme works by creating a league table of performance to encourage all organisations to improve their energy efficiency / carbon dioxide emissions. The lowest performing organisations pay money to the best performing ones with no net gain to government.

Measurements will first be made in 2010 with the financial impact being felt from 2011. The intended effect is to force all large energy consumers to invest in renewable energy and improved building fabric in order to prevent paying out a 'fine' and the bad publicity from being at the bottom of the league table.

DEFRA details on scheme:

<http://www.defra.gov.uk/environment/climatechange/uk/business/crc/index.htm>



Ashwell wood chip boiler plant.



## Further help

TRADA members may contact the Members' Helpline for free on t: 01494 569601.

## Other Resources

TRADA Construction Briefing:  
*Wood as a Biomass Fuel: the Main Issues to Consider*  
<http://www.trada.co.uk/downloads/constructionBriefings/CB%20Wood%20fuel%20intro%20V1.pdf>

All other resources are given at the end of each section within the main body of the text.

## TRADA Construction Briefings

This document is part of a series of briefings for TRADA members on the key elements of building regulations and codes and how they relate to timber construction. Copies of all briefings are available at [www.trada.co.uk](http://www.trada.co.uk).

## Feedback

We welcome feedback from readers and if you have any comments on the content of this briefing please contact

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