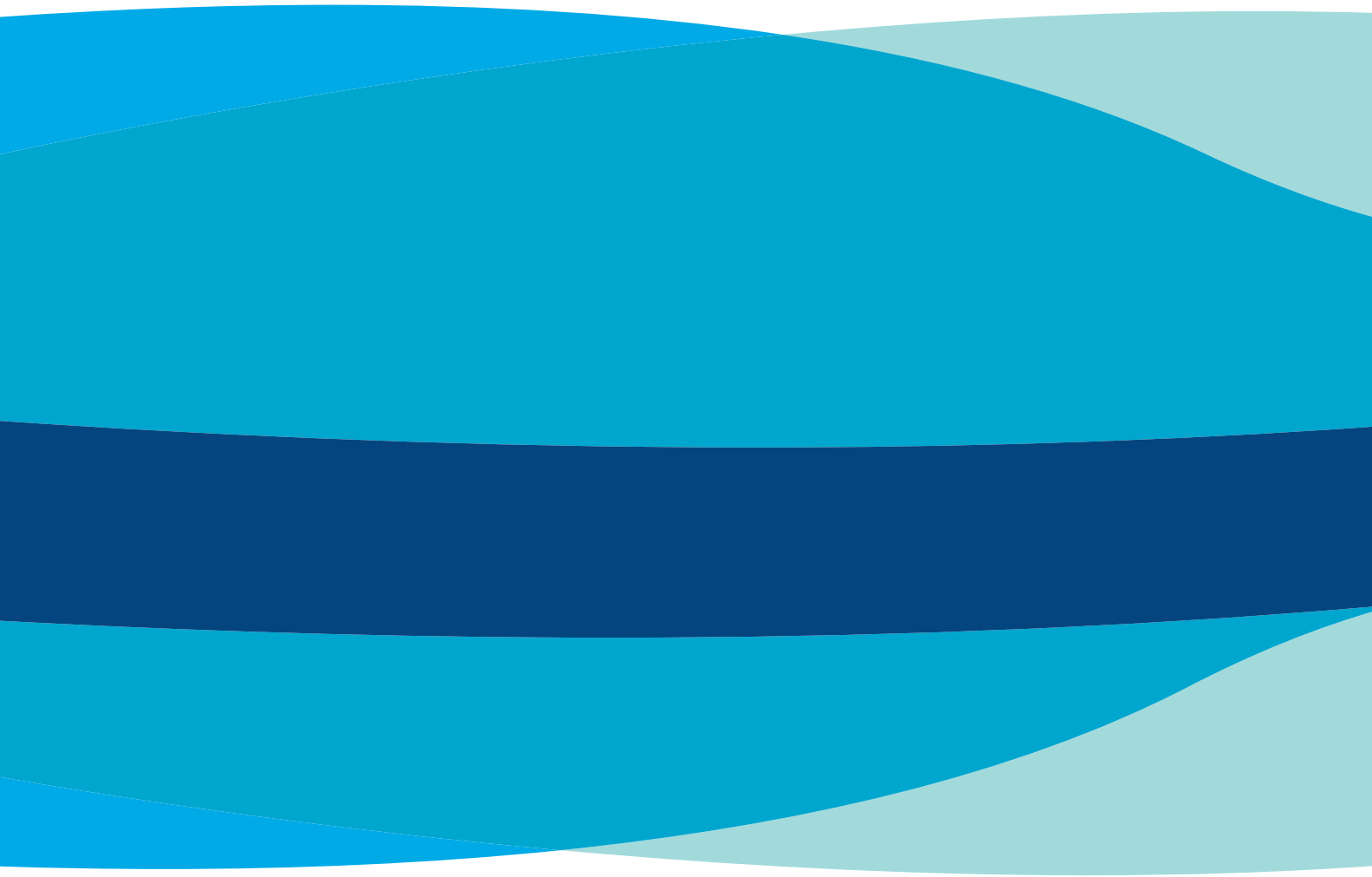
DEPARTMENT OF ENERGY & CLIMATE CHANGE

Consultation on Renewable Electricity Financial Incentives 2009



Building Britain's Future

ACT ON CO2

Foreword by Minister of State

Tackling climate change is the key challenge facing our generation. Maintaining security of energy supply is a closely related imperative. The Department of Energy and Climate Change was set up to integrate and lead the Government's efforts on both fronts.

We need to move to a low, virtually zero carbon electricity system. This will be achieved by a combination of clean coal, nuclear and renewables. Our UK Low Carbon Transition Plan sets out our overall strategy and our Renewable Energy Strategy is our action plan for renewables.

We need to provide the right financial framework to harness the ingenuity and the innovation of individuals, communities and companies to drive renewables and make them tomorrow's mainstream energy choices. Long-term challenges need long-term solutions: we are putting in place policies for the next decade and beyond.

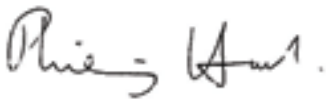
The Renewables Obligation has succeeded in tripling eligible renewable electricity generation, from 1.8% in 2002 to 5.3% in 2008. We now produce more offshore wind power than any other country in the world; approximately 1.3 TWh per annum, enough to power the equivalent of 260,000 homes. This document consults on proposals for making the Renewables Obligation more ambitious, encouraging new investment and making the Renewables Obligation capable of financing nearly a third of our electricity from renewable sources.

Under the lead scenario presented in the Renewable Energy Strategy, around a fifth of our electricity could come from wind power. We recognise that we are facing a difficult time in the economic cycle and investment in the transition to renewables will play an important part in our economic recovery and renewal. We are consulting here, as promised in the 2009 Budget, on a time-limited increase in support to offshore wind, to ensure deployment does not slow and we continue to remain a world leader in this vital technology.

The Renewables Obligation is more focused on larger projects. We also want to encourage smaller projects, generating electricity closer to where it's used: solar panels on people's houses, community wind projects and farm based anaerobic digestion. This needs a simpler system, with more predictable returns. We are therefore also consulting on Feed-in Tariffs to guarantee an income for small scale renewable electricity generators.

Feed-in Tariffs will open up renewable energy generation beyond the traditional energy companies. It will enable communities to come together and invest in generating renewable electricity. It will make it easier for householders and business to finance their own electricity generation. It will help us all play our part in renewing our electricity supply.

Climate change is a threat. Tackling it brings the opportunity of creating a new green economy. These proposals provide the financial framework for ensuring that opportunity is realised.



The Rt Hon Lord Hunt of Kings Heath OBE
Minister of State for the Department of Energy and Climate Change

Contents

Executive Summary

The Renewable Energy Strategy (RES) and the UK Low Carbon Transition Plan sets out the UK's 2020 vision for the switch towards a low-carbon economy and society. By 2020, we want to be firmly on track towards achieving an 80% reduction in carbon emissions by 2050. Renewable energy from wind, water, sun and sustainable biomass will play a crucial part in making this happen.

The effort to increase renewable energy consumption is shared across the EU with the 2009 EU Renewable Energy Directive setting a binding target of achieving 20% of the EU's energy consumption from renewable sources by 2020. The UK's share of the EU target commits us to sourcing 15% of our energy from renewable sources by 2020.

The RES sets out the overarching policy framework for how we will achieve this and identifies a possible scenario of where this renewable energy will come from. It proposes that:

- Over 30% of our electricity may come from renewables compared to 5.5% in 2008. This could be made up from 29% large scale electricity generation and 2% small-scale electricity generation;
- 12% of our heat may come from renewable sources; and
- 10% of road fuel may come from sustainable biofuels.

Everyone has a role to play in making this change happen. We need not only large wind farms developed by energy companies and professional investors, but also small-scale and community-scale renewables.

The Renewables Obligation (RO) will continue with a focus on supporting large-scale renewable electricity projects and we will introduce Feed-In Tariffs (FITs) from April 2010 to provide better support for small-scale renewable electricity.

The Energy Act 2008 established enabling powers for the introduction of FITs to supplement the RO and incentivise small-scale low-carbon electricity generation, up to a maximum limit of 5 megawatts (MW) capacity (50 kilowatts (kW) in the case of fossil-fuelled combined heat and power). It also provides powers to implement a new Renewable Heat Incentive (RHI) aimed at renewable heat installations of all sizes, which we will implement by April 2011.

This consultation focuses on renewable electricity financial incentives. The Department of Energy and Climate Change (DECC) will issue a consultation on support for renewable heat towards the end of 2009. Work will continue in the Severn Tidal Power Feasibility Study on working up a delivery and ownership structure, delivery route and subsidy mechanism for a potential Severn tidal scheme. The Department for Transport (DfT) will consult on support for renewable transport in early 2010.

Renewables Obligation

Structural changes

There are various structural changes needed to enable the Renewables Obligation (RO) to deliver the required level of generation to meet our 2020 targets.

- As announced in the Pre-Budget Report in November 2008, and set out in the RES, we are extending the lifetime of the RO to 2037 in order to provide investors with the confidence to bring forward projects right up to 2020;
- We are introducing a 20-year participation limit for new projects to ensure that they do not continue to receive support for longer than is necessary;
- We are removing the current limitations that exist in the RO that would restrict our ability to meet our targets imposed by the Renewables Energy Directive. Fixed annual obligation levels currently set out in the RO until 2015/16 will remain in place, but we are consulting on the level of headroom;
- The RO will be opened up to renewable generating projects outside the UK that meet specific criteria and we are consulting here on how this might be implemented in practice.

The above changes will be implemented by means of a Renewables Obligation Order (ROO) on 1 April 2010.

We are also seeking views on the introduction of a revenue stabilisation scheme to improve the effectiveness, efficiency and stability of the RO, which would be implemented over the longer term.

Offshore wind

As part of the 2009 Budget, the Government announced a review of the support for offshore wind under the RO. The decision to launch an early review was based on evidence provided to DECC, including a report produced by Ernst & Young on DECC's behalf. The report (published in April 2009) indicated that the costs of offshore wind generation had changed significantly since the levels of support for different technologies were set. This consultation invites comments on the report, as well as additional evidence that we should take into account. We also seek views on both the level of support and the eligibility criteria as currently proposed.

Biomass and sustainability

For biomass generators within the RO we are not currently proposing to change the provisions for sustainability reporting that came into effect on 1 April 2009.

Following feedback since the ROO 2009 came into effect that the area of mixed fuels is still causing confusion, we propose to produce a guidance note to provide more clarity.

Concerns have previously been expressed, particularly in relation to tallow, regarding the sustainability of using, for electricity generation, co-products, by-products or wastes that are also feedstocks for other industries. In response we have commissioned a study in partnership with the Renewable Fuels Agency to develop a methodology for measuring the indirect effects of using such feedstocks. We seek views on our proposal not to limit the use of tallow within the RO until changes to requirements under the Waste Incineration Directive have been implemented.

Following a study carried out by Oxera looking at the effect on the co-firing market and the wider ROC market, we are also consulting on whether we should make any future changes to the co-firing cap.

Feed-in Tariffs

Scheme design

The RO has mostly succeeded in encouraging investment from professional energy companies in large-scale renewables projects. A new system of Feed-in Tariffs (FITs) will provide support aimed at small low-carbon generators. This will open up low-carbon electricity generation beyond the traditional energy companies, making it more cost effective for communities and householders to take part.

The key FIT design aspects proposed are:

- A fixed payment from the electricity supplier for every kilowatt hour (kWh) generated (the "generation tariff");
- A guaranteed minimum payment additional to the generation tariff for every kWh exported to the wider electricity market (the "export tariff");
- Generators receiving FITs will also benefit from on-site use: we propose that where they use the electricity they generate on-site they will be able to offset this against electricity they would otherwise have had to buy;
- We will support the following technologies from 2010; wind; solar PV; hydro; anaerobic digestion; biomass and biomass combined heat and power (CHP) and non-renewable micro CHP; and
- We will aim to design FITs as a simple and user-friendly system in order to maximise take-up. At the same time we will, in the short term, have to rely on some existing procedures under the RO to ensure that the system is ready for implementation by April 2010.

From 1 April 2010 installations under 50kW installed capacity which are eligible for FITs will only get the option of receiving FITs. However we propose that larger installations (with installed capacity of between 50kW to 5MW)[1] will retain the right to choose between the RO or the FITs.

1 The Energy Act 2008 gives the Secretary of State the power to set a maximum capacity up to 5MW. We are consulting on this limit in this paper.

Setting the tariffs

Most investors are looking for investments that provide an adequate rate of return. In order to attract as much uptake as possible under the FITs, we will therefore have to ensure that the FITs provide this across a range of technologies. International experience has shown that for the types of investors at which the FITs are aimed, the level of return can be quite modest, for example between 5-7%.

The tariff levels proposed in this consultation have been calculated to ensure that the total benefits an investor can be expected to achieve (from the generation tariff, the export tariff and/or the offsetting benefit) should compensate the investor for the costs of the installation as well as provide such a rate of return. Returns by technology also reflect the relative ease of deployment of that technology to account for lower risks. We also want to ensure that transition from FITs to the Renewables Obligation i.e. for projects close to the 5MW upper capacity cap for FITs is smooth and projects are not incentivised to downsize to have access to FITs.

In line with international best practice, the proposed tariff levels for new projects will decrease by predetermined rates each year ("degression").

Reviews

Outside of the outlined degression rates, we will periodically review the FITs scheme and will aim to do so in line with the Renewables Obligation reviews. These reviews will take into account developments of other policies, and would adopt the following principles:

- Existing projects will receive the same level of support throughout their participation in FITs; and
- As costs of technologies fall, we expect that levels of support for new projects will reflect that. Project costs will be considered as part of reviews.

Supplier issues

Licensed electricity suppliers will be the key players in the delivery of FITs. We propose that tariffs are paid to generators by suppliers and that all suppliers over a given threshold are required to offer FITs.

The actual FITs payments made by each supplier will be redistributed among all licensed suppliers in a centralised levelisation process to ensure all suppliers bear the right amount of the costs depending on their share of the UK electricity market. We want to ensure that the levelisation process reflects the costs and benefits suppliers receive from FITs generators fairly. We therefore propose that in the levelisation process suppliers will have to reflect the benefit they are receiving from the value of the renewable electricity supplied to them by generators, but they will be allowed to include a per customer overhead charge.

Cross cutting issues

Transitional arrangements

We want to ensure that projects can start building with confidence before FITs and RHI become operational, so it is important to provide certainty and support to the market in the period between the publication date of the RES (15 July 2009) and the start-up dates of the FITs and RHI (the "interim period"). The start dates of the new support schemes are expected to be April 2010 (for the FITs) and April 2011 (for the RHI).

We will do this by continuing to fund existing grant schemes in the interim period, particularly through £45 million of new funds for the Low-carbon Buildings Programme. Small-scale renewable electricity installations will, during the interim period, still be eligible for support under the RO. In particular microgeneration is now entitled to double the previous support level – 2 Renewable Obligation Certificates (ROCs) per MWh.

As announced in the RES we will also allow any eligible installations, built during this interim period, to benefit from FITs and RHI as if they had been installed on the start-up dates of the schemes, although some exceptions will apply where installations first receive ROCs under the RO and then switch to the FITs.

How to Respond

The closing date for responses is 15 October 2009.

E-mail responses are preferred. Please submit replies to: rfi@decc.gsi.gov.uk.
Alternatively, hard copy replies should be sent to:

RFI Team
Renewables Directorate
Department of Energy and Climate Change
4th Floor, Area A/B
3-8 Whitehall Place
London
SW1A 2HH

Additional copies

You may make copies of this document without seeking permission.
Further printed copies of the consultation document can be obtained from:

RFI Team
Renewables Directorate
Department of Energy and Climate Change
4th Floor, Area A/B
3-8 Whitehall Place
London
SW1A 2HH

Telephone: 0300 068 6159

An electronic version can be found at:
http://decc.gov.uk/en/content/cms/consultations/elec_financial/elec_financial.aspx.
Other versions of the document are available on request.

Confidentiality & Data Protection

When this consultation ends, we intend to put a copy of the responses in the Defra library at Ergon House, London. This is so that the public can see them. Also, members of the public may ask for a copy of responses under freedom of information legislation.

If you do not want your response – including your name, contact details and any other personal information – to be publicly available, please say so clearly in writing when you send your response to the consultation. Please note, if your computer automatically includes a confidentiality disclaimer, that won't count as a confidentiality request.

Please explain why you need to keep details confidential. We will take your reasons into account if someone asks for this information under freedom of information legislation. But, because of the law, we cannot promise that we will always be able to keep those details confidential.

We will summarise all responses and place this summary on our website at www.decc.gsi.gov.uk. This summary will include a list of names of organisations that responded but not people's personal names, addresses or other contact details.

Help with queries

Please direct any queries about this consultation to our dedicated e-mail address: rfi@decc.gsi.gov.uk, or in writing to:

RFI Team
Renewables Directorate
Department of Energy and Climate Change
4th Floor, Area A/B
3-8 Whitehall Place
London
SW1A 2HH

Telephone: 0300 068 6159

If you have comments or complaints about the way this consultation has been conducted, these should be sent to:

Marjorie Addo,
Consultation Co-ordinator,
Department of Energy & Climate Change,
Area 7C, Nobel House,
17 Smith Square, London SW1P 3JR

E-mail: consultation.coordinator@decc.gsi.gov.uk

A copy of the Code of practice on Consultations can be found at: www.decc.gov.uk/Media/viewfile.ashx?FilePath=Consultations\1_20090408170031_e_@@_codepracticeconsultation.pdf&filetype=4

Why we are consulting

This consultation is relevant to: Energy consumers and their representatives, energy suppliers, energy generators, network operators, Ofgem, environmental and energy efficiency organisations, energy service companies, installers, the construction sector, finance institutions and other stakeholders with an interest in the renewable energy business.

Renewables Obligation

The Renewables Obligation (RO) is the main current financial support scheme for renewable electricity in the UK.

This consultation sets out in detail how we intend to implement changes to the RO in 2010. It also introduces proposals for some further structural changes that would need primary legislation and would therefore not be implemented before 2011.

The detail of the RO is set out in legislation called the Renewables Obligation Order 2009 (ROO). This is a form of secondary legislation known as a Statutory Instrument. It can only be amended if it is first subject to a consultation and then debated and approved by both Houses of Parliament.

We will publish a draft amending ROO 2010 in mid September during the consultation period and ahead of a number of events designed to engage with stakeholders. Stakeholders will have an opportunity to provide detailed feedback on the draft legislation during the consultation period, at and after these events. Further information on these events will be published on our website nearer the time.

The changes to the RO will be contingent on obtaining State Aid approval from the European Commission and parliamentary approval.

Feed-in Tariffs

The 2008 Energy Act contains powers for the introduction of Feed-in Tariffs (FITs) in Great Britain for renewable electricity installations up to a maximum capacity of 5MW[2]. We intend to implement FITs by April 2010 as a financial support scheme for renewable electricity aimed at small-scale installations.

This consultation document sets out how we intend the FITs scheme to work, including the proposed tariff levels. These proposals have been developed with input from our stakeholders – energy industry trade associations, energy suppliers, Ofgem and NGOs – and this consultation constitutes a more formal opportunity for all interested parties to have their say on the details of the FITs mechanism.

Significant changes to the electricity market will be necessary to implement the FITs scheme. The Energy Act 2008 requires us to consult with stakeholders who will be affected, such as the distribution and supply companies and Ofgem. The FITs mechanism will be introduced through changes to electricity distribution and supply licences.

As with the changes to the RO, these proposals are contingent on obtaining State Aid and parliamentary approval.

2 The upper limit is to be set by Order (see Section 41(4) of the Energy Act 2008). We are consulting on this limit in this document.

Section 1:

Scene Setting

The Renewables Vision

1.1 The UK Renewable Energy Strategy (RES)[3] and the UK Low Carbon Transition Plan (published alongside this document)[4] set out the UK's 2020 vision for the switch towards a low-carbon economy and society. By 2020, we want to be firmly on track towards achieving an 80% reduction in carbon emissions by 2050. Renewable energy from wind, water, sun and sustainable biomass will play a crucial part in making this happen.

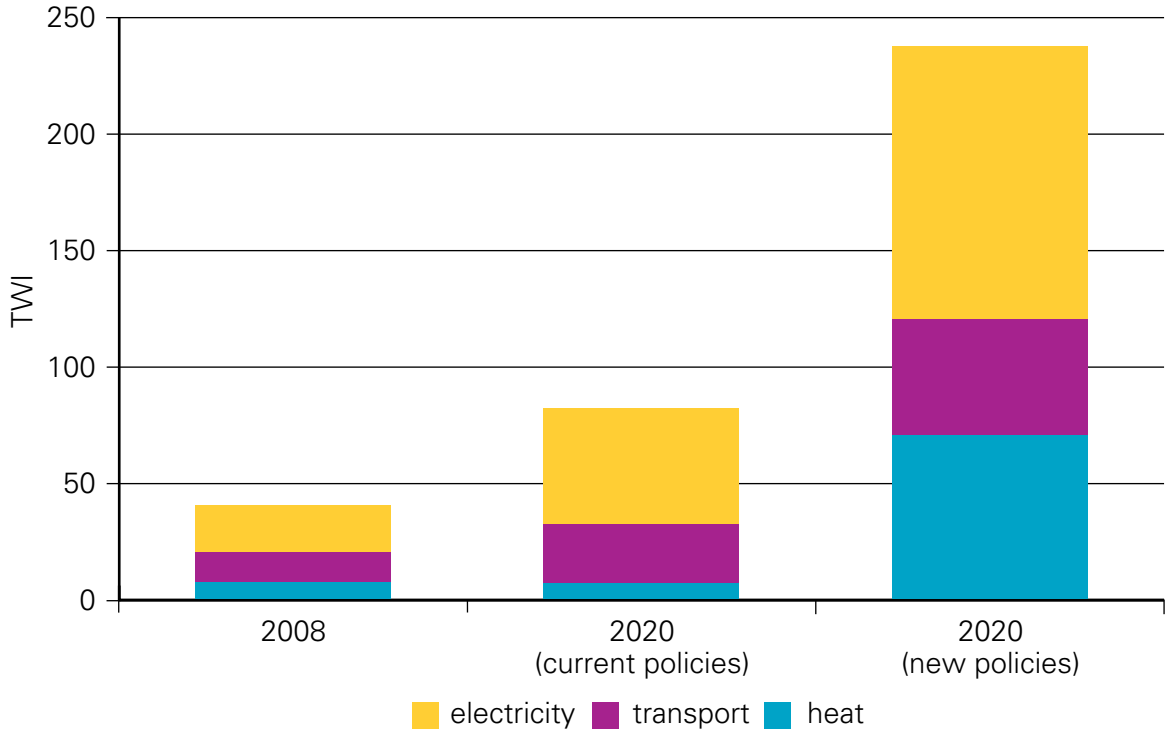
1.2 The effort to increase renewable energy consumption is shared across the EU. The 2009 EU Renewable Energy Directive has set a binding target of achieving 20% of the EU's energy consumption from renewable sources by 2020. Our share of the EU Target commits the UK to sourcing 15% of our energy from renewable sources by 2020, an eight-fold increase in a decade. The Renewable Energy Strategy sets out the overarching policy framework for how we will achieve this and suggests a lead scenario of where this renewable energy will come from. It suggests that:

- Over 30% of our electricity may come from renewables compared to 5% today. This could be made up from large scale electricity generation (29%) and small-scale electricity generation (2%);
- 12% of our heat may come from renewable sources compared to 0.6% today; and
- 10% of road fuel may come from sustainable biofuels.

3 www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/res/res.aspx

4 www.decc.gov.uk/en/content/cms/publications/ic_trans_plan.aspx

Chart 1.1:
The Size of the Challenge



Source: Energy Trends June 2009 and DECC internal analysis.

1.3 If we are to meet this challenging target all parts of society will need to play their part in driving up renewables deployment in the UK. We need not only large wind farms developed by energy companies and professional investors, but also small-scale and community-scale renewables: From a local wind farm to a biomass-powered district heating network; solar panels or a heat pump in the house; or small-scale wind to power a supermarket or school.

The Renewables Financial Incentives Framework

1.4 Generating energy from renewable energy technologies is more costly than from long-established fossil-fuelled technologies. The Stern Review emphasised that carbon pricing alone will not be sufficient to reduce emissions at the scale and pace required and more support is needed for renewable and innovative low-carbon technologies. To ensure that we provide the financial support needed we will extend our incentives framework as follows:

- The existing Renewables Obligation (RO) will remain in place with a focus on supporting large-scale renewable electricity projects;
- We will implement new Feed-In Tariffs (FITs) from April 2010 to provide a better focus of support for small-scale low-carbon electricity;

- We expect to have a new Renewable Heat Incentive (RHI) in place by April 2011 for renewable heat installations of all sizes;
- We will review our support for renewable transport to determine whether we need to amend or replace our current renewable transport incentive, the Renewable Transport Fuel Obligation (RTFO).

1.5 This consultation discusses changes to the RO and the implementation of the new FITs. It does not cover renewable heat, potential subsidy mechanisms for a Severn Tidal Power (STP) Scheme or renewable transport. We intend to consult on the RHI later this year, STP schemes will be covered by a consultation in 2010 and the Department for Transport will consult on the RTFO at the beginning of 2010.

Renewables Obligation

1.6 The Renewables Obligation (RO) is the Government's main mechanism for incentivising renewable electricity generation in the UK. It also forms an important part of our programme for securing reductions in carbon dioxide emissions, working in support of other policy measures such as the EU Emissions Trading Scheme (ETS). Introduction of the RO in 2002 has enabled a trebling in RO eligible renewable generation, from 1.8% to 5.3% in 2008, and development of offshore wind to a point that we have now overtaken Denmark as global leaders.

1.7 The RO has been subject to a number of changes since its introduction, aimed at improving its efficiency and effectiveness. The most recent reforms to the RO were implemented on 1 April 2009. The key feature of these reforms was the introduction of banding; whereby different technologies receive different numbers of ROCs, rather than the previous system where all technologies were treated equally, receiving 1 ROC/1MWh generated. This has reduced the level of support given to new developments in the more established technologies such as landfill gas (to 0.25 ROCs/MWh) while increasing the support available to both the next wave of technologies such as dedicated biomass plants (to 1.5 ROCs/MWh) and those further from the market such as wave and tidal stream (to 2 ROCs/MWh).

1.8 The Renewable Energy Strategy consultation last summer proposed to expand and extend the RO to drive the higher deployment levels of large-scale centralised electricity generation needed to deliver our 2020 target. In the Pre-Budget Report we confirmed that we would retain the RO as our support scheme for large-scale renewable electricity generation and that we would extend it until at least 2037. In the Budget we announced that we are reviewing the level of support for offshore wind under the RO.

1.9 This consultation sets out the detailed points on how we will implement changes to the RO in 2010. It also introduces proposals for some further structural changes that would need primary legislation and would therefore not be implemented until later.

1.10 While we refer in this document to 'the Renewables Obligation', in practice the system works on the basis of three complementary obligations, one covering England and Wales, and one each for Scotland and Northern Ireland. This consultation covers changes to the RO for England and Wales. Decisions regarding the details of the Obligations in Scotland and Northern Ireland are for the Scottish Government and the Northern Ireland Executive respectively. Each will carry out further consultation with stakeholders before determining its own policy. However, the Government and the Devolved Administrations understand the benefits of a consistent approach across the UK and are working together to deliver this where possible.

1.11 The RO is set out in legislation called the Renewables Obligation Order (ROO). This is a form of secondary legislation known as a Statutory Instrument. It sets out the detail of the RO and can only be amended if it is first subject to a consultation and then debated and approved by both Houses of Parliament.

1.12 We will publish a draft ROO 2010 in mid-September during the consultation period and ahead of a number of events designed to engage with stakeholders. Stakeholders will have an opportunity to provide detailed feedback on the draft legislation during the consultation period, at and after these events. Further information on these events will be published on our website nearer the time.

1.13 These changes to the RO will be contingent on obtaining State Aid approval from the European Commission and parliamentary approval.

Feed-in Tariffs

1.14 The Energy Act 2008 (Sections 41-43) provided broad enabling powers for the introduction of feed-in tariffs (FITs) for small-scale low-carbon electricity generation, up to a maximum limit of 5 megawatt (MW) capacity (50 kilowatt (kW) in the case of fossil fuelled CHP). The Government committed to developing FITs in order to drive greater deployment of renewable and low-carbon generation technologies at the small scale and have a system in place by April 2010.

1.15 We envisage FITs being taken up by non-energy professionals who are not comfortable dealing with the RO and trading in the energy market. This includes individuals wanting to install generating technologies at home; communities; public sector organisations; and small/medium sized enterprises (SMEs). We are therefore proposing a simple system which will be understood and will engage people. It also needs to be designed in order to be implemented by April 2010.

1.16 This document sets out the proposed design of the FITs. Our proposals have been shaped by responses to Annex 2 of the Renewable Energy Consultation published in June 2008[5], discussions in Parliament during the passage of the Energy Bill (now the Energy Act 2008), informal consultation with stakeholders

5 www.decc.gov.uk/en/content/cms/consultations/cons_res/cons_res.aspx

and work commissioned from Element Energy and Pöyry Energy Consulting. We are also grateful for the work of other organisations such as the Renewable Energy Association and Micropower Council in helping to inform this consultation.

Renewable Heat Incentive (RHI)

1.17 We need to develop new ways of generating renewable energy in all sectors, including heat, to meet our 2020 15 % renewable energy target. Currently heat generated from renewable sources accounts for only 0.6 % of total demand. Estimations in the RES suggest that this may need to rise to around 12% by 2020.

1.18 We will not be able to expand renewable heat without some form of financial assistance because other forms of heat are currently cheaper. Such assistance will allow more people to afford renewable heat and, by expanding the market, help bring costs down more quickly.

1.19 The Energy Act 2008 (Section 100) allows for the setting up of a Renewable Heat Incentive (RHI), which would provide financial assistance to generators of renewable heat and to some producers of renewable heat, such as producers of biomethane.

1.20 Our aim is to make the RHI as simple, accessible and user-friendly as possible to encourage potential investors in renewable heat at all scales, from industrial to domestic. We expect that different levels of support will be provided to different types of technology and at different scales.

1.21 The incentive payments will be funded by a levy on suppliers of fossil fuels for heat. These include gas suppliers and suppliers of coal, heating oil and liquefied petroleum gas (LPG).

1.22 This is a novel idea and the UK is leading development of this type of incentive. As such there are no other international experiences or best practice to draw on and details of the scheme have not yet been finalised. However, the following will be key features:

- The RHI will apply to generation of renewable heat at all scales, whether it is in households, communities or at industrial scale.
- The RHI will cover a wide range of technologies including biomass, solar hot water, air and ground source heat pumps, biomass CHP, biogas produced from anaerobic digestion and injection of biomethane into the gas grid.
- The RHI will be available across Great Britain. (Northern Ireland will need to develop their own legislation.)
- The RHI will be banded so different rates of support may apply to different technologies or scales i.e. some (e.g. larger scale biomass heat) may require less support per MWh than others.

1.23 Following research published for the Renewable Energy Strategy consultation last year on the prospects for renewable heat in the UK, we commissioned further research by NERA and AEA on the UK supply curve for renewable heat. The purpose of the analysis was to validate and expand existing analysis on the potential deployment for renewable heat technologies leading up to 2020 and to look into the potential contribution of the industrial and commercial/public sectors. The data resulting from this study is expected to play a key role in helping us design the structure of the RHI going forward. The report has now been published and is available here: www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/policy/renewable_heat/incentive/supply_curve/supply_curve.aspx

1.24 We are currently working to develop the main features of the RHI scheme, which we hope to consult on towards the end of the year. We expect to have the RHI in place by April 2011.

Section 2:

Renewables Obligation

Structural changes

Summary

In order to ensure that the RO stimulates deployment of new renewable generation to the extent needed to meet our 2020 target for renewable energy, we plan to make certain changes to the RO by means of the next RO Order which will come into effect on 1 April 2010. In summary, these are:

- Extension of the lifetime of the RO to 2037;
- Introduction of a 20-year limit on support under the RO;
- Removal of the 20 ROC/100MWh renewable electricity limit in the RO; and
- Retention of the existing fixed targets until 2015/16, with headroom-only to determine the total obligation after that date;
- An increase in the level of headroom from 8% to 10%; and
- Opening up the RO to include renewable generation outside the UK that meets specific criteria to help meet our EU target in the most cost-effective way.

We are also consulting on whether to introduce, at a later date, a mechanism to reduce or remove the risk of fluctuations in the wholesale price of power (and possibly the ROC price).

Introduction

2.1 The past few years have seen a discussion as to the best financial incentive scheme to be used in the UK to support the roll-out of renewable electricity. At the heart of this debate has been the tension between renewable certificate schemes such as the RO and feed-in tariffs (such as those we are now introducing for small-scale generation). We considered this debate in our Renewable Energy Strategy consultation in 2008 and concluded that for large-scale renewable electricity support a switch to feed-in tariffs would not be desirable. Most consultation respondents agreed and we consequently announced in late 2008 that we would retain the RO and extend it.

2.2 In the 2008 Renewable Energy Strategy consultation we discussed a number of principles that allow renewable financial incentives schemes to function as effectively and efficiently as possible. Our objective in considering these has been to take the best aspects of both certificate systems and feed-in tariff systems and incorporate them into the RO. For example:

- *Banding*. Providing different levels of support to different technologies has, in the past, been considered a typical advantage of feed-in tariffs. We have introduced this to the RO in the form of banding (from April 2009), which now allows the RO to provide different levels of support to different technologies. This allows a range of technologies to come forward at the same time and play their part in achieving the 2020 target.
- *Stable revenue.* As the Renewable Energy Strategy (RES) points out, long-term stable overall revenue levels for renewable generators can help increase the effectiveness and efficiency of a support scheme by reducing risk. We have introduced headroom[6] to the RO (from April 2009) with the intention of stabilising the ROC price by ensuring that the obligation level is always above the actual volume of renewable generation.
- *Premium subsidy.* The traditional advantage of certificate systems such as the RO has been that they encourage generators to respond to market signals. The RO has maintained this incentive by providing support as a premium subsidy on top of the revenue generators receive from selling their electricity in the wholesale market.

2.3 However, we recognise that a number of further changes to the RO will be necessary to allow it to deliver a much higher 2020 target; in other words, to improve its effectiveness. We need to extend the time period for which the RO will remain in place. We need to remove or replace the current limit on the proportion of our electricity which can be sourced from renewables. We need to increase the size of the targets set by the RO, whether by retaining and extending the notion of a series of fixed annual targets or by relying exclusively on the concept of headroom. We need to look at increasing the level of headroom to help protect against a ROC price crash.

2.4 We also recognise that there are respects in which the RO could be made more efficient, in the sense of delivering better value for money to the consumer. We are therefore considering making further improvements to revenue stability for renewable generators by introducing a mechanism aimed at reducing or removing price volatility from the portion of the revenue that renewable generators receive from the electricity wholesale market. We would do this by transferring the risk of price fluctuations from generators to suppliers who are, in many cases, better placed to carry that risk. We are aware that a new mechanism of this kind would need to be introduced carefully so as to minimise uncertainty in the market and we have devised an implementation programme which seeks to achieve this.

2.5 If introduced, such a revenue stabilisation mechanism could also be used to reduce further the risk of fluctuations in ROC prices. This could involve

6 The concept of headroom works by creating a positive gap of a predetermined size between the RO target and the predicted quantity of renewable generation. This has the effect of pushing up the ROC price. The bigger the gap, the higher the upward pressure on the ROC price.

introducing a "floor price" which would act as a safety net under the price of ROCs, giving investors additional certainty on revenues. If we did this, it would allow us to revisit the level of headroom.

2.6 Finally, we are proposing to allow some proportion of our 2020 renewable energy target to be met by allowing generation located outside the UK to count towards the RO.

2.7 We envisage the resulting RO as a financial incentive scheme which:

- Incorporates best practice from different types of support schemes – regardless of whether they are referred to as feed-in tariffs or certificate systems;
- Targets support appropriately at a range of technologies to ensure efficient delivery of high levels of renewables;
- Maintains the benefits of exposing generators to pressure to sell their electricity at the best possible price; and
- May remove or reduce the risk of revenue fluctuations which do not provide a useful incentive to generators (in particular longer-term fluctuations in fossil fuel prices and ROC prices).

Extension of the RO

Extension of the life-time of the RO to 2037

2.8 The RO is currently designed to provide support to eligible renewable electricity until 2027. We consulted on extending the RO in the 2008 Renewable Energy Strategy consultation. Responses were largely in favour and in last November's Pre-Budget Report we announced our decision to extend the lifetime of the RO to at least 2037. Most renewable electricity projects are long term, with project lives and financing structured over 15-20 years. Extending the RO to 2037 will give long term certainty to investors that the support will be there to continue building new projects at least until 2020. At this stage, we do not believe that there is a need to extend the RO beyond 2037.

Q1. Do you agree that, at this point, no extension beyond 2037 is required?

Introduction of a 20-year limit on support under the RO

2.9 We consulted in the 2008 Renewable Energy Strategy consultation on introducing time-limited support under the RO of 20 years for new projects. Our decision to do so is discussed in the Renewable Energy Strategy. We are satisfied that 20-year eligibility for projects balances the need to provide investors with long-term certainty with the need to keep costs to consumers to a minimum. It would not be cost-effective to allow all projects to claim ROCs for the full life-time of the RO

once extended to 2037. For example, a qualifying generating station built in 2010 should not need to continue to receive ROCs until 2037 as all capital costs should have been recovered well before this.

2.10 We intend to use 26 June 2008 (the date of the RES consultation when we first announced this possible change) as the cut-off point. We propose to introduce this as follows:

- The **existing regime** will apply to projects which were accredited under the RO before 26 June 2008. These projects will continue to be eligible under the RO until 2027, the date on which the RO currently ceases to apply, and will be retired from the scheme on the project end date or 31 March 2027, whichever is the earlier.
- The **new regime** will apply to projects receiving accreditation on or after 26 June 2008. These projects will receive support under the RO for a fixed period of 20 years, but subject to the new RO end date of 2037. They will be retired from RO support after 20 years or 31 March 2037 (the new end date of the RO), whichever is the earlier.

2.11 Time limited support raises a number of issues around how we deal with certain changes to a generating station. For example how we should treat additional capacity that is added to an existing project or plant that is refurbished or replaced before the end of the eligibility period. When we introduced banding into the RO we decided that where generating stations which were accredited by 11 July 2006 later added additional capacity, this capacity should generally be eligible for the same number of ROCs per MWh as would be the case for stations accredited after the 2009 Order came into force (with exceptions for landfill and sewage gas). We could apply the same approach to the 20-year limit (so that additional capacity would be entitled to the full 20 years of support regardless of when the original capacity started receiving support). If we do this we would need to identify the point at which the 20 years would start running from. In article 30 and 31 of the 2009 Order we have referred to "capacity which has been added to the station" since a particular date. Alternative approaches include the date at which that additional capacity is accredited by Ofgem, or the date that the additional capacity is commissioned.

Q2. Do you agree that the criterion for treating projects under either the old 2027 end date or the new 2037 end date should be accreditation before or after 26 June 2008? If not, what should the criterion be and why?

Q3. Do you agree that additional capacity or plant that is refurbished or replaced should be entitled to the full 20 years of support, regardless of when the original capacity started to receive support?

Removal of the 20 ROC/100MWh limit on the RO

2.12 Under the current RO, the level of the obligation cannot rise beyond 20 ROCs/100MWh, reflecting our original aspiration of achieving 20% renewable electricity. This limit would restrict our ability to reach the new higher 2020 targets imposed by the Renewable Energy Directive. Following the 2008 Renewable Energy Strategy consultation, we decided in the Renewable Energy Strategy to remove the current limit on the maximum level of the RO with effect from 1 April 2010.

2.13 Although we expect that the RO could deliver around 29% of total electricity by 2020, we do not believe it would be beneficial to replace the current 20 ROC/100MWh limit by a new limit set by reference to this. Developments on the ground will determine the precise delivery levels of renewable heat, electricity and transport. We do not want a new limit to impose unnecessary restrictions on the market.

Headroom retained in parallel with existing targets

2.14 In last year's RES consultation, we invited views on how best to ensure that the level of the obligation set by the RO would deliver the requisite proportion of renewable electricity generation by 2020. The options were: to leave the current structure of annual fixed targets to 2015/16 with headroom only thereafter; to replace the existing fixed targets and rely on headroom only throughout or to replace the existing fixed targets with a new series of fixed targets extending to 2020.

2.15 The original intention behind fixed targets was to provide a clear trajectory towards our 2020 target that would create a scarcity signal if deployment fell behind. This scarcity signal was intended to drive up the ROC price and accelerate investment. However, in practice, there is little evidence that this has been effective. Deployment to date has been hampered by other constraints such as grid connection and planning. The signs are that ROC price spikes are too short term to influence investment decisions. Where such constraints exist, fixed targets tend to lead to high ROC prices, which drive up excessive profits to generators and increase costs to consumers whilst not necessarily increasing deployment.

2.16 However, at the same time, we are aware that investors have relied upon the current system of fixed targets extending to 2015/16 when making decisions.

2.17 The RES therefore sets out our decision to retain the current structure with fixed targets in place to 2015/16, then move to headroom only to determine the RO obligation level thereafter. In practice, we expect that renewable generation deployment will catch up with fixed targets before 2015/16 and that headroom will begin to determine RO obligation level around 2013.

An increase in the level of headroom to 10%

2.18 The headroom mechanism is intended to help stabilise the price of ROCs by ensuring that there is always a positive gap between demand for ROCs (as expressed in the obligation level set by the RO) and supply (as determined by

actual renewable electricity generation levels) and that that gap is kept at as steady a level as possible. As the price of ROCs is driven by the balance of this supply and demand, the headroom mechanism should therefore mean that the ROC price does not fluctuate too far in either direction.

2.19 However, the headroom mechanism involves predicting, on an annual basis, the likely total volume of generation and the likely proportion of that volume which will be derived from renewable sources, taking into account the new technology bands. As with all predictions, there is a chance that they could prove to be inaccurate. Analysis carried out for us by Redpoint[7], estimates that, based on the RO bands set out in the Renewables Obligation Order 2009 (ROO 2009), at the current headroom level of 8%, there is about a one in ten chance every year that the number of ROCs issued will exceed demand, triggering a ROC price crash. For investors thinking in 20-year terms, this is a significant risk. Furthermore, every time that a particular technology is "banded up" (i.e. moved to a more generous rate of ROC allocation per MWh), the effect of any underestimate becomes magnified. For example, the higher the number of ROCs awarded to offshore wind, the greater the impact of wind variability upon the accuracy of annual predictions of renewable generation.

2.20 Redpoint's findings support our own recent research and industry feedback, particularly since the announcement of the proposal to give 2 ROC/MWh to certain offshore wind projects. These all suggest that a headroom level of 8% is too low to give investors confidence that it will be effective in protecting against a price crash.

2.21 Increasing headroom to 10% would reduce this risk. We therefore intend to include in the ROO Order 2010 a mechanism to increase the level of headroom through a series of incremental adjustments so as to reach 10% by 2014.

2.22 The first incremental rise to 8.5% would apply to the 2011/12 Obligation period.[8] The proposed trajectory of increases in headroom is set out below:

Obligation period	Headroom level
2010/11	8%
2011/12	8.5%
2012/13	9%
2013/14	9.5%
2014/15	10%

7 Redpoint Energy Limited, *Implementation of the EU 2020 Renewables target in the UK Electricity Sector: RO Reform*, June 2009, published at www.decc.gov.uk

8 The Secretary of State is required to set the level of the headroom for the 2010/11 period before 1 October 2009 and the earliest an increase could be implemented would be in the 2010 RO Order. Hence, the first opportunity to apply the increase in headroom will be in October 2010, when the Obligation size is set for the 2011/12 period.

2.23 Supporting the ROC price through some form of stabilisation mechanism would have a similar effect of reducing the risk of a price crash. Should we decide to introduce a price stabilisation mechanism for the ROC price, we will revisit the issue of the appropriate headroom level and make further changes then if necessary.

Q4. Do you agree with the proposal to increase headroom to 10% by 2014?

Q5. Do you agree that the proposed series of 0.5% annual increases in headroom over the time period set out is the best approach to implementing any increase?

Wholesale price revenue stabilisation

Wholesale price volatility: why it matters

2.24 In the past, the RO has been criticised for allowing excess profits in certain circumstances. Renewable generators receive revenue both from the RO and from selling their electricity in the wholesale market. Generators are exposed to both the risk and rewards of volatility in wholesale electricity prices. When electricity prices are high (such as in mid 2008), this means more revenue for generators. Where there are excess profits for generators, the cost of the RO scheme to consumers is higher than it needs to be. Maintaining an unchanged level of RO revenue in this situation may therefore not be best value for money for consumers.

2.25 On the other hand, when wholesale prices are low, both new and existing projects may no longer be commercially attractive. Exposure to fluctuations in the wholesale price of power result in revenue uncertainty. Our analysis suggests that this could be hampering the willingness of investors to invest and lenders to lend or leading lenders to charge a higher cost for financing projects. The current difficulties in the bank lending market have exacerbated the problem.

2.26 These are particular concerns in the context of renewable electricity. We have a legally binding target for renewable energy which we must reach by 2020. Renewable electricity will play a significant part in reaching that target. However, renewable generation technologies are currently more expensive than competing technologies such as fossil fuel; the RO is intended to bridge this gap. We believe that any mechanism which could help lower the cost of the RO to consumers while potentially helping towards achievement of our target should be looked at.

2.27 We have considered various mechanisms aimed at reducing or overcoming the effects of wholesale price volatility upon generators. These work on the basis of smoothing out the element of wholesale power price which generators receive. In other words: if wholesale prices go up, the mechanism reduces the subsidy

from the RO. It they fall, generators are subsidised to ensure their overall revenues remain stable. This consultation asks for views to help us decide whether to introduce a revenue stabilisation mechanism and if so, how we should address some of the implementation challenges. If we decide to go ahead, we will consult again at a later stage on the design details of the scheme.

The role of PPAs

2.28 Many generators which have entered into long term power purchase agreements (PPAs) with suppliers will have negotiated a floor price in the pricing provisions of the PPA. A floor price works by ensuring that the generator receives a preset minimum price even if the market price falls below that level. Generally, a floor price will apply to the wholesale power price element of the payments made by the supplier to the generator and so will give the generator some protection against falling wholesale prices.

2.29 The terms of PPAs are generally commercially confidential. However, we have obtained anecdotal evidence from generators, suppliers and renewables advisors that there are a wide variety of PPAs negotiated for varying durations, including some with or without floor prices for ROC and power prices. Some of these terms seem similar to the attributes of a stabilisation mechanism.

2.30 We do not, however, believe that PPA floor prices achieve the same effect as a stabilisation mechanism would in minimising the risk of wholesale power price volatility and improving value for money for consumers. This is because:

- A floor price reduces downside risk only. It does nothing to avoid excessive generator profits when prices are high and caps appear to be rare in the PPA market.
- Generators "pay" suppliers for PPA floor prices in the form of varying discounts on the revenue streams and occasionally with caps on revenues. Especially in recent years, as suppliers have become more reluctant to agree to floor prices, the quid pro quo for a floor price has often been a significant percentage discount from the overall power price paid by the supplier, making the protection afforded by the floor price expensive for generators.
- Floor prices usually, but do not always, cover wholesale price risk. Sometimes they cover only the ROC price element of the price paid and in that case, would do nothing to mitigate wholesale price risk.

Likely effect of revenue stabilisation

2.31 Analysis carried out for us by Redpoint suggests that a wholesale price stabilisation mechanism should bring benefits, in terms of the efficiency of the RO but also in terms of its effectiveness. The benefits identified are:

2.32 **Reduction in excessive generator profits with a potential reduction in consumer bills:** A revenue stabilisation scheme could reduce the cost of the RO and could impact on the amount end consumers must pay for electricity. For example if 2022 is a year of very high wholesale prices (say, rising from about £65 to about £112/MWh), a revenue stabilisation measure might reduce the cost of the RO by £10/MWh and potentially save consumers this amount. Our initial analysis on bills suggests that this represents a saving of about 2.5% on the total bill of an average domestic consumer in that year. This analysis does depend on suppliers passing the reduction in cost to consumers; to the extent that they choose to retain that reduction, consumers will not feel the benefit. Secondly, it does not take into account the costs of implementing such a scheme (see Implementation Challenges, below).

2.33 **Faster build rates for renewables:** Both equity sponsors and lenders attach a cost to risk. The riskier the project, the higher the returns required before the project will be viable. The view of lenders to pricing risk has become more conservative since the onset of the credit crunch. Removing or reducing wholesale price risk would reduce overall revenue volatility; this in turn should lower required rates of return and so widen the range of renewable generation projects which the market judges to be economically viable.

2.34 In deciding whether and on what terms to lend, banks make assumptions as to what wholesale power prices will do during the term of the loan. Those assumptions are usually conservative. If the effect of a wholesale price stabilisation mechanism were to stabilise the price at a level above lender assumptions, the deemed ability of a project to repay would be increased. The effect would be to improve the debt sizing capacity of new projects, allowing them to borrow more and on better terms, so enhancing project returns.

2.35 According to Redpoint's modelling of investment decisions, these factors would lead to increased renewable generation deployment rates for any given banding regime under the RO. For example, the analysis shows that a stabilisation mechanism could result in about 1.8 percentage points (2.5GW) more renewable generation as a proportion of total generation by 2020, if wholesale prices move as we expect them to in the Renewable Energy Strategy lead scenario.

2.36 The effect would be greater if wholesale prices fall below expectations. In this case, revenue stabilisation would maintain revenues at the level needed to allow new projects to come forward, despite falling prices. The analysis suggests that, if the wholesale price to 2020 were to average around £35/MWh, revenue stabilisation might deliver around 4.8 percentage points more deployment than an RO without revenue stabilisation – about 27.2% renewable electricity by 2020 against about 22.4% renewable electricity without revenue stabilisation.

2.37 **Encouraging competition**: Managing the risks around a volatile wholesale price is a core source of competitive advantage for large integrated suppliers. Large

independent generators (those with portfolios of several hundred MW) may also find it worth their while to take on this function. Small players and new entrants may, however, not be well placed to manage this risk themselves. Introducing a means of stabilising wholesale price revenues outside a PPA would free them from the need to negotiate floor prices with suppliers, potentially at the cost of a larger supplier discount. This could reduce the threshold for such investors to enter the renewables market.

Q6. Do you agree a wholesale price stabilisation mechanism would bring benefits to renewable generators by providing a predictable and adequate level of compensation?

Q7. Do you believe that these benefits can be realised in practice? In particular, during periods of high fossil fuel prices, would suppliers pass the benefits on to consumers?

Q8. Do you agree that a revenue stabilisation mechanism could help us meet our target by encouraging more deployment?

Implementation challenges

2.38 **Selecting a wholesale price index:** The revenue stabilisation mechanisms described here would require us to set one or more reference prices. In order to determine what is payable to or by generators, the reference price needs to be compared to an index of actual prices.

2.39 As regards the wholesale price of power, this presents difficulties because there is currently no single index which is universally used. Actual prices in bilateral PPAs will vary, sometimes significantly, from any index or overall wholesale price.

2.40 Any index or combination of indices used could consist of ex-ante prices (where stabilisation takes place against an index of future prices) or ex-post prices (where historic prices – for instance for the past quarter or year – as shown in a particular index are used as the basis for stabilisation).

2.41 An ex-ante approach could be based around a forward index which could be averaged across the year, enabling the indexed parameters to be fixed in advance of each year, so providing a level of certainty. For a generator to minimise exposure in these circumstances, forward hedging would be required with a pattern to match the averaging used in the index, as outturn prices can differ markedly from those at the year-ahead stage. In this case, the degree of revenue stabilisation would be limited by volume uncertainty depending on how accurately actual generation could be forecast when the index was fixed.

2.42 Using an index of actual historic prices has the advantage that it can employ an accurate annual time-averaged price derived from day-ahead (or within-day) half-

hourly spot prices. However, the indexed parameters will not be fixed until the year end, leaving a degree of revenue uncertainty. Currently no index of historic prices reflects a sufficiently significant percentage of actual sales to give a fair representation of overall market prices. In order to minimise residual risk, renewable generators would be incentivised to sell into the day-ahead markets. This could significantly increase liquidity in those markets but may reduce the incentive to hedge forward.

2.43 It would be possible to adopt a combination of ex-ante and ex-post indices. Such an approach could be used to approximate a typical hedging strategy but might appear unnecessarily complicated from the perspective of a small renewable generation company.

2.44 Redpoint's report describes the types of wholesale price index which could be used. Their analysis suggests that it should be possible to identify an appropriate price index for wholesale power, although the revenue stabilisation would not be perfect. Adoption of a price index would likely increase liquidity in the markets from which the index is derived, which in turn should increase the reliability of the index. Price reporting services and exchange-based offerings continue to evolve and it would be necessary to incorporate sufficient flexibility in fixing the index to adapt to future developments.

2.45 **Impact on smaller generators**: Smaller renewables generators would probably still seek PPAs with larger suppliers to manage the physical electricity on their behalf. However, rather than being fixed price as might be the case currently, these PPAs would be likely to be linked to the index price, so that generators could gain the benefit of the revenue stabilisation.

2.46 **Compatibility with other support schemes**: As described in Section 1, the Government is proposing to introduce two new support schemes: the Renewable Heat Incentive (RHI) and the Feed-in Tariff (FIT) for renewable generators below 5MW capacity. Regardless of the extent of the reforms to the RO, there will be issues relating to the interaction of the different schemes. The most obvious potential issue with the interaction of the FIT and the RO, is what happens at the capacity 'cut-off point'. Investors may have an incentive to size projects either above or below this point (to the extent that it is feasible to do so), depending on which scheme appears more generous at that point in time, which scheme provides more certainty, and the relative complexities and administrative burdens of the schemes. It would be reasonable to expect that a revenue stabilisation mechanism would change this interaction significantly, since the relative attractiveness of each scheme would be likely to remain fairly constant through variations in wholesale electricity prices.

2.47 **Effect on the overall wholesale market for electricity.** The wholesale market for power may be affected by the introduction of a price stabilisation mechanism

for renewable generators; more so as renewable generation forms a larger and larger percentage of total generation capacity.

Q9. What would be the best choice of wholesale power price index to adopt for use with any stabilisation mechanism and why?

Q10. What impact do you think a stabilisation mechanism would have upon the operation of the wholesale electricity market?

Q11. Do you envisage any other implementation challenges which might result from the introduction of a stabilisation mechanism? If so, how do you propose we deal with them?

Transitional arrangements

2.48 Any policy change carries the risk of introducing uncertainty to the market during the transitional period. A lack of market confidence and 'wait and see' behaviour could significantly affect deployment levels for a number of years, potentially negating the very benefits the policy change is intended to achieve. This is why we have committed in the Renewable Energy Strategy that, should we go ahead with a wholesale price revenue stabilisation scheme, we would do so using the following transitional arrangements:

- The new mechanism would not become mandatory before 1 April 2013, to coincide with the implementation date of the next scheduled review of the new ROC bands. In other words: projects which started generating before 1 April 2013 would not be forced to join the stabilisation scheme.
- Projects reaching accreditation after the publication date of this document, but before 1 April 2013 would be given a one-off option to join the scheme from 1 April 2013 but they would not be obliged to do so.
- We would announce key aspects of the scheme by the end of 2010.

2.49 By deferring mandatory implementation until 2013, we allow projects currently under development to reach financial close without affecting their economics, so minimising market uncertainty and delays in deployment. By allowing projects under development to elect to join the scheme upon implementation we would remove any incentive to "wait-and-see"; i.e., any tendency among investors to defer projects in the hope of a better regime in the future. Finally, we would want to determine the key aspects of the scheme (such as the reference price) by the end of 2010 to avoid development delays for projects which are currently in the early stages of consideration and would come on stream after 2013.

2.50 Any stabilisation mechanism is likely to require primary legislation as the changes are beyond the scope of secondary legislation.

Q12. Do you agree that this approach will minimise undesirable effects on market confidence whilst we consider the introduction of revenue stabilisation? If not, what further steps could we take to maintain confidence in the market?

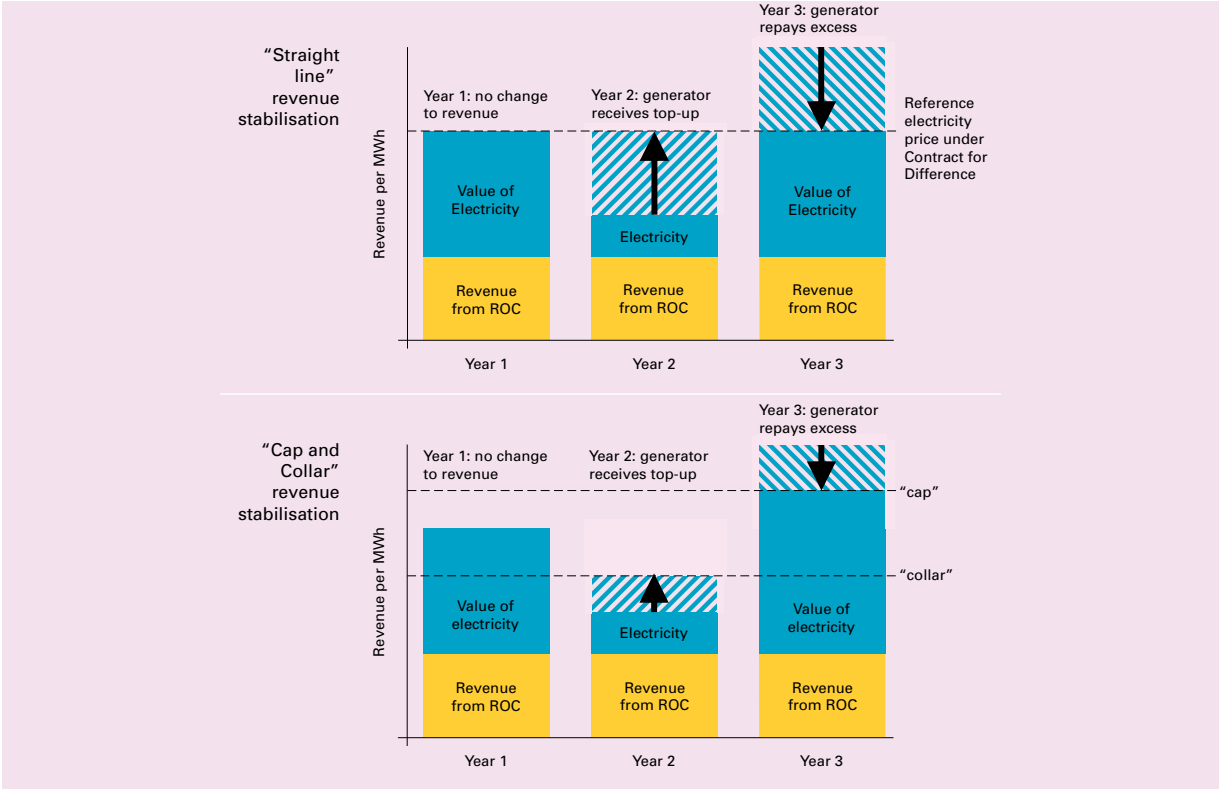
Preferred mechanism

2.51 We have looked at several different mechanisms which could be used to achieve wholesale price stabilisation under the RO. The mechanism we felt would be most suitable is a "contract for difference" scheme (see box 1). A contract for difference (CfD) is a contractual mechanism which allows for pricing risk to be transferred from one party to another by exchanging a floating rate for a fixed price. A CfD scheme would leave the RO itself unchanged but instead would operate alongside it.

Box 1 – How would a Contract for Difference mechanism work?

- The Government would announce a reference price for wholesale renewable power, set at a level which, together with the revenue from the RO, enable renewable investors to cover their costs and return on investment. (We would need to bear in mind the fact that different types of renewable generation have a different effective wholesale power price than other types of generation.)
- In years when the chosen wholesale price index exceeded the reference price, generators would pay back the difference to a Government agency; in years when the wholesale price index was lower, the Government agency would pay generators the difference. The difference would be calculated as the difference between the reference price and the wholesale price index rather than the actual revenue a generator achieved from selling the electricity (for instance under a PPA). This would maintain the incentive for the generator to respond to market forces, in order to "beat" the index.
- The Government agency would recoup any payment made from suppliers and would pass on any payments received from generators to suppliers; suppliers in turn would be expected to pass these on to their customers.

The graph on this page shows how a CfD could operate. A "cap and collar" scheme allows revenue fluctuation between a floor price ("collar") and ceiling ("cap"). In that case, a proportion only of the difference between the CfD reference price and the wholesale price index would be paid to (or refunded by) generators. This would have the effect of leaving some degree of wholesale price risk with generators.



2.52 The CfD option would require a separate settlement mechanism to be established which would operate outside the RO. This would require some kind of "agency" entity to manage the payments between generators and suppliers. This agency would not need to take on any wholesale price exposure, nor would it deal with physical electricity. However, it would require working capital, and this would impose extra costs on top of basic administration costs, though the extent of those costs could be reduced through regular settlement (e.g. monthly).

2.53 The cash flows associated with CfDs would be passed on directly to suppliers. This may create price and volume risk that they would need to manage. However the exposure would not be dissimilar to entering into PPAs directly with renewable generators, as they do currently.

Other options

2.54 We looked at several other revenue stabilisation mechanisms. In all cases, we felt that there were disadvantages as compared with the CfD model.

- **Buy-out price adjustment**: We considered mechanisms which involved adjusting the RO buyout price to compensate for movements in the wholesale power price. Since the buyout price affects the ROC price itself, this would affect all RO projects equally. It would therefore be very difficult to "grandfather" a mechanism of this kind (i.e. ensure that existing renewable generation projects are protected from changes which would adversely affect them) because the buy-out price applies to all renewable generation, not just new generation. Furthermore such a mechanism would have different effects on projects in different bands in the RO.
- **Band Indexation**: This option involved introducing a straight line inverse correlation between the wholesale price of power and the number of ROCs per MWh that a station received. The higher the wholesale price, the fewer ROCs would be issued and vice versa. A banding mechanism has the advantage that it could be applied just to new plant (with bands for existing plants grandfathered). However, this mechanism would introduce significant additional complexity into the operation of the RO as it would be very difficult for suppliers to predict what level of compliance they needed to meet and to achieve this in a predictable fashion. It would therefore be very difficult for PPAs to be agreed and the efficiency of the RO and operation of the renewables market could suffer as a consequence.

2.55 The proposed CfD option can achieve a similar result to band indexation: it allows the level of support payments to fluctuate inversely with the wholesale power price; it allows grandfathering in a relatively straightforward way; and it has the additional advantage of being able to operate outside the RO, minimising effects on the operation of the scheme.

Possible variations to any stabilisation mechanism

2.56 Should we decide to introduce a revenue stabilisation mechanism, we will consult in more detail on the design of the scheme and possible variations as outlined below.

2.57 Any of the stabilisation mechanisms considered could be structured as a "cap and collar" scheme. Alternatively, "straight line" indexation would kick in upon *any* deviation (upwards or downwards) from the chosen reference price, so removing the risk from generators altogether (see Box 1 above).

2.58 Any stabilisation mechanism could be mandatory or optional, though some types of mechanism (in particular, CfD) would lend themselves more easily to this than others. Allowing investors to choose between stabilisation or wholesale price exposure might have advantages because it would provide revenue certainty for those parties that required it to proceed with projects, while allowing other parties to be largely unaffected. However it would reduce the efficiency of the mechanism because not all plants would be covered by revenue stabilisation.

Q13. Do you agree that a Contract for Difference option would be the best choice of wholesale price stabilisation mechanism? If not, what would you recommend as the best option and why?

Q14. Do you have any initial views on whether a stabilisation mechanism should remove wholesale price risk from generators altogether or leave them with some degree of risk, via a "cap and collar" mechanism?

Q15. Do you have any initial views on whether a stabilisation mechanism after 1 April 2013 should be optional or mandatory for generators under the RO?

Biomass and co-firing

2.59 We do not intend to apply any new stabilisation mechanism to biomass or co-firing. As the economics of co-firing are at least in part defined by the price of fossil fuels, any fluctuations in fuel prices which drive the wholesale electricity price would leave them exposed if their revenues were stabilised. For biomass, the issues are less clear cut and depend on whether future biomass fuel costs become linked to fossil fuel prices. For example, if wholesale prices were high because fossil fuel prices were high and this led to a significant rise in biomass fuel prices, it might be counter-productive to reduce the level of support for biomass stations. In light of these issues, we do not believe at this stage that any new scheme would assist in these cases.

Q16. Do you agree that biomass and generation involving co-firing should be excluded from any new stabilisation mechanism? If not, why not?

Q17. Considering the balance between the benefits and the implementation challenges, do you think we should introduce a wholesale price revenue stabilisation mechanism?

ROC price revenue stabilisation

2.60 The revenue of generators under the RO consists, in the main, of revenue from selling electricity into the wholesale market and revenue from selling ROCs. We have set out above the benefits of introducing a mechanism to stabilise revenue from the wholesale price. The arguments in favour of stabilising the wholesale price of power apply also to stabilising the other major element of a renewable generator's revenue: the ROC price. This is why we have already introduced the concept of headroom to the RO.

2.61 The ROC value is determined by the difference between the number of ROCs presented and the overall number of ROCs needed to meet the Obligation. The bigger this difference the higher the ROC value. Headroom works by creating a positive gap of a predetermined size between the RO target and the predicted

quantity of renewable generation. This has the effect of providing suppliers with confidence of a set level of revenue. However, whether this gap in fact works to protect against a ROC price crash will depend upon whether the predicted volume of renewable generation is accurate. In the event that the prediction turns out to be an underestimate, the volume of generation may exceed the RO target and ROC prices could crash. Headroom therefore, introduces an inherent inefficiency into the RO.

2.62 A price stabilisation mechanism, by contrast, only kicks in when needed and so works more efficiently. If we decide to introduce a price stabilisation mechanism to apply to wholesale prices, a better way to tackle ROC price volatility may therefore be to apply a similar mechanism to the ROC price rather than increasing the level of headroom.

2.63 A stabilisation mechanism applied to ROC prices would work in a similar way as it would in relation to wholesale prices. For example, if the CfD option were adopted, we could set a reference floor price for the ROC price. Whenever the actual ROC price dropped below the floor price, the CfD mechanism would pay generators the difference. The Government agency administering the stabilisation mechanism would pass the cost on to suppliers.

2.64 If a stabilisation mechanism were adopted, then an increase in the level of headroom from 8% to 10% (see paragraphs 2.17 to 2.21 above) may no longer be necessary but we will revisit this issue at the time.

Q18. If you believe that a price stabilisation mechanism should be introduced for the wholesale power price, do you think that it should be applied to the ROC price as well?

Stations located outside the UK

2.65 In our June 2008 statutory consultation on the RO we invited views on opening up eligibility under the RO to include renewable electricity generated from offshore wind or marine technologies outside the UK and its waters. Respondents to the consultation broadly agreed with the proposal in principle.

2.66 At that stage the flexibility provisions in the Renewable Energy Directive were in the process of being negotiated and we made the decision not to make any changes as part of the 2009 Order until the Renewable Energy Directive was finalised.

2.67 The RES, published at the same time as this consultation, sets out the UK's action plan to meet the 2020 target, including our policy on counting renewable energy generated abroad towards our renewables targets (under the cooperation mechanisms or flexibilities set out in the Renewable Energy Directive). The UK's 15% renewable energy target will be particularly challenging given our relatively

low starting point. Current estimates are that, if there was a fully liberalised and perfectly efficient cross EU trading system, the use of flexibility mechanisms to meet the last percentage point could potentially save £400-£600 million in 2020. However, these estimates are uncertain, as in reality it is unlikely there will be such an open and efficient system.

2.68 Although there are a number of options for using flexibilities within the Directive, at this stage we are aiming to meet our 15% target domestically as far as possible.

2.69 We will however be open to the participation in the RO of renewable generating projects outside the UK, where the electricity is physically imported into and consumed in the UK. We propose to consider these projects on a case by case basis, and would need to ensure they met certain conditions, such as:

- Are generating new capacity;
- Are subject to a bilateral arrangement between the two governments;
- Offer genuine cost savings to the UK;
- Do not undermine the UK's financial support mechanisms;
- Provide sustainable renewable electricity that is eligible to count towards our target.

Q19. Do you agree with the proposed conditions? Are there any more conditions we should consider?

2.70 Under single market principles we might have to offer the same level of support (ROC per MWh) to the overseas project as we do for similar UK based generators. However there may be circumstances where there was some objective difference in the nature of the technology which would affect the level of support offered. For example, generating geothermal electricity in the UK is likely to be more difficult and expensive than in some other countries because hot rock is deeper here than in more volcanically active areas. In this case we may be able to offer less support to geothermal in a volcanically active area.

Box 2: Potential project examples

1. Offshore wind

Windfarms in the seas adjacent to the UK could be connected directly to the UK and could count towards our target if we reached an agreement with the relevant government.

2. Geothermal in Iceland

There has been some speculation that Iceland could supply us with geothermal electricity, which we could support through the RO. This would need an interconnector to be built between the two countries. The costs of the interconnector would be substantial, but the electricity may be deliverable at a lower cost than some other renewable generation which we would otherwise require to meet our target.

Q20. Do you think we should set support levels for stations located outside the UK in line with those for UK-based generation?

2.71 In terms of delivering electricity into the UK, there are several options allowing differing degrees of interconnection. We could require a direct connection between the generating stations and the UK or alternatively allow electricity to be delivered in part over other national transmission systems and our existing general purpose interconnectors. We propose limiting to the former, which will be easier to administer for Ofgem and show direct contribution to the UK electricity supply. The second option would potentially allow a wider range of stations to contribute, but may be more difficult to monitor and administer, and is limited by the capacity of the existing interconnectors.

Q21. Do you agree with our proposal to limit the eligibility for stations located outside the UK to those with a direct interconnection to the UK? If not, why?

2.72 Further consideration is needed around the practicalities of administration and enforcement before opening up the RO can be taken forward and we will work closely with Ofgem in developing the supporting legislation.

2.73 We will also consider the effect of trading on UK-based generators' participation in the RO. For example, if UK companies are involved in joint projects with other Member States, we may want to limit their eligibility for ROCs under the RO.

Q22. Are there any other specific issues we should consider when implementing international trading in renewable electricity through the RO?

Banding

Summary

As part of Budget 2009, the Government launched an early review of the support for offshore wind under the RO.

If the review and this consultation confirm the information we have received to date, we anticipate amending the Renewables Obligation Order with effect from 1 April 2010 so that offshore wind projects qualify for an increase in support for a time-limited period and subject to a number of conditions.

Offshore wind

2.74 A number of offshore wind developers have argued over the past winter that the economics of offshore wind projects had been particularly hard hit by the credit crunch, at a time when their supply chain costs were already rising. We therefore commissioned Ernst & Young to carry out a study into the current capital and operating costs for offshore wind projects in the UK and the key drivers of these costs. The results set out in their report[9] appear to illustrate how a combination of factors has led to significant increases in costs over a relatively short period. These factors include: increased costs due to the immature supply chain; increased foreign exchange costs where the majority of the capital costs are priced in euro or Danish kroner; and increased cost of risk in the current financial climate. We believe the results from the report highlighted the need to review the level of ROC support for offshore wind.

Q23. Do you have any comments on the Ernst & Young report on the current capital and operating costs for offshore wind projects? Is there any other evidence which we should take into account? If so, please provide details.

Why offshore wind is important

2.75 As part of our commitment to source 15% of our energy from renewables by 2020, we expect that renewable electricity will need to increase from 5.5% of supply today to around 30% or more by 2020. A large proportion of this is expected to be from onshore and offshore wind.

2.76 The UK has the largest potential wind energy resource in Europe and wind power is currently one of the more developed and cost-effective renewable energy technologies. While offshore wind is more technologically challenging and more expensive than onshore wind, it has a larger potential due to a stronger and more consistent wind resource out to sea, leading to higher power outputs per turbine and more hours spent generating each year.

9 Ernst & Young, *Cost of and financial support for offshore wind* (April 2009), URN09D/534, available on www.decc.gov.uk

2.77 For this reason, offshore wind is expected to make a critical contribution to renewable electricity in the UK by 2020 and we will need significantly more than the 8 GW currently planned to meet our challenging EU targets. It is therefore essential we provide the right level of support. We are aware of at least 1.3 GW of offshore wind capacity whose economics are under threat – enough to power around 1 million homes.

2.78 Although the economic downturn and subsequent changes in the interest and exchange rates have had an effect on the renewables industry in general, we believe the case for offshore wind is different due to specific supply chain and market factors not faced by other technologies. These factors are outside the control of offshore wind developers and have driven the need to review the level of ROC support.

Process for early review

2.79 The ROO 2009 provides that the Secretary of State can normally only make revisions to the banding regime following a four yearly review (the first of which is due to commence in October 2010). However, in order to deal with significant changes or events occurring outside that timetable, a review of all or parts of the banding provisions is possible where the Secretary of State is satisfied that at least one of the conditions under article 33 (3) of the ROO 2009 has been met.

2.80 In this case the Secretary of State has decided that the conditions of article 33 (3) (e) (which refers to the costs of generating electricity) are satisfied in light of the recent increase in costs faced by offshore wind developers.

2.81 Where a review is launched, any evidence which led to the decision to carry out that review (so far as is not commercially confidential) is peer-reviewed by a sub-group of the Renewables Advisory Board[10] (RAB), which produces a report on its conclusions on behalf of RAB to the Secretary of State. RAB's report for this review has been considered by the Secretary of State and is published alongside this consultation.[11]

2.82 The Secretary of State will decide on whether to make a change to the bands based on the evidence presented in the Ernst & Young report, RAB's report, and the responses to this consultation. Before making any changes to banding, the Secretary of State will also have regard to the matters set out in section 32D(4) of the Electricity Act 1989 for making banding provisions. In summary:

- the costs (including capital costs) associated with generating, transmitting or distributing electricity from renewable sources;
- the income of operators;

10 www.renewables-advisory-board.org.uk/

11 Renewables Advisory Board, *Review of the Renewables Obligation (RO): banding proposals for offshore wind* (June 2009), URN09D/699, available on www.decc.gov.uk

- the effect of the exemption of the supply of electricity from renewable sources from the Climate Change Levy;
- the desirability of securing the long term growth and economic viability of the industries associated with the generation of electricity from renewable sources;
- the likely effect of the proposed banding provision on the number of ROCs issued by the Authority and the impact this will have on the market for ROCs and on consumers;
- the potential contribution of electricity generated to the attainment of any target which relates to the generation of electricity or the production of energy imposed by a Community obligation.

2.83 If the Secretary of State decides to change the banding for offshore wind following this review, the changes would be incorporated into the next renewables obligation order (due to be implemented on 1 April 2010) and would be subject to parliamentary procedure and state aid approval.

Eligibility for increased support

2.84 We expect that several of the factors which have led to the increase in costs for offshore wind projects could be resolved over the next one or two years as the supply chain matures and the financial position stabilises. Our current view therefore is that only projects which meet certain conditions over a limited period should be eligible for any additional support. We have designed possible eligibility conditions which are intended to ensure that any additional support is targeted at projects which we believe would not otherwise proceed. We welcome views on these proposals.

2.85 We propose that 2 ROCs/MWh should apply where:

- No firm contract for the delivery of wind turbine generators relating to the specified generating capacity has been entered into before 22 April 2009;
- A firm contract for the delivery of wind turbine generators for the specified generating capacity is made no later than 31 March 2010;
- A copy of that contract is sent to Ofgem, or otherwise made available for audit (we will aim where possible to make use of the information which is already being reported to Ofgem for the offshore transmission regime process); and
- At least one foundation for the installation of one of the turbines subject to the qualifying order in that generating station (or the specified part of a generating station) is completed to above the surface of the sea no later than 31 December 2011.

2.86 We propose that 1.75 ROCs/MWh should apply where:

- No firm contract for the delivery of wind turbine generators relating to the specified generating capacity has been entered into before 1 April 2010;
- A firm contract for the delivery of wind turbine generators for the specified generating capacity of that generating station (or the specified part of a generating station) is made no later than 31 March 2011;
- A copy of that contract is sent to Ofgem, or otherwise made available for audit; and
- At least one foundation for the installation of one of the turbines subject to the qualifying order in that generating station (or the specified part of a generating station) is completed to above the surface of the sea no later than 31 December 2012.

2.87 The Ernst & Young analysis indicated that offshore wind projects at or near financial close in January 2009 had considerably higher costs than in their analysis completed in April 2007 (on which the current bands are based). They suggested that if support were to be provided through the RO, the level required to provide a reasonable economic return would be between 2 and 2.5 ROCs/MWh. The RAB report concluded that our proposal for 2 ROCs/MWh was broadly consistent with their experience, but stated that developers should be required to provide evidence to DECC of actual costs.

2.88 We propose to step down support from 2 ROCs/MWh to 1.75 ROCs/MWh over 2 years, as we believe there will be a period of adjustment as the current cost increases resolve themselves and stabilise. We also believe that a step down directly from 2 to 1.5 ROCs/MWh risks being so great a differential that it would lead to a major distortion in the development and commercial negotiations of projects which might reach financial close over this period. A step down should also limit the cost to the consumer. RAB concluded it would be preferable to carry out a further review in two years given the uncertainty as to future costs.

Q24. Do you agree with our proposed level of support for offshore wind, including our proposal to step down support from 2 ROCs/MWh to 1.75 ROCs/MWh over 2 years?

2.89 If the criteria proposed above were used to determine eligibility for any banding increase, we consider that a requirement for 'firm contracts' would typically require specified delivery schedules for an identified number of turbines to a project, and schedules of payments which cannot be broken by the developer of the project without material penalty clauses. We do not believe that framework contracts or options for possible future delivery should be treated as firm contracts. There is a possibility that a contract will be unfulfilled if the turbine supplier fails. While we regard this as a low risk in the offshore sector, we will

consider whether this circumstance requires specific provision, and if so what this should be.

2.90 The RAB report recommended that the accreditation date for first generation would be a more appropriate and consistent way to determine eligibility for an increase in ROC support.

2.91 Where a project meets the eligibility criteria for any banding increase, we intend that grandfathering principles will apply to protect investment decisions made on the information available at the time and that any change in support will only apply to future projects, i.e. a project eligible for 2 ROCs/MWh in 2010 would continue to receive 2 ROCs/MWh for as long as it is eligible to participate in the RO.

2.92 Based on the evidence we have seen to date, we consider that where contracts were signed before the Budget 2009 announcement, this was on the basis that projects were commercially viable at 1.5 ROCs/MWh.

2.93 Since the announcement, some developers have argued that any increased support for projects – which meet the proposed criteria – could risk unfairly prejudicing competing projects in the existing regime which signed contracts just before the Budget announcement. Their main concern appears to be their ability to compete for services and the wider impact the review will have on long-term investor confidence in the RO. We understand their concerns, but are conscious that we must strike a balance between providing a stimulus to the industry and limiting the costs to consumers. Our initial analysis suggests that widening the scope to include such projects could cost an additional £1 billion.

2.94 We welcome views on the eligibility criteria proposed above, including the proposal to set the cut-off date for eligibility at 22 April 2009, and seek further evidence as part of this consultation process. One of the purposes of the consultation is to review the criteria and ensure that they are appropriate.

Q25. Do you agree the proposed eligibility criteria and cut-off date for offshore wind are appropriate?

Q26. Do you think the differential in ROC support between projects that signed just before the 2009 Budget announcement in the existing regime and projects which could become eligible for 2 ROCs will create an unfair advantage? If so, please provide evidence.

Biomass and sustainability

Summary

- We do not propose changing the new provisions for sustainability reporting within the ROO 2009 as we need time for generators and Ofgem to become accustomed to the new processes.
- We have commissioned, in partnership with the Renewable Fuels Agency, a study to develop a methodology to measure the indirect impacts of co/by products and wastes.
- We do not propose to limit the use of tallow within the RO at this time.
- We proposed to publish a guidance note clarifying the use of mixed feedstock.
- We are considering whether we should amend the co-firing cap.

Sustainability reporting

2.95 The ROO 2009 introduced sustainability reporting to the RO. This was in expectation of future requirements resulting from the Renewable Energy Directive. The first reports of the results of this reporting will be available in 2010 and it is hoped that this will inform understanding for a sustainability scheme for other energy users of biomass such as for heat.

2.96 At the time of writing, it is not clear how solid biomass will be treated by the European Commission in terms of sustainability criteria and delivery against the EU 2020 renewable energy target. The Renewable Energy Directive establishes minimum GHG emissions savings requirements for biofuels and bioliquids[12]. For solid biomass used for heat and power, the Commission is required to report on the requirements for a sustainability scheme by the end of 2009 and bring toward legislative proposals if necessary following this decision.

2.97 We will consult on any required changes to the sustainability reporting requirements of the RO in 2010.

2.98 We are establishing a Biomass Sustainability Working Group, co-chaired by DECC and Defra with representation from the DfT and the Environment Agency, and will shortly be inviting representatives from the industry. This will be a forum to identify and share good practice and to help develop the UK's position on biomass used for electricity (and heat) and related sustainability issues. Its remit will include informing the UK's contribution to the development of international standards on sustainability criteria for bioenergy.

12 Requiring a 35% GHG emissions saving over the counterfactual

Mixed feedstock scenarios

2.99 Feedback since the launch of the ROO 2009 in April this year has indicated that the area of mixed fuels is still causing confusion. This area of the RO can include CHP, waste, biomass and co-firing, a range of different inputs including sewage and landfill gas and complex technologies such as pyrolysis and gasification. We will publish a guidance note shortly to provide more clarity in this area.

Indirect effects of co/by products and wastes

2.100 In the Government Response to the RO in December 2008[13], we noted there were sustainability concerns resulting from the use of co-products, by-products and wastes in the RO that are also feedstocks for other industries. This concern was mainly expressed in relation to tallow, though we recognise the issue is applicable more broadly.

2.101 In the case of tallow, the sustainability issue arises from the use of tallow by other non-energy sectors, namely the oleochemical industry[14]. Concerns have been raised that demand created by the RO[15] could lead to the supply of tallow for the oleochemical industry being restricted, forcing them to substitute for palm oil, which has particular sustainability concerns. It was suggested that Government should consider placing a cap on the use of tallow within the RO to limit its use for energy generation.

2.102 Since publication of the Government response, the only oleo-chemical producer currently using tallow within the UK has announced that it is consulting on the potential closure of its UK tallow processing plant. It is not yet clear how this move will alter the UK market for tallow, but we are working with the Department of Business, Innovation and Skills (BIS) to scope out this issue. Further clarification of European waste legislation is also desirable to provide legal certainty on the circumstances when the Waste Incineration Directive (WID) applies to burning of tallow. Defra are currently engaging with the Commission to gain this clarity. For these two reasons, we do not feel it is appropriate to propose limiting the use of tallow within the RO at this time.

2.103 Similar issues occur with other co-products, by-products or wastes such as molasses, straw and waste wood. They also impact on the Renewable Transport Fuel Obligation (RTFO). The Renewable Energy Directive sets out how such feedstocks should be treated in terms of biofuels and bioliquids and has committed the Commission to providing a methodology to report the full indirect

13 Reform of the Renewables Obligation, Government response to the statutory consultation on the Renewables Obligation Order 2009 (URN: 08/1503x) available on www.decc.gov.uk. See page 52.

14 Oleochemicals are chemicals derived from biological oils or fats as opposed to petrochemicals, which are derived from petroleum.

15 Currently limited by the EU Waste Incineration Directive (2000/76/EC) regulations which restrict the use of tallow in co-firing installations

effects of biofuel production pathways. However, there is currently no such undertaking for solid biomass, though it may be considered within the paper on sustainability reporting of biomass that the Commission is bound to deliver by the end of 2009.

2.104 In the interim we have therefore commissioned, in partnership with the Renewable Fuels Agency, a study to develop a methodology to measure the indirect impacts of co-products, by-products or wastes. This study will apply the methodology to a series of case studies – including tallow, solid municipal waste and straw – and will be used to inform the development of future sustainability reporting requirements for biomass feedstocks. The results will be considered for inclusion in future sustainability reporting requirements for the RO and will also be submitted to the Commission as part of the evidence base on this issue.

Q27. Do you agree that we should not impose a restriction on the use of tallow in the RO until clarity of the new marketplace has been established?

Co-firing cap

2.105 The co-firing cap (paragraphs 13(3)-(6) of 2009 Order) works by setting a limit as to the number of ROCs from co-firing generation with regular biomass suppliers can present in compliance with their obligation. Under the 2009 Order this cap will be set at 12.5% for the 2010/11 Obligation period.

2.106 The co-firing cap was introduced due to concern that if not restrained co-firing ROCs might flood the ROC market, significantly decreasing the value of ROCs for other technologies and meaning investors would place a higher risk premium on their investment decisions.

2.107 The cap only applies to ROCs from stations co-firing regular biomass. It does not apply to ROCs from stations co-firing with energy crops, co-firing with regular biomass and CHP, or co-firing with energy crops and CHP.

2.108 Some respondents to the 2008 Statutory Consultation raised concerns about the effect of the cap on the co-firing ROC market, arguing that the cap restricted competition and disproportionately penalised independent co-firers. They argued that the cap forced them to participate in a partitioned marketplace, and this meant that they had to accept significant discounts in price for their ROCs.

2.109 Given this concern we have instructed consultants Oxera to look at these arguments and provide us with a report on the effect of the cap on the co-firing market. Mindful of concerns raised by other respondents that uncapped co-firing could lead to unpredictable fluctuations in the ROC price, we have also asked Oxera to look at the effect on the wider ROC market of changes to the size of the cap (including its removal).

2.110 Interim findings of the report suggest that in the long run the cap is unlikely to significantly affect the ROC market for co-firing. This is due in part to the banding allocated to co-firing in April 2009 which effectively doubles the amount of co-firing generation with regular biomass needed to receive 1 ROC (i.e. 2MWh as opposed to 1MWh). However, in the shorter term – 2011-2014 – there may be a problem in that the cap may restrict independent generators' ability to sell ROCs, as plant due to close, for example plant under the LCPD (Large Combustion Plant Directive), may now run at a higher capacity than originally envisaged.

2.111 We invite views and evidence on whether there is a case for the cap to be changed in the future and welcome opinion on the conclusions of the Oxera report which will be published on the RO website later this summer. We will consider if there is any need to change the cap in light of the findings of the report and the results from this consultation.

Q28. Do you consider the cap be retained at 12.5% going forward?

Q29. If you think the cap should be changed, when should this happen and at what level should the cap be set? Please provide evidence supporting your answer.

Technical and administrative issues

Summary

- A working group will be set up to look at how we calculate the future level of the RO
- We welcome input into:
  - How the level of the RO is calculated;
  - Possible methodologies for predicting expected electricity usage in subsequent obligation periods;
  - How we use historic data to predict future generation; and
  - How we use planning data to predict future growth.
- We propose that ROCs should not be revoked after presentation but that the generator should be required to offset the equivalent amount or make a payment into the buyout fund.
- We are making a small technical change concerning the 3-month average for measurement of AD feedstock.
- We are proposing to allow Ofgem to use a correction factor to account for offshore transmission losses.

Calculating the level of the obligation

2.112 The changes introduced by the Renewables Obligation Order (ROO) 2009 included the requirement for the Secretary of State to announce the level of the obligation for the next obligation period on 1 October preceding the start of that obligation period. We will set up an expert working group to identify the methodology to calculate the relative potential levels of the obligation, including identifying relevant information to be used. This consultation invites suggestions as to sources of information to be used and comments on the relative values of those already identified. These responses will be fed into the working group for consideration.

2.113 In order to announce the obligation level it is necessary to carry out three calculations (A, B and C) as set out in the Order, Part 5 (articles 9-11).

2.114 Both Calculations A and C require the Secretary of State to predict expected electricity use in the subsequent obligation period. There are a number of possible methodologies for calculating expected electricity use, all of which will have different risks and benefits. For example a simple model assuming 1% growth in electricity demand year-on-year which has proved generally effective to date, will not take account of decreased electricity demand due to the economic downturn. This can be compared with an estimate based on the National Grid's maximum demand modelling which forecasts maximum possible demand and so is likely to over-estimate actual demand.

Q30. Do you have a view on how we should predict expected electricity use in a subsequent obligation period? What are the advantages/disadvantages of any suggested methods of predicting expected electricity use?

2.115 Calculation B requires us to predict the likely number of ROCs which will be generated under a banded regime from different eligible renewable sources for the next obligation period, and ensure that the number of ROCs generated will not be greater than the predicted obligation size.

2.116 For existing stations we will base this prediction on the ROC Register which provides sophisticated historic information on generation from different stations. In order to use this data we will need to check the variability of output from different sources and the effect of this on the cumulative output. For example the amount of generation that intermittent technologies (such as wind and hydro) will produce is largely determined by weather conditions, while baseload generation tends to be determined by fuel costs, although co-firing of regular biomass is also driven by the co-firing cap. We will therefore need to ensure our calculations take account of this potential variability and allow for it in determining what assumptions we make about the output from different technologies. These will need to include assumptions about the level of generation expected in wet/

windy years as compared with dry/calm years as well as using modelling of year ahead fuel prices.

2.117 In determining the number of ROCs that could be presented, it is necessary to take account of the number of ROCs on the Ofgem ROC Register which are listed as banked[16] for the previous obligation period. We aim to do this by examining real data for number of ROCs banked in previous obligation periods and modelling for future periods.

Q31. Do you have a view on how we should predict the expected level of ROCs generated from existing generating stations in a subsequent obligation period? What are the advantages/disadvantages of any suggested method?

Q32. Do you agree with our proposal for accounting for banked ROCs?

2.118 For planned new capacity, due to start generating during the obligation period, different information will be required. For those stations which are subject to the section 36 planning approval process or go before the Infrastructure Planning Commission (IPC) for approval we intend to use the posted date of commissioning as this is the earliest date they will start generating, although we recognise that a number of these posted dates are likely to slip due to project delays. For those stations which are not subject to section 36 approval or the IPC we will use a combination of information available from the BWEA and RESTATs website.

Q33. Do you agree with our proposal for predicting new generation capacity for the subsequent obligation period? What are the advantages/disadvantages of this method of predicting this new capacity?

ROC revocation (after presentation)

2.119 A number of stakeholders have raised concerns around ROC revocation, specifically the revocation of ROCs after they have been presented to Ofgem by suppliers. We have not explicitly consulted on this or set it out in the ROO to date resulting in some confusion over how the legislation should be interpreted.

2.120 ROC revocation was introduced to prevent generators over-claiming ROCs and to allow Ofgem to rectify any mistakes made in allocation. The Government is keen to ensure a balance between unwanted complexity/risk and ensuring a consistent, fair approach. We therefore see a need to come to a common understanding on the best approach to this matter.

2.121 Preventing any ROCs from being revoked after they have been redeemed would remove commercial risk for both generators and suppliers and avoid the potential

16 Suppliers are able to use ROCs from the previous obligation period to meet up to 25% of their obligation.

unravelling of commercial contracts. However, this could potentially lead to generators not reporting a mistake in their claim until after the ROC had been redeemed, when there would be no recourse available to correct the situation. The generator would then be able to keep the extra income earned. In the same way, general administrative mistakes would not be able to be rectified.

2.122 However, we recognise that revocation of ROCs from suppliers once the ROC has been redeemed could impact on a supplier's obligation compliance and potentially lead to penalties being imposed through no fault of the supplier. For generators, the uncertainty this imposes on the supplier could lead to a reduction in the value a supplier is willing to pay for ROCs.

2.123 An alternative way forward that we propose to provide a solution is for Ofgem to offset the number of ROCs to be revoked from the generators' future output. For example if ROCs from a generator were found to have been issued incorrectly, Ofgem would subtract the same number of ROCs from a future claim from that generator. Obviously this carries some risk that the generator may no longer be in operation. In this case the original ROCs may need to be revoked.

2.124 To give some certainty to Ofgem and generators, we propose that a time limit be set on how long Ofgem has to go back and take action. Given the auditing timeframe, we propose six years from the date of the incorrect claim.

Q34. Do you agree that the proposal to offset redeemed ROCs against a generator's future output presents a proportionate approach?

3-month average for measurement of AD feedstock

2.125 In the Renewables Obligation Order 2009 Statutory consultation,[17] we proposed to allow the proportion of eligible electricity generated in a given month attributed to "sewage gas", "anaerobic digestion" and "digestible fossil fuel derived substances" to be based on the relative dry mass of the sewage, non-sewage and digestible fossil fuel derived substances used to produce biogas over the previous three months (including the month in which the fuel is produced). This reflects the fact that new substances are not necessarily added to an anaerobic digester each month. This change was not reflected in the ROO 2009, which restricted the measurement to one month only. We are therefore proposing to make this change in the 2010 Order. We do not expect this change to affect any current generators as no electricity is currently generated in this way.

17 Reform of the Renewable Obligation: Statutory consultation on the Renewables Obligation Order 2009 (URN 08/1022) available at www.decc.gov.uk

Offshore wind transmission losses

2.126 The offshore transmission regime is expected to go live in June 2010 and will mean that high voltage offshore transmission (i.e. the conveyance of electricity at 132kV and above), will become a licensed activity. The regime effectively moves the network/generator boundary of an offshore generating station to a point offshore; as opposed to currently where offshore generators own the 132kV export cables leading to shore; i.e. the boundary was at a point where they connected to the transmission or distribution network onshore. In most cases, metering will need to take place offshore where the offshore generator connects to the offshore transmission network. In instances whereby an export meter is not located at the grid entry point (i.e. metering is onshore), Ofgem would seem to need to take into account any transmission losses between this point and the network/generator boundary for the purposes of the issue of ROCs. One suggestion is for Ofgem to use an Elexon correction factor. Ofgem will publish details of how they will make this adjustment in their guidance and we will look into whether any changes to the legislation are necessary in time to implement in April 2010.

Section 3:

Feed-in Tariffs

Scheme design proposal

Introduction

3.1 As our Renewable Energy Strategy sets out, we want to have the right incentive in place for the right target group. The RO encourages renewable generation as part of the wider electricity market, but it is a complex scheme intended for professionals in the energy sector. In response to the 2008 Renewable Energy Strategy consultation, a large proportion of stakeholders advocated Feed-in Tariffs (FITs) as the most appropriate support mechanism for distributed and small-scale electricity.[19] This view was shared by Parliament, and as a result the Energy Act 2008 put in place powers to introduce FITs for installations of up to 5MW[20] (or 5,000kW) generation capacity.[21]

3.2 FITs are a per-unit support payment (p/kWh) for electricity generation. They are already widely in operation in other EU Member States to support renewables. The introduction of FITs will mean a major departure from how small low-carbon generators in Great Britain are currently rewarded. Under existing arrangements, renewable generators are awarded Renewable Obligation Certificates (ROCs), and are paid for their electricity by suppliers through tariffs (in the case of domestic-scale microgeneration) or through power purchase agreements (PPAs). The tariff schemes vary between suppliers: some pay for all electricity that small generators produce; others only for electricity exported. There are different approaches to how the value of the ROCs is treated as part of the price paid to the generators.[22]

3.3 We believe the FITs structure proposed here provides the right level of simplicity and certainty to encourage non-energy professionals to invest in small-scale generation. We also believe that it provides the incentives to encourage those generators to consume the electricity they generate and become more energy efficient while they do so.

3.4 Following the passage of the FITs enabling powers in the Energy Act late last year, the proposed FITs design has been produced in a short space of time, and the time remaining until the proposed start of the FITs scheme in April 2010 is short. Therefore several aspects of the design and operation of FITs may not be covered in this consultation. We welcome feedback on all aspects of FITs, including issues not specifically referred to here.

19 www.decc.gov.uk/en/content/cms/consultations/cons_res/cons_res.aspx

20 The limit will be set by order (see Section 41(4) of the Energy Act 2008). We are consulting on the limit in this document.

21 These powers apply to Great Britain. Northern Ireland has not yet taken a decision on feed-in tariffs.

22 Review of the market for exported electricity from microgeneration, Ofgem, March 2008 www.ofgem.gov.uk/Sustainability/Environment/Policy/SmallrGens/DomsScMicro/Documents1/Final MG report 11 March 2008.pdf

Tariff structure

3.5 We propose the following basic structure for FITs:

- A fixed payment from the electricity supplier for every kilowatt hour (kWh) generated (the "**generation tariff**").
- Another payment additional to the generation tariff for every kWh exported to the wider energy market (the "**export tariff**"). Generators will be guaranteed a market for their exports at a long-term guaranteed price. The generator may choose whether to sell exported electricity to the supplier at this guaranteed export tariff, or negotiate a price for exported electricity in the open market.
- In addition, generators will benefit because they will have the opportunity to use that electricity on-site to offset some or all of the electricity they would otherwise have had to buy.

Tariff based on generation

3.6 Although the name 'feed-in tariff' suggests payment for electricity fed into the grid for use in the broader energy market, we believe FITs payments should include consideration of all electricity generated, not just that which is exported. This will help to encourage use of electricity directly at the location where it is generated.

3.7 Parliamentary debates on FITs during the passage of the Energy Bill (now the Energy Act 2008) focused on a generation tariff. In subsequent discussions with (and reports from) key stakeholders, the generation tariff was the most favoured option and there was an expectation that FITs would be structured in this way.

3.8 The most likely alternative, a tariff paid only for exported electricity, would encourage all the electricity generated to be exported straight onto the electricity network, thereby reducing some of the wider benefits of using that electricity directly on-site. Exporting all the electricity provides no incentive to smooth out intermittent load on the local distribution network which may increase the costs to that network.

3.9 The generation tariff will be a fixed price per kilowatt hour, set at different levels for different technologies and installation sizes. See the "setting the tariffs" section below for the proposed tariff levels. We expect to lower the tariff levels for new projects over the years, but any individual installation, once starting to receive a tariff at a certain level, will continue to receive the same generation tariff level throughout its entire support period under the FITs.

Guaranteed payment for export

3.10 For the majority of small-scale installations at least some of the electricity will be exported onto the electricity grid at some times of the day. We propose that generators receive a guaranteed market and price for that electricity. As with the generation tariff, we propose that the export tariff will be fixed for any individual project.

3.11 For small generators, finding buyers for their exported generation and achieving a reasonable price for it can be difficult and creates an extra burden that is disproportionate to the value of their exports. It is inefficient for non expert generators at the small scale to negotiate PPAs. Generally speaking, the smaller the amount and the greater the unpredictability of the electricity being delivered, the lower the value placed on that electricity by suppliers, so it may be difficult for generators to attain much value from their exports. One of the prime reasons for introducing FITs is to remove the need for individuals and organisations whose primary business is not energy to participate in the electricity market.

3.12 Following on from the Climate Change and Sustainable Energy Act 2006, and at the time of the 2007 Budget, the Chancellor of the Exchequer requested Ofgem to review the effectiveness of the market for exported electricity from microgeneration. Ofgem reported in March 2008[23] that although many suppliers were offering a range of tariffs which reflected the value to them of electricity exported from household microgeneration, the market is complicated.

3.13 While the export tariffs offered by suppliers and work by Ofgem and the Energy Saving Trust to provide information[24] make a helpful contribution to the development of the market for microgeneration, it is not clear that they are sufficiently robust to support the expansion in small-scale generation that we expect under FITs. This is for a number of reasons:

- Very little of the electricity that is currently being paid for by suppliers is being entered into the settlement system that is used in the UK to reconcile the difference between the electricity flows into and off the grid and the payments made by the various suppliers, meaning that the value is not being realised; providing for this generation to be fully incorporated into the market is likely to require changes to industry market arrangements;
- Prices are not guaranteed for the long term – they can be changed or withdrawn at short notice; and

23 Review of the market for exported electricity from microgeneration, Ofgem, March 2008 www.ofgem.gov.uk/Sustainability/Environment/Policy/SmallrGens/DomsScMicro/Documents1/Final MG report 11 March 2008.pdf

24 At the request of the Government in the 2008 Budget, Ofgem and EST worked together to put in place a web-based tool to help customers compare the different export and generation tariffs available to microgenerators – EST staff have also been trained to provide guidance to microgenerators. The web page is: www.energysavingtrust.org.uk/Generate-your-own-energy/Sell-your-own-energy

- In the long term, prices will fluctuate reflecting the underlying energy market (fuel prices etc), which could result in returns to small generators that are considerably greater than or less than the amounts they need to service their investment.

3.14 Evidence from investors is that uncertainty around the value of returns results in them being heavily or completely discounted by financiers, i.e. that part of the future income stream cannot be used in full as part of the security for a loan. As a result, the extra uncertainty is factored into their financial decisions as a requirement for higher total returns than would be expected if the income was more certain. Our consultants suggest the impact is that investors require an increase in the rate of return of one percentage point.

3.15 Therefore, we propose a system of long-term certainty for export payments. We consider that the best way to achieve this would be to require suppliers to purchase exports from FITs generators at a guaranteed minimum price. See the "setting the tariffs" section for how this price may be set and the levelisation section for how this price will be treated in levelisation.

3.16 The combination of a fixed generation tariff and a fixed export tariff effectively provides a fixed total income stream consistent with the majority of FITs systems operated elsewhere in the EU. This is regarded as a particularly efficient system for generation at the small scale[25].

3.17 An alternative would be to allow the market to deliver the value for exports. This would be similar to the current situation and to that which exists for generators within the RO. This option would allow for competition to develop between suppliers for small generators' exports and for this growing sector of the market to play a role in the broader competitive market. This could deliver some confidence to the market but would be unlikely to deliver (e.g. greater than ten-year) price security needed to support finance. This would reduce the attractiveness to non-specialist generators and lead to higher costs passed on to electricity consumers. However we are seeking views on other ways to deliver this long-term certainty e.g. by central purchasing arrangements. Views are therefore welcome from all stakeholders on the most cost effective way to provide this.

3.18 Nevertheless, we recognise that there may be small-scale generators who will want to negotiate a price for their exported electricity in the belief that they will be able to attain a higher price than that guaranteed by the FITs scheme. This may be the case particularly with controllable forms of generation such as biomass CHP and anaerobic digestion, where by generating only at peak times, they can get the benefit of high prices and deliver benefits to the electricity system. Therefore, we propose offering generators a one-off choice of receiving a fixed export tariff or

25 Qualitative issues in the design of the GB feed-in tariff, June 2009, Pöyry Energy Consulting and Element Energy, available at www.decc.gov.uk

opting out and only receiving a fixed tariff for generation and participating directly in the market for the sale of their exports.

3.19 A further justification for ensuring that generators receive both generation and export payments is to provide an additional incentive for energy efficiency. The more energy they save, the less of their generation they use and the more export payment they will receive. Providing an incentive to be energy efficient helps meet our aspiration to drive change in public behaviour through FITs.

On-site use of electricity

3.20 Small-scale distributed generation realises the benefits of using electricity at the point where it is generated. A proportion of electricity generated in large power stations (such as coal, gas or nuclear) is lost when it is transmitted from the power stations to the centres of demand where it is used; around 2% of electricity is lost in transmission and around 5% in distribution.

3.21 Based on that concept, small-scale generators should be incentivised, where possible, to use the electricity they have generated in their houses or at their business premises, as that would be the most efficient use of that electricity. There is a general expectation that it is appropriate to allow someone who has purchased and installed generation equipment to be able to use the electricity they have generated at no further cost. Prospective small-scale generators, especially householders and small businesses, see a major benefit of on-site generation in being able to reduce their electricity imports and reduce the impacts of rising electricity costs, thereby becoming more energy independent. For businesses with high electricity costs, this is likely to be a particular attraction of installing small-scale low-carbon generation. They are able to remove or reduce the risk and volatility of a significant cost to their business as well as, through FITs, having an additional income stream from that generation.

3.22 A key aspiration of FITs is to drive behavioural change. There is evidence that people who install small-scale generation develop a greater understanding of energy and become more efficient energy consumers[26]. For more people to become informed energy users and change their behaviour as a result of FITs, it will be important that they see a reduction in their imported energy and their energy bills as a direct consequence of generating electricity. Unless generators are able to use the electricity they generate, FITs may be seen merely as an ethical investment opportunity rather than something with a direct energy impact on the generator.

26 Sustainable Consumption Roundtable (2005), Seeing the Light: the impact of micro-generation on how we use energy. www.sd-commission.org.uk/publications/downloads/Micro-generationreport.pdf

3.23 In order to encourage management of demand to times when the installation is generating, actual exports will be rewarded, and all consumption that exceeds onsite generation at any time (rather than net imports over the year) will need to be bought from suppliers.

Q35. Do you agree that FITs should be structured in order to recognise all generation, rather than just exports?

Q36. Do you agree that the best way of delivering security for the investor is to set a long-term guaranteed price for exports?

Q37. Do you agree that FITs generators should also benefit from on-site use of their generation?

Q38. Do you have any other views on the basic structure of the FITs?

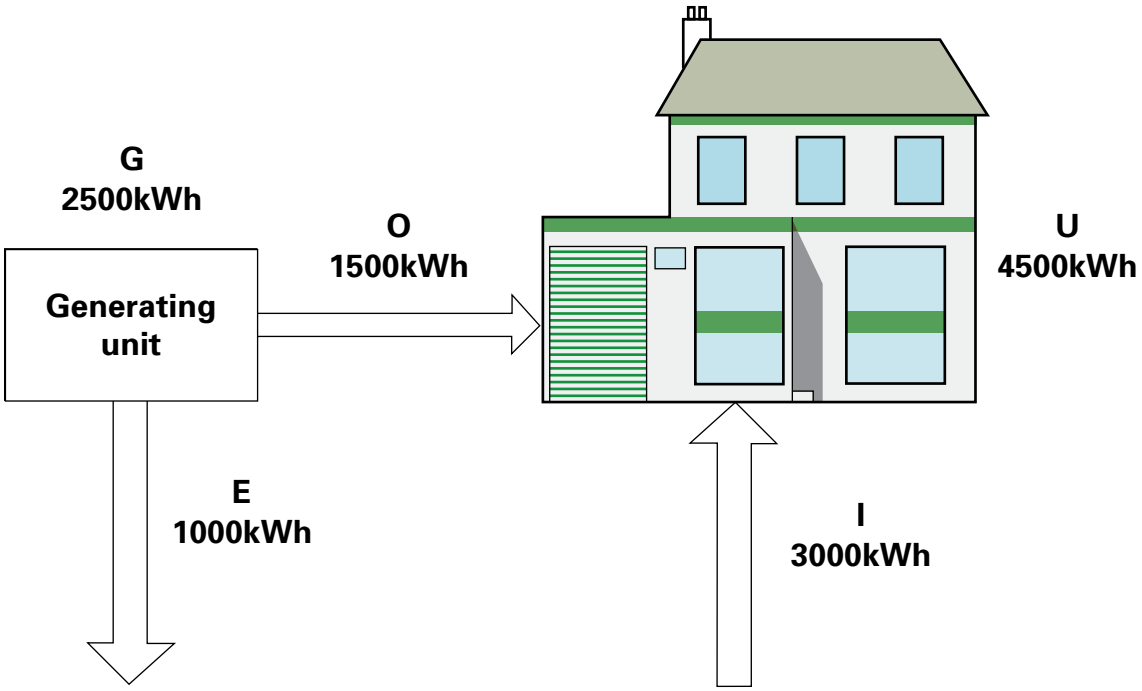
How the tariffs would work for different generators

Generators who use energy on-site

3.24 Under the proposed tariff model a householder or business that uses energy on-site will receive three different strands of benefit from FITs:

- A fixed price for each unit of electricity generated by their installation. This price will remain the same throughout the lifetime of the installation's eligibility for FITs payments;
- A guaranteed price for each unit of electricity exported onto the electricity grid from their installation throughout the lifetime of the installation's eligibility for FITs payments; and
- The benefit from reducing their imports of electricity by using the electricity they generate in their premises. This benefit will include lower bills and the benefit of being at least partially shielded from future price rises in electricity.

Figure 5:
Illustration of potential electricity flows for an on-site generator



Key

G = Generation = O+E
O = Onsite use
U = Usage = I+O
E = Export
I = Import

3.25 In this diagram, the site generates 2,500 kilowatt hours (kWh) per annum (e.g. from a solar PV panel). They use 1,500kWh of the electricity they generate. 1,000kWh is exported, because it is generated at times when the household does not use it. The household uses a total of 4,500kWh per annum. Therefore, they need to import 3,000kWh from their electricity supplier.

3.26 Under our proposal if the tariff for generation is, for example, 30p/kWh, the generator will receive a FITs payment of £750 per annum (2500kWh x 30p) for the electricity they generate. They will also receive a payment for the electricity they export; assuming a price of 5p/kWh this would be £50 (1000kWh x 5p). They also derive a benefit from the 1,500kWh they generate and use on-site as that will offset 1,500kWh they would otherwise have had to buy from their electricity supplier. Assuming an import price of 10p/KWh this would be a saving of £150 (1500kWh x 10p).

3.27 If FITs were delivered by a generation only tariff, and generators were required to pay import rates for all electricity used (including that generated on-site) the same

return would be delivered to the generator of 38p/kWh to provide £950 per annum (2500kWh x 38p).

Generators with no on-site use

3.28 Generators who have no direct on-site use for their electricity, for example small commercial wind farms or communities with a shared installation, will receive 2 strands of benefit from FITs:

- A fixed price for each unit of electricity generated by their installation; and
- A price for each unit of electricity exported onto the electricity grid by their installation.

3.29 In practice, given that such installations will export virtually all their generation they will effectively receive a single per unit payment for all their electricity (the sum of the generation and the export tariff). Therefore, given a fixed tariff, the only variable in their reward will be the quantity of electricity they generate.

Eligibility

5MW limit

3.30 Section 41(4) of the Energy Act 2008 provides that the Secretary of State may specify the maximum capacity for FITs by Order, but that this can not exceed 5MW. Section 41(5) provides that CHP systems with an electrical capacity of 50KW or less may be eligible for FITs payments. We propose that these are the limits we use for all technologies when the scheme is implemented. The maximum 5MW capacity limit was introduced in legislation to provide certainty to investors under the RO while giving us the flexibility for FITs to target the scale of projects which may not otherwise come forward. We continue to believe that the greater simplicity and financial certainty of FITs will be attractive to investors up to the 5MW scale.

3.31 We will not require all installations within this capacity limit to move to FITs. At some scales there will be a choice of receiving support through either FITs or the RO. Therefore, different people and organisations will make a choice between the RO and FITs on the basis of their risk appetite and their familiarity with the electricity market. Large, risk-averse organisations whose primary business is not energy are more likely to invest under FITs. This flexibility should maximise the number of projects which are built at the sub 5MW scale.

Q39. Do you agree with the proposed limits of 5MW for renewable technologies and 50kW for gas fired CHP for FITs installations?

Q40. If you disagree with the proposed limits, what lower limits would be more suitable and why?

Off-grid and private wires

3.32 Remote communities and dwellings are potentially areas where small-scale generation can deliver major benefits. These communities currently have high energy costs and depend on carbon-intensive generation. We therefore intend that off-grid electricity supply will be eligible for FITs. There are however potential issues with how the electricity generated by off-grid generators is used. Therefore, we intend to replicate some of the procedures currently used under the RO and require off-grid generators to declare that the electricity generated has been used. Such premises would be subject to checks and audits.

3.33 We propose that off-grid generators would receive a generation tariff. Like on-site generators, they will also receive benefits from avoiding the cost of generating electricity by other means, e.g. diesel.

3.34 Because off-grid generators do not have a direct relationship with a supplier, there are also issues regarding who should make FITs payments to these generators and how they should be made.

Q41. Do you agree that generators off the electricity grid should be eligible for FITs? If so, what safeguards should be put in place for these generators to ensure the electricity is being used?

Technologies

3.35 FITs for small-scale low-carbon electricity are intended primarily to support the widespread deployment of proven technologies now and up to 2020, rather than to support development of unproven technologies.

3.36 Taking that into account, on the launch of FITs in April 2010 we propose to only offer tariffs to those technologies which can realistically and effectively be deployed in the short term.

3.37 Additionally, limiting the number of technologies provides the simplicity which will make launching the scheme in April 2010 possible, and administering it thereafter less costly.

3.38 Therefore, from the start of the scheme, we propose to offer tariffs to the following technologies, which we believe are the technologies available for domestic and small-scale generation in the short term:

- Wind;
- Solar PV;
- Hydro;
- Anaerobic digestion;
- Biomass and biomass CHP; and
- Non-renewable microCHP[27];

3.39 Because of the short time available to develop the scheme, and in order to maximise consistency between the RO and FITs, we are not intending to develop detailed rules and standards for eligibility. Reference will be made to definitions and standards used for the RO, including on issues such as fuel sustainability.

3.40 Renewable technologies which currently receive, or are eligible to receive, support under the RO will continue to be eligible for that support – a lack of FITs for these technologies from launch does not affect that arrangement.

3.41 We are not proposing to offer FITs for sewage gas or landfill gas. Although individual generating units in these technologies commonly fall into the sub 5MW capacity category, they are primarily deployed by large companies with experience in the energy sector – not the types of companies or people the FITs scheme is primarily aimed at. Furthermore, a large deployment of these technologies has been financially viable under the RO so we do not believe they require the simplicity and certainty of reward offered by FITs to drive further deployment. The RO banding review included changes to the support for landfill and sewage gas following several years of cost-effective operation and remains the mechanism to continue encouraging the deployment of those technologies.

3.42 There are other renewable technologies for which we may want to offer tariffs as they come closer to deployment at the small scale. We could do this by either:

- Providing a single tariff from April 2010 to capture all remaining renewable technologies (this could be set using rewards they receive under the RO as a guide); or
- Setting tariffs per technology as part of the regular review process (see the "Setting the Tariffs" section below) to reflect changing circumstances.

27 Although we propose to introduce tariffs for non-renewable microCHP, these are being developed together with the Heat and Energy Saving Strategy and the Renewable Heat Incentive and will be announced later in 2009.

Q42. Do you agree with the selection of technologies for which we will be providing tariffs from April 2010?

Q43. Should technologies for which we do not propose to offer a specific tariff from April 2010 be handled by:

- **Providing a single tariff from April 2010 for all remaining technologies; or**
- **Considering as a new tariff band as part of regular FITs reviews?**

Multiple technologies at the same site

3.43 There will be instances of generators installing two types of technology on the same site (e.g. a school may install a wind turbine and solar PV panels). Each technology will receive its own tariff so the generator will receive different payments per unit generated from the different technologies.

3.44 In order that the differentiated tariff payments are possible, the generator will have to have a generation meter for each technology in order to measure the output individually. Should a generator choose to meter the total of their generation, they will only be able to receive the lowest tariff from their multiple technologies.

Energy efficiency

3.45 Given that the introduction of FITs will incentivise the rollout of electricity generating technologies to households, communities and small and medium enterprises (SMEs), we have considered the arguments for using it as a vehicle to introduce and improve energy efficiency measures at those premises.

3.46 There is also some logic to linking a potentially large rollout of FITs to greater energy efficiency measures. However, on balance it appears that this would add more complexity to the system. In addition, since the most important energy efficiency measures are primarily aimed at saving heat rather than electricity, the potential costs of incorporating such measures into the FITs scheme would be better spent elsewhere.

3.47 Energy efficiency is being tackled more directly as part of the Heat and Energy Saving Strategy through mechanisms such as the Carbon Emissions Reduction Target (CERT), the post CERT supplier obligation and the Community Energy Saving Programme (CESP). Furthermore, as announced in the Heat and Energy Saving Strategy. Consultation document, from 2013 Government will adopt a whole house approach to these measures.

3.48 Therefore, taking energy efficiency measures will not be a pre-requisite for the payment of FITs, nor are higher tariffs being provided to those who have taken energy efficiency measures.

3.49 However, we recognise that the installation of generating equipment and the tariff payment process could be used as a route to better information provision (e.g. applicants would be provided with wider energy efficiency information when installing their generation equipment).

Q44. Do you agree that the FITs should not require on-site generators to comply with any energy efficiency standards as a condition for eligibility?

Q45. Are there any issues regarding eligibility that we have not foreseen here? If so, how should we address them?

Getting the tariff

3.50 This section sets out our vision of how FITs will work for prospective generators – from the decision to get involved in FITs, through development, accreditation, finding a supplier, payments and consumer protection.

3.51 Our objective is that systems will be straightforward and user-friendly – this is one of the main reasons for introducing FITs. However, because we are committed to getting the scheme up and running quickly we will need to make use of many of the existing arrangements that apply to the RO. We intend to make maximum use of existing suppliers' systems and schemes (such as the billing system) to avoid duplication of regulatory and other arrangements. In the future we will refine and simplify systems further.

3.52 We are currently working closely with key stakeholders, including Ofgem, on the specification and development in detail of systems to implement the procedures outlined here. These will be subject to further discussion as the detail of the scheme is put in place over the coming months.

FITs and Renewables Obligation

3.53 We propose that new (from 1 April 2010) installations with installed capacity of 50kW and below that are eligible for FITs will only get the option of receiving FITs. However, we propose that larger installations – with installed capacity of 50kW to 5MW – will have the right to choose between the RO and FITs. This will provide investors with an opportunity to select the scheme which best suits their requirements for the lifetime of the project. Generators will only be able to choose once, before they start receiving support under either RO or FITs. Allowing generators to change between the RO and FITs once they have started taking support under either scheme could undermine the integrity of both schemes, would be more complex to administer, and could encourage opportunistic switching to maximise returns depending on which system might offer a higher reward at any time. This would not constitute value for money for consumers.

3.54 For information on installations existing before 1 April 2010 please see the Transitional Arrangements section of this document.

Finance

3.55 FITs provide regular payments over a number of years. For most eligible energy installations, however, most of the cost is concentrated in the up-front price of the generating equipment and its installation. Our modelling shows that the tariffs we are proposing will provide levels of reward which should be sufficient to make financing FITs installations a viable market proposition. As a result, we expect the market will provide the necessary loans or other finance packages to drive the uptake of small-scale technologies.

3.56 In the 2008 consultation on the Renewable Energy Strategy we sought views on whether FITs should include some up-front capitalisation of funding. Responses on this issue were mixed. Subsequent discussions with trade associations, manufacturing companies, electricity suppliers and financial companies and consumers have also confirmed a variety of views. Some organisations have seen easy access to up-front, low-cost capital as essential to the uptake of the technologies; others are of the view that tariffs themselves will be sufficient to drive the financial market to develop products in this area and provide the necessary capital,[28] and would be discouraged by government intervention in this area.

3.57 Therefore, we propose that central Government will not be looking to provide up-front capital schemes to finance FITs installations in the majority of cases. This does not preclude local authorities from offering such schemes at a local level. Consideration of finance options will also be included in other Government policy initiatives e.g. HESS, fuel poverty.

Q46. Do you agree with our approach not to offer up-front capitalisation to schemes as part of the FITs? If not, what alternative approach do you propose and why?

Ownership of installations

3.58 In general, generating equipment that will be eligible for FITs will be purchased by an individual or organisation who will then receive the benefits of that generating equipment and the FITs payments. It will be up to landlords and tenants of domestic or commercial property to come to an arrangement about the receipt of payments and on-site electricity use benefits through bilateral agreements.

28 It is important to note that this is primarily a discussion about installations at the very small/domestic scale. We have not considered Government finance provision at the above 1MW scale as there is already a market for finance at that scale.

3.59 Given the length of FITs payments (15 to 25 years), there will be regular instances where the ownership of the property hosting the generating equipment on which FITs is paid changes. For example, it may be common for the ownership of domestic properties fitted with solar PV panels to change during the lifetime of the FITs payments. We expect standard property ownership rights to be applied to the ownership of the generating equipment. Therefore, the FITs payments, along with the generating equipment on which they are made, will be attached to the property. When ownership of that property changes we would expect the ownership of the generating equipment and FITs payments to also change and pass to the new owner of the property. It will be left to the market for the previous owner to be compensated for the remaining value of the FITs payments and on-site benefits (e.g. through a higher price paid for their property).

3.60 There are implications for suppliers of how a change in the ownership of a FITs installation is managed which are covered in the Supplier Issues section below.

Assigning rights

3.61 We propose that a generator may assign the rights to the FITs payments to someone else through a bilateral agreement. For example, an installer of the equipment may offer a householder a guaranteed income from the equipment under an arrangement whereby the installer rather than the householder will claim the FITs payments from the supplier. In such a scenario the installer may become an agent for the householder and take on any administrative burden on their behalf.

Q47. Do you agree with our approach that a generator may assign the rights to their FITs payments to a third party? If not what alternative approach do you propose and why?

Accreditation, registration and connection

3.62 We propose that there will be a central accreditation and registration system for FITs generators to ensure the integrity of payments and to minimise the burden on suppliers to undertake audits. We propose that a prospective generator that demonstrates that they comply with the eligibility criteria for the scheme will be entered into a centrally held register, and that this register will be used by suppliers to verify eligibility, to ensure that payments are made at the appropriate levels and to minimise the potential for abuse. The registry will include details of the site, technology and ownership in order to identify the generator unambiguously, assign the correct tariff and prevent double counting.

Small generators

3.63 For microgenerators and others where systems exist we intend to make maximum use of third-party certification to minimise the administrative and compliance burden. The Microgeneration Certification Scheme (MCS) is an independent certification scheme accredited by the United Kingdom Accreditation Service (UKAS), which assesses installer companies and products against robust standards. It enables the provision of accurate forecasts of energy outputs to generators as well as a level of consumer protection which meets the Office of Fair Trading requirements. In addition, MCS gives assurances about the likely quality, durability and performance of installations.

3.64 MCS, which is industry-led, is capable of providing independent assurance and legitimacy to small-scale onsite energy installations. As such, it is the basis for eligibility for grants under the Low Carbon Buildings Programme and CERT.

3.65 Given the establishment of the MCS as the only formalised industry standard in the UK based on European and international standards, and that it has been used as the basis of existing Government support programmes, it would be beneficial to continue to use it for installations up to the capacity limit to which it applies (currently 50kW). Therefore, we propose that the MCS or an equivalent scheme[29] has a role to play in the accreditation and registration of installations where that scheme applies.

Registering installations larger than 50kW

3.66 In order to maximise the use of existing systems and processes we propose, at least at the start-up of the scheme, to use the RO accreditation process for installations in the 50kW to 5MW capacity range. This will involve a more detailed accreditation process.

Connection issues

3.67 Prospective generators intending to receive FITs will need to ensure they have any necessary physical connections to the electricity distribution and transmission system and, if necessary, the right to export to the market. The transmission grid and distribution networks in Great Britain were built to transfer electricity from large power stations to industry, businesses and homes. The Renewable Energy Strategy describes the work that is being carried out on the transmission grid to facilitate a greater contribution from distributed energy to 2020 and beyond. In recent years, that grid infrastructure and how it is managed and regulated by Ofgem has been changing to accommodate different types and locations of electricity generation. This work is continuing through the current review of price

29 There are European schemes which also define product standards that may be applicable to FITs installations either in April 2010 or further into the future.

control arrangements for the electricity distribution system to cover the period 2010–2015.

Q48. Do you agree with the proposed model for registration and accreditation of plant claiming FITs discussed in the Accreditation, Registration and Connection section?

Metering

3.68 We propose that all generation is metered and FITs payments are made to generators on the basis of metered generation. An alternative would be to estimate how much an installation would generate according to the type and capacity of technology and where it was sited (this is known as deeming). However, we believe it is important that FITs payments are made on the basis of actual generation as this creates the right incentives for generators to keep their equipment fully operational throughout its lifetime. Accurate metering, even before the introduction of smart meters, can be implemented at reasonable cost. Furthermore, it provides an additional incentive to put generation equipment in sites where it will maximise generation and maintain those sites in optimum condition; poorly sited installations will generate less and receive lower revenues as a result.

3.69 There are up to three flows of electricity that need to be measured in order to make FITs work:

- The gross amount of electricity that is produced by the generator;
- The amount that is exported; and
- The amount that is imported.

3.70 All of these flows will need to be metered in accordance with the requirements of existing regulation. These are set out in the Electricity Act 1989 and subsequent legislation and regulations[30]. We do not propose to change any of these existing arrangements. This is because it would not be possible to do this by April 2010, and we do not want to disrupt the introduction of smart meters.

Smart meters

3.71 Government is aiming for a rollout of smart meters to the domestic sector to be completed by the end of 2020. A consultation on smart meters, including the high-level functionality requirements, was issued on 11 May 2009[31]. The technical

30 Schedule 7 of the Electricity Act 1989, The Meters (Approval of Pattern or Construction and Manner of Installation) Regulations 1998, The Meters (Certification) Regulations 1998, Measuring Instruments (Active Electrical Energy Meters) Regulations 2006, Balancing and Settlement Code

31 http://decc.gov.uk/en/content/cms/news/pn053/pn053.aspx

specifications for smart meters and the associated communication model will not be in place before the introduction of FITs. However, small-scale generation has been and will continue to be considered in the broad functionality design of smart meters, so once rolled out they will support the metering requirements of FITs installations and the reporting of that data.

Q49. Do you agree with the principle that all generation should be metered to qualify for FITs? Do you foresee any issues with that approach?

Finding a supplier and getting paid

3.72 The Energy Act 2008 provides that modifications to electricity supply and distribution licences will be the basis for the delivery of the FITs scheme. We propose that electricity suppliers will be responsible for paying FITs and in order to receive FITs, a prospective eligible generator will need to approach a supplier that provides FITs.

3.73 The issue of who would be required to offer FITs and in what circumstances could be regulated in various ways, for example:

- All suppliers could be obliged to offer FITs to all applicants;
- Suppliers could be obliged to offer FITs to all customers that they supply;
- Only certain suppliers (e.g. over the threshold discussed in the Supplier Issues section below) might be required to offer FITs to certain generators, e.g. off-grid generators; stand-alone generators; or generators supplied by non-licensed suppliers or suppliers that are not obliged to offer FITs; and
- Generators could have the right to switch both import and FITs supplier.

Q50. What are your views on regulating which suppliers should be required to offer FITs, and in what circumstances?

3.74 We propose that generators will advise their chosen supplier of their intention to receive FITs and give the supplier details of their registration. The generators will also need to advise the supplier whether they intend to opt out of the guaranteed export tariff. Once the FITs registration is verified, the supplier would notify the central registry that it will pay FITs for that installation.

3.75 We propose that it will be up to the suppliers paying FITs to decide their own procedures for paying generators. We propose that there be a protocol setting out minimum standards to ensure consistency and fairness for generators and prevent abuse by suppliers, as well as to ensure the functioning of the levelisation process. However, we do not want to impose unnecessary regulation or prevent suppliers from innovating and developing least-cost systems that suit them and

their customers. We also do not want to interfere with billing and customer relations between suppliers and their supply customers. We expect that metering and payments will ultimately be fully integrated into existing industry structures.

Consumer protection

3.76 If FITs are to lead to greater participation in electricity generation by households, communities and other non-expert generators, the systems, as well as being simple, need to deliver confidence to generators that their rights in the market will be protected and they will not be subject to exploitation.

3.77 We propose that the interests of generators – especially households – will be protected by a range of arrangements. These include systems that are specific to FITs and energy markets, as well as general competition and consumer legislation.

3.78 In the case of installation, we propose using the MCS to provide consumers with assurance about the quality of the product they are buying – that it will generate a certain amount under certain conditions and be operational for a certain length of time.

3.79 Through the licence conditions put in place to implement FITs we will also look to ensure that suppliers maintain minimum standards of consumer protection for FITs generators. We propose that these will include:

- An arbitration system covering disputes in administration of the scheme and with suppliers, and compliance with the rules of the scheme;
- Non-discrimination in terms of prices for imports and other charges (FITs customers should have access to all import tariffs and charging structures available to comparable non-FITs customers); and
- FITs customers' rights in regard to switching suppliers, ensuring that customer transfer arrangements between suppliers fully incorporate FITs customers without any detriment e.g. in timing, choice of suppliers, debt-blocking etc.

3.80 FITs generators will also be protected under standard consumer law and other frameworks e.g. Consumer Focus, and potentially the Energy Ombudsman.

Setting the tariffs

Approach

3.81 We intend to set tariffs at a level to encourage investment in small scale low-carbon generation that will make a contribution to meeting our renewable and carbon targets. However, is important to ensure value for money for the scheme as a whole, bearing in mind that the costs of support are shared by all electricity consumers. We also need to ensure compatibility with other policies, so we do

not want to create distortions in the market and perverse outcomes in regard to the potential overlaps between FITs and the RO and the forthcoming Renewable Heat Incentive (RHI).

3.82 Tariffs need to be set so that a reasonable return can be expected for appropriately sited technologies. However, the expectation of a guaranteed return on investment should not apply for all technologies at all scales and in all environments: for example, we want to encourage wind turbines at sites with good wind profiles and encourage orientation of solar PV panels to maximise their generation potential. It is important to note that investment decisions will be based on the total expected return, which will include the generation tariff, expected payments for exported electricity and the financial benefit of avoided electricity imports.

3.83 International experience has shown that the level of return does not have to be extremely high. The German parliamentarian, Hans-Josef Fell, credited for inventing and implementing the German legislation for their feed-in tariff (the Renewable Energy Sources Act, EEG), proposed a target return of 5-7% as "significantly higher returns were not desired because the extra costs to be passed on would push up the price of power too far. If returns were too low, this would lead to investments hardly being made any more."[32]

3.84 We therefore considered tariff levels that would provide a rate of return of approximately 5-8% for well sited installations, taking into account the risks associated with deploying the different technologies and the likely effect those risks would have on investors' willingness to invest. If particular technologies entail complex design and approvals such as planning permission, for example a rural mast mounted wind turbine, the return on investment may have to be higher than where permission is not required, or easier to obtain, for example with solar PV.

3.85 To ensure that the transition from feed-in tariffs beneath 5MW and the Renewables Obligation (RO) is smooth, so that developers at the margins of FITs are not inappropriately incentivised to downsize their projects to obtain support through FITs (particularly at larger project scales) we propose tariff levels that are equivalent to support available through the RO. We recognise that the tariffs we propose could in some cases benefit from an increased number of bands to further improve the transition between FITs and the RO and we welcome views and suggestions.

32 www.hans-josef-fell.de, "Feed-in Tariff for Renewable Energies: An effective stimulus package without new public borrowing", March 2009. www.boell.org/Pubs_read.cfm?read=193

Degression

3.86 Degression is where tariffs for new projects are reduced annually to reflect, and to some extent encourage, expected decreases in technology costs, and is a feature of international best practice. Degression applies only to new projects: existing projects remain on the tariffs that they have been previously assigned and are unaffected by degression. We propose degression rates in line with expected technology cost reductions for different technologies at different scales. This gives the technology supply chain industries an indication of the cost reductions that will need to be achieved so that the tariffs can still deliver a sufficient return to encourage investment from potential generators.

Other approaches to tariffs

3.87 An alternative to considering tariff setting from the perspective of the potential investor is to look at delivering a level of generation at "least cost". The Renewable Energy Strategy has put forward a lead scenario of small scale generation contributing 2%, or 8TWh, of renewable electricity by 2020. We could look at delivering this 8TWh through the most cost effective technologies available within the 5MW legislative boundary for FITs provided by the Energy Act 2008. Our modelling suggests that taking a least resource cost approach would not deliver at the household and community scale but would encourage primarily large generators i.e. close to 5MW wind, hydro, biomass and waste installations – similar in scale and technologies in the RO.

3.88 We are grateful to the Renewable Energy Association for their suggestion of terraced / tiered tariffs[33], where tariffs are higher in the early period of a generator's deployment. We particularly note the potential benefits of such a scheme in reducing risks of gaming around tariff bands: where there could be an incentive to downsize technologies to take advantage of higher tariffs at lower bands. However we are concerned that adoption of this innovative scheme, which has not been attempted in any other country that implements a feed-in tariff, would make the scheme too complex for potential generators to understand.

3.89 We have proposed fixed degression rates in this consultation, though are aware of other options, such as degression rates that fluctuate depending on capacity installed in any particular year.

33 Renewable Electricity and Heat tariffs, preliminary recommendations on their implementation from the renewable energy industry, www.r-e-a.net

Uplift for combined heat and power

3.90 As outlined in the section on cross-cutting issues, we propose that once the Renewable Heat Incentive is implemented, the heat output of CHP will be rewarded under the RHI. As an interim measure, initial FITs for CHP generators include an uplift comparable to that which applies under the RO.

FITs for non-renewable micro combined heat and power

3.91 The table of generation tariff levels does not include generation tariffs for non-renewable microCHP technologies. We intend to develop these tariffs over the coming months and announce them in the autumn.

3.92 As was debated during the passage of the Energy Act 2008 through Parliament, we recognise the important role that microCHP of various technologies could play in meeting our carbon objectives in the household and small business sector as part of comprehensive low carbon solutions for housing and other buildings. We consider that development of tariffs should be undertaken separately from other technologies – but still with the objective of introducing in April 2010. This is for the following reasons:

- MicroCHP technologies are the only technologies that FITs can support that are non-renewable: that is, they can generate heat and electricity from fossil fuels, generally natural gas. The assumptions and methodology used to develop FITs for renewable technologies do not apply.
- Unlike other technologies to be supported by FITs, domestic scale microCHP technologies are at an early stage of their development; these products are not yet available in commercial quantities. Industry estimates suggest that Stirling engine mircoCHP units may begin commercial roll out from 2010, with fuel cell microCHP technologies following in 2012 or 2013. Accordingly the cost forecasts and market growth capabilities from our own research and other sources are highly uncertain and we are therefore undertaking further work.
- Deployment of microCHP will generally be undertaken in response to an identified heat need. Accordingly we believe it is appropriate to consider its role in FITs alongside our other heat policies, most notably the Renewable Heat Incentive (RHI) and the wider heat and energy saving strategy (HESS).

3.93 We propose that domestic microCHP units will have access to the fixed export reward from their suppliers that will be offered across feed-in tariffs, and that work will proceed over the coming months to develop appropriate generation tariffs.

Initial proposed generation tariff levels

Generation tariff levels

Table of generation tariffs for first year of FITs (2010-11)

Technology	Scale	Proposed initial tariff (p/kWh)	Annual degression (%)
Anaerobic digestion	Electricity only	9	0
Anaerobic digestion	CHP	11.5	0
Biomass	<50kW	9	0
Biomass	50kW-5MW	4.5	0
Biomass	CHP	9	0
Hydro	<10kW	17.0	0
Hydro	10–100kW	12.0	0
Hydro	100kW–1MW	8.5	0
Hydro	1-5MW	4.5	0
PV	<4kW (new build)	31.0	7
PV	<4kW (retrofit)	36.5	7
PV	4-10kW	31.0	7
PV	10–100kW	28.0	7
PV	100kW–5MW	26.0	7
PV	Stand alone system	26.0	7
Wind	<1.5kW	30.5	4
Wind	1.5–15kW	23.0	3
Wind	15–50kW	20.5	3
Wind	50–250kW	18.0	0
Wind	250–500kW	16.0	0
Wind	500kW–5MW	4.5	0
Existing microgenerators transferred from RO[34]		9	N/A

Tariff lifetimes

3.94 We propose that tariffs will be paid for 20 years for new projects*. We recognise though that some technologies may have lifetimes that are shorter than this period, and that there may be advantages to providing shorter tariff lifetimes.

* 25 years for PV

34 See Section 4 of this document.

Export price

3.95 As discussed above we are looking to implement a tariff scheme where there is a tariff for all electricity generated and the value of exported electricity is fixed for the generator. Various options exist for considering what the fixed export price should be, but the range is considered to be between the minimum price paid for unplanned exports to the electricity system (the "spill price") and the retail price. We will continue discussions through the consultation period on what the fixed export price should be and the level will be reflected in final tariffs. The generation tariffs in this document have been developed based on an assumed guaranteed export price of 5p/kWh. Final tariff proposals will be adjusted accordingly.

Reviews

3.96 We want to provide certainty in the FITs mechanism going forward but recognise that it will be important to review and adapt it as circumstances change including technology costs and supply chains. Therefore, we propose having a programme of reviews after which it will be possible to make changes to FITs.

3.97 Reviews should take into account other policy developments. For example the recent Heat and Energy Saving Strategy Consultation recognises that in the longer-term Government may need to assess whether the current model for delivering household energy efficiency will be fit for purpose and if alternative frameworks could better meet these needs, including coordinating delivery through a central body. When conducting reviews of our financial incentives we will draw on these developments to ensure a coordinated approach where possible.

3.98 There are three potential approaches to reviewing support levels across schemes (or a mixture of two or more):

- Early reviews (based on a significant change in technology costs or other agreed criteria);
- Periodic reviews of pre-defined periods; and
- Tariff reviews on the achievement of specific milestones (e.g. when a pre-determined amount of renewable energy capacity has been achieved).

3.99 A policy framework with long periodic revisions will generally lead to higher investment security for the supply chain than one with short periodic reviews. We need to strike the right balance between flexibility and investment security. It is also important to note that we have only a relatively short time horizon to 2020.

3.100 It is also important that we recognise the effect that the expectation of revisions could have on the uptake of renewable energy technologies. In particular, if investors believe there is a reasonable chance that support could be reduced when considering whether or not to make an initial investment, potential investors may prefer not to undertake that project. Conversely, if investors believe that support levels could rise when considering an investment this may give them an incentive to wait until the higher support level is in place. These considerations led us to suggest the following principles:

- Existing projects will receive the same level of support throughout their participation in FITs (i.e. support will be grandfathered); and
- As costs of technologies fall, we expect that levels of support for new projects will reflect that. Project costs will be considered as part of reviews.

3.101 We propose to conduct periodic reviews of FITs with their timing to coincide with the Renewables Obligation banding reviews taking into account the above factors and affordability. Therefore, any changes to the scheme resulting from the first major review of FITs would be implemented in 2013, alongside any changes required to the RO following the proposed RO banding review, with a set programme of reviews thereafter. In the interim, the degression rates that we set when the scheme is launched would apply annually.

3.102 We propose, if necessary, to use early reviews to consider any significant changes to the fundamentals affecting the operation of the scheme outside of the periodic review timetable. This approach is similar to the approach to early banding reviews under the RO.

Q51. Do you agree with the tariff levels, lifetimes and degression rates we have set out for the chosen technologies? If not, what evidence do you have for choosing alternatives?

Q52. Do you agree with our proposed guaranteed minimum price for the exported electricity? If not, what price would you propose and what is your proposal based on?

Q53. Does the proposed review structure provide the right balance between providing certainty and adapting FITs to the changing circumstances in which it operates?

Providing FITs to those on low incomes

3.103 As stated in the RES, we are keen to ensure that FITs can be taken up by everyone. Households in fuel poverty and those on low incomes will be less likely to have access to the upfront capital needed. We expect however that local authority, community projects and social landlords will be potential beneficiaries of FITs.

3.104 As mentioned in the Reviews section above we will want to take into account other policies being developed, such as access to whole house financing options which may include FITs payments. However, this issue will not be addressed in the initial FIT structure from April 2010. This is for the following reasons:

- Fuel poverty is more often associated with the burden of high heating costs than with electricity. Helping to address this issue is relevant for the introduction of FITs, but even more so for the introduction of the Renewable Heat Incentive (RHI) from 2011 and we are considering this issue in connection with the Renewable Heat Incentive.
- Our thinking on this area is at an early stage, and we would not be able to design and consult on policy options for implementation with FITs by April 2010.
- Before taking a decision on any such options within either FITs or the RHI, we will need to consider the interaction with other existing and potential policy options for fighting fuel poverty, to assess whether FITs and RHI are the best way of addressing this issue.

Q54. Do you have any initial views on the relationship between FITs and those in fuel poverty or on low incomes?

Supplier issues

Coverage of suppliers

3.105 We propose that suppliers will be the key players in the delivery of FITs, and in general should be required by licence conditions to offer FITs to their customers. However, given there are potential short term cash flow implications of paying FITs, we do not think it is appropriate that we mandate smaller licensed electricity suppliers to have to bear that potential burden. Therefore, we propose that suppliers who have a minimum of 50,000[35] domestic customers will be obliged through their electricity supply licence to pay FITs.

35 This threshold is consistent with the Carbon Emissions Reduction Target (CERT) as stipulated in the Electricity and Gas (Carbon Emissions Reduction) Order 2008. Currently this will apply to the 'Big 6' electricity suppliers (Centrica, EdF, EON, RWE Npower, Scottish Power and Scottish and Southern)

3.106 Licensed electricity suppliers below the threshold who are not mandated to but choose to offer tariffs will be able to pay FITs, as we want to involve the widest range of suppliers in the scheme. We expect that some small suppliers, who can be a source of innovation in the market and many of whom already have strong green credentials, will want to take part in the FITs scheme. However we do not want to create unnecessary burdens on small specialist suppliers who may not be interested in participating; or for FITs to act as a barrier to entry for small suppliers or affect the expansion of their market share.

3.107 We recognise the potentially disproportionate effect of cash flow issues and the levelisation mechanism on small suppliers and will look to put in place measures to mitigate these effects.

3.108 All licensed suppliers will however be required to make their fair contribution to the cost of the scheme through participation in the levelisation process so that all electricity consumers can make a contribution to the development of small-scale low carbon electricity.

Levelisation

3.109 As a principle, we propose that FITs payments should be borne by all licensed suppliers in proportion to their share of the UK electricity supply market. Broadly speaking, this means that relative to their market share suppliers who pay out a large amount on FITs are recompensed for part of that expense by suppliers who spend less on FITs payments.

3.110 The levelisation process will work such that each supplier paying FITs will report on the following:

- Details of amounts they have paid out (per specified period) on the FITs generation tariffs; this will be the total amount they have paid out on FITs minus the amount they have recouped from the sale of exports;
- Details of allowable FITs customer service charges; and
- Details of total supply; this will be based on information readily available e.g. that provided under the RO.

3.111 Once each supplier has declared their supply data and the permitted FITs payments and costs, it will be possible to establish the relative positions for each of the suppliers whereby they will either owe or be owed money. The specified payments would be expected to be made within a defined period.

3.112 As with current billing processes we propose that payments to generators are made on a quarterly basis. This suggests that the levelisation process should also happen on a quarterly basis. In future, as generation volumes from FITs installations increase, it may be necessary to move to more frequent payment and levelisation.

3.113 Based on the information provided through the registration process it will be possible to produce estimates of how much each supplier will be paying out in FITs. These estimates are likely to improve with experience and more accurate profiling. Therefore, initially the quarterly levelisation process may be based on estimates with an annual settlement of funds based on actual figures.

Q55. Do you agree that the levelisation process described above provides the best system for redistributing costs amongst suppliers? If not, what other ways can we levelise costs across suppliers?

3.114 We are aware that for some small suppliers the levelisation process raises some issues. For example a small supplier may not have access to sufficient cash flow to make FIT payments in advance of the levelisation process. We could address this by completing the levelisation process before payments are made to generators. However this would mean that a generator would not receive payment at the end of a claim period, but have to wait until the levelisation process has taken place.

Q56. How can the levelisation process facilitate participation in FITs for small suppliers?

Costs to suppliers of providing FITs

3.115 In developing FITs we are mindful of the effects that they will have on the electricity supply market, both for suppliers participating in the scheme and for those below the threshold that choose not to participate.

3.116 Administration of FITs will impose certain direct costs on suppliers that issue them.

3.117 The costs of verification and administration of payments as well as the cost of participating in the broader levelisation scheme represent a direct cost to suppliers. In most cases suppliers will have a relationship with the FITs generator so it may be expected that many of these costs represent marginal increases over existing costs to supply (metering, billing etc) and suppliers will be able to recoup these costs from the customer, or spread them over their customer base.

3.118 However, requiring suppliers to cover these costs without compensation could discourage individual suppliers from participating fully in the scheme and seeking out new generators, particularly those with no onsite electricity use. It could potentially disadvantage the non-FITs customers of suppliers where their supplier has an above average number of FITs customers. Further, it is inequitable.

3.119 A number of suppliers have also raised the fact that many of the costs of serving customers are largely fixed e.g. billing and metering costs, customer service

infrastructure, certain system charges, regulatory overheads such as CERT and CESP, and shared costs of providing security of supply. It has been stated that this could lead in the future to pressure on suppliers to change pricing structures e.g. by more widespread use of high standing charges or steeply declining block tariffs.

3.120 We therefore propose that an allowance for overhead costs should be allowed for suppliers in the levelisation process to cover unavoidable costs of administering FITs (see 3.107). This could be calculated on a per customer basis, or some other means e.g. capped for large suppliers.

Q57. Should suppliers be able to include an administration cost in the levelisation process? If so, what should the level of that allowance be and how should it be determined?

3.121 We are also seeking views on whether there are any further impacts on suppliers that should be recognised in the levelisation process.

3.122 We propose that FITs will include a requirement on suppliers to buy the electricity exported from FITs generators. We propose that the amount paid as an export tariff will reflect the value to suppliers of this electricity. We would expect that, on the whole, suppliers will realise this value by selling on to other customers or in the wholesale market. There would therefore be no reason to include the cost of acquiring this electricity in the levelisation process. This would also provide an incentive to suppliers to maximise the value of this electricity, and potentially derive an additional benefit.

3.123 However we recognise that there may be additional costs – or in some cases benefits – that arise because of unforeseen and large differences between the prices paid to generators and the market value of that generation e.g. the cost of registering small quantities of generation in settlements, unforeseen system charges, or excessive market fluctuations in the value of electricity due to fossil fuel costs etc. It may be justified to include some allowance for these differences in the levelisation process. If so, we propose that this could be subject to regular review. It should be noted that these reviews would not affect payments to generators.

Q58. Should the levelisation process include consideration of large and unforeseen price differences between prices paid to generators and the market value?

Auditing, assurance and enforcement

3.124 The organisations involved in the delivery and administration of FITs (the licensed electricity suppliers, Ofgem, Elexon and, through the MCS, Gemserv) have existing governance, audit and assurance procedures in place, some of which will be suitable for use on FITs.

3.125 Therefore, as a general principle, where existing procedures exist, such as those used for the RO, we will look to use these audit and assurance procedures. We will work with the relevant organisations to ensure that the powers and procedures in place provide the assurance we need to help achieve the following:

- Only eligible and accredited installations claim FITs;
- FITs installations only receive the tariff for which they are eligible;
- Information provided by generators is accurate and there are suitable checks in place to prevent fraud; and
- Information provided by suppliers as part of the levelisation process is accurate and timely.

3.126 The procedures in place to achieve these objectives are to include automated checks, and ad hoc and scheduled audits and assessments.

3.127 However, while using existing procedures where possible we also want to keep FITs simple. Therefore, we will be encouraging a risk-based approach to audit and assurance where the procedures used are proportionate to the potential material impact of fraud and misinformation.

3.128 As FITs will be implemented by the supply licence condition, the provisions will be a "relevant condition" under the Electricity Act 1989. If the suppliers do not comply with the requirements of the scheme it will be an enforcement matter for the Gas and Electricity Markets Authority.

Q59. Do you agree with the proposed approach to auditing, assurance and enforcement? If not, what alternative approach do you propose and why?

Q60. Are there any issues regarding the role of suppliers that we have not foreseen here? If so, how should we address them?

Technical and Administrative issues

Implementation

3.129 As allowed for by the provisions of the Energy Act 2008 (s. 41–43), we propose that the FITs scheme will be implemented by amendments to standard conditions of supply and distribution licences under section 6(1)(c) or (d) of the Electricity Act 1989. We propose that electricity suppliers will be central to delivery of the scheme and will be responsible for making FITs payments.

3.130 As provided in the Energy Act 2008, we propose that Ofgem will have a central role in the scheme. We propose that any additional functions in connection with the administration of the FIT scheme will be conferred upon Ofgem by an Order made under the Act.

3.131 We will be working closely with Ofgem, suppliers and other industry participants to ensure that the details of the systems are put in place to meet the planned start date of 1 April 2010.

Definition of an installation/site

3.132 Given that the Energy Act 2008 places a total capacity limit on individual FITs installations, and that we propose that tariffs will be banded by technology and installed capacity, we need to establish how an individual installation is defined in order to verify capacity limits per installation.

3.133 We aim to avoid creating perverse incentives such as under-sizing plants or registering two installations by splitting one installation artificially into two in order to benefit from FITs or a higher tariff within FITs (e.g. a 6MW wind farm split into two 3MW wind farms).

3.134 We believe that the structure and levels of FITs and their interaction with the RO will be such that the risks of this behaviour will be small. Nevertheless, we need to define what an installation is in order help prevent such instances occurring.

3.135 For the purpose of being eligible for FITs and qualifying for a tariff, we propose that a single installation will be defined as a single technology per single site. Therefore, the level of tariff will be determined by the total capacity of a site per type of technology. This means that if a generator installs two different technologies on a single site (e.g. a PV panel and a wind turbine) they will be classed as two different installations. However, if the generator has multiple wind turbines they will be classed as a single site when determining the tariff.

3.136 By defining an installation in this way we are aiming to prevent, for example, a situation where ten 250kW wind turbines on a single site are classed as ten separate installations rather than one 2.5MW installation.

3.137 A single site could be defined as a single address or through a single planning application for the purposes of establishing the aggregate capacity. Site capacity will be declared as part of the accreditation process with subsequent checks and audits in place to verify these are accurate.

Installations over multiple years

3.138 There are likely to be instances where generators increase the size of their installation over time. For example, they may install one wind turbine in year 1 of FITs and install another wind turbine in year 2 on the same site, increasing the total capacity incrementally over a number of years. This creates issues with how the total capacity of the site is treated for the purposes of tariff banding and how degression is applied to the newly added generation on the site.

Q61. What do you think is the best way of defining an installation for the purposes of FITs?

Q62. Once an installation is defined, do you think further checks are required to verify this? If so, what would these checks be?

Q63. How could we deal with installations at a single site installed in different years?

Tax issues

3.139 Sections 20 and 21 of the Finance Act 2007[36] set out the current income tax exemptions for domestic microgeneration in respect of the sale of electricity and the income from ROCs.

3.140 The treatment of FITs with regard to tax is a matter for the consideration of HM Treasury.

Eligibility for other schemes

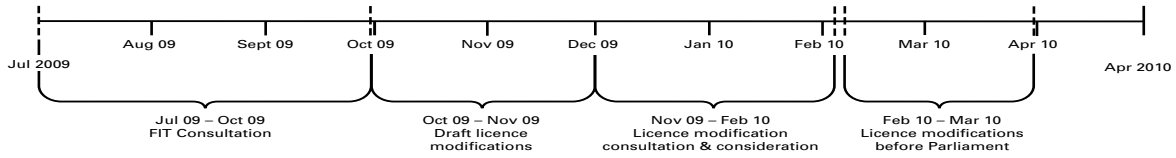
3.141 Renewable and eligible CHP generation in receipt of FITs will continue to be eligible for exemption from the Climate Change Levy and for the issue of Renewable Energy and CHP Guarantees of Origin. We will be discussing with Ofgem over the coming months how these can be administered within the FITs framework.

36 www.opsi.gov.uk/acts/acts2007/pdf/ukpga_20070011_en.pdf

Next steps for FIT development

3.142 The timetable for moving forward is tight as we have undertaken to get FITs up and running by April 2010. Key milestones will include:

- Consultation on the form of the proposed electricity licence amendments; and
- Laying in Parliament of the proposed electricity licence amendments and associated legislation.



3.143 In the coming months – including the three months that this consultation is open – we will continue to undertake analysis and develop policy and to work with key stakeholders including consumer groups; generators; manufacturers and installers of generation equipment; Ofgem; and suppliers and others that may be involved in the administration of the scheme.

3.144 During the consultation period there will also be formal opportunities for all stakeholders to put their views forward at specific events (see annex 3).

Section 4:

Cross Cutting

Transitional Arrangements

Introduction

4.1 The introduction of the Feed-in Tariffs (FITs) scheme for small-scale electricity generation up to a maximum of 5MW will provide an alternative support mechanism for certain categories of generator that would previously have been eligible for support under the RO. This section details our proposals and decisions for the interaction between the two schemes at this level of generating capacity. It also sets out how installations built between the date of this publication and the start-up date of the FITs will be treated. The arrangements we are proposing differ according to the capacity of the generating station and the date of installation. Generating stations above the maximum capacity supported by the FITs scheme will not be affected by its introduction. The following table summarises our proposals and decisions on these issues with details set out further below.

	<50kW	50kW – FIT Max	>FIT Max
Installations accredited under the RO before publication of the RES	Automatic transfer to FITs	Remain in the RO	Remain in the RO
Installations completed during the interim period	FITs from Introduction	One-Off Choice of FITs or RO	Remain in the RO
Installations completed after FITs become operational	FITs	One-Off Choice of FITs or RO	Remain in the RO

Key
Stations that apply for accreditation under the RO during the interim period would be automatically transferred to FITs with a reduction in the lifetime of support. See 4.11 for further details.
Choice only possible until December 2010. Unless FIT option is explicitly taken generator will remain in the RO. See 4.15 for further details.

4.2 As set out in paragraph 3.38 of this consultation, we propose to offer tariffs from the start to the following technologies, which we believe are the technologies available for domestic and small-scale generation in the short term:

- Wind;
- Solar PV;
- Hydro;
- Anaerobic digestion;
- Biomass and biomass CHP; and
- Non-renewable microCHP.

Generating stations that are not covered by this list will not initially be affected by the introduction of the FITs, and will therefore continue to be eligible for support under the RO.

Generating stations already accredited under the RO

4.3 For existing generating stations that have applied for accreditation under the RO before the publication of the Renewable Energy Strategy (15 July 2009), we are proposing the following approach:

Microgenerators (50kW and under declared net capacity)

4.4 In order to improve simplicity both for generators and for the administration of the schemes we propose that all eligible microgenerators that have applied for (and subsequently been granted) accreditation under the RO before the publication of the Renewable Energy Strategy on 15 July 2009 will automatically transfer from the RO to FITs. This will be a mandatory transfer, carried out by Ofgem with effect from the date the FITs scheme becomes operational.

4.5 The exception to this arrangement will be where a contract is in force between a microgenerator and an agent under the RO, which cannot be terminated before April 2010 without incurring a penalty. In this case, a request can be submitted to Ofgem to postpone the transfer to FITs. Ofgem will grant such a postponement if the move with effect from April 2010 would lead to a loss to either party (for instance as a result of contractual payments due beyond April 2010, or a loss of revenue). The switch to FITs would then take effect as of the end of the RO obligation period following either the earliest penalty-free termination date of the contract or consent to switch from all parties.

4.6 Once these microgenerators have transferred to FITs, they will receive a generation tariff set at an approximately equivalent level to the value of their previous ROC band. In addition they will have access to the export tariff and the offsetting benefit as applicable for all installations in the FITs scheme (see the Initial Proposed Generation Tariff Levels section above for a table of proposed tariff levels). They will receive support under the FITs until 2027 (i.e. the same end date for support as the current end date of the RO).

4.7 Where installations have received any grants before 15 July 2009 this does not change the above approach.

Small generators (above 50kW and below maximum level of FITs)

4.8 Generators eligible for FITs that are already accredited under the RO and are not microgenerators will remain in the RO, without the option to transfer to FITs. At this scale the RO can be a more appropriate support mechanism than it is for microgenerators, and the admin burden on Ofgem is not disproportionate.

Allowing small generators to transfer to the FITs would incur additional costs and risk disrupting the market.

Existing generating stations not already accredited under the RO

4.9 Generating stations that had become operational before the publication of the RES (15 July 2009) but that had not applied for accreditation under the RO before this date will not be eligible for FITs. We do not believe it would be justified to provide subsidies to installations which are already operating without support.

Q64. Do you agree with the proposed approach for the treatment of existing generating stations?

Generating stations installed during the interim period

4.10 As we announced in the Renewable Energy Strategy, any generating stations eligible for FITs where installation is completed after the publication date of the RES (15 July 2009) and before the start of the FITs scheme (the 'interim period') will be able to benefit from FITs as if the installation had been completed on the start-up date of the scheme, i.e. at the same tariff level and (subject to the below exception) for the same support period, from the FITs start date (subject to complying with the registration requirements).

Microgenerators (50kW and under declared net capacity)

4.11 We propose that for any eligible microgenerators that apply for accreditation under the RO during the interim period, the following arrangements will apply:

4.12 It will be mandatory for these generators to switch to FITs, and an automatic transfer from the RO will be carried out by Ofgem with effect from the date the FITs scheme becomes operational. These generators will, as above, be moved to the tariff they would have received had they started generating on the first day of FITs. However, in this case we propose to shorten the support period to account for the fact that they will already have received ROCs. We propose to apply a standard reduction of six months' support (regardless of the actual period of ROC support) in order to reduce the burden of administration.

4.13 In this instance, the switch will take effect regardless of any contracts in place with agents under the RO, since we would expect generators and agents to ensure that any such agreements entered into after publication of this consultation are compatible with the proposals it contains. Note that, as set out below, we propose that from the date the FITs scheme becomes operational, new installations below 50kW eligible for FITs will no longer be eligible for ROCs.

Small generators (above 50kW and below maximum level of FITs)

4.14 Small generators that applied for accreditation under the RO during the interim period will be given a one-off choice to switch to FITs. Unless they exercise this option, they will remain in the RO. To switch to FITs, they will have to notify Ofgem of this choice. They can do this at any time until the end of December 2010. A choice notified by the end of December 2009 will result in a switch effective as of the start date of FITs. A choice notified during 2010 will result in a switch effective from the end of March 2011 (i.e. the end of the 2010-11 obligation period). Where such a switch takes place, we propose, as above, to make a deduction from the FITs support period. If the choice is notified to Ofgem during 2009, we propose to apply a standard reduction of six months' support; if the choice is notified during 2010, we propose to deduct 18 months' support.

Q65. Do you agree with the proposed approach for the treatment of generating stations that completed installation during the interim period?

4.15 As we announced in the Renewable Energy Strategy, the transitional arrangements set out above will also apply for householders[37] if the electricity installation in question receives a central Government grant (such as under the Low Carbon Buildings Programme). However, for recipients other than householders we propose to require such grants (e.g. grants made through the Bio-energy Capital Grants Scheme) to be paid back in order to receive support through the FITs. Grants other than central Government grants will not affect eligibility for FITs.

Q66. Do you agree that, for non-household installations built during the interim period, we should make access to FITs conditional upon repayment of any central Government grant received for such installations?

New generating stations

4.16 For new generating stations that have not applied for accreditation under the RO before the date on which the FITs scheme becomes operational, we propose the following arrangements.

Microgenerators (50kW and under declared net capacity)

4.17 As of the date the FITs scheme becomes operational, generators up to 50kW who would be eligible to receive support through the FITs will no longer be able to apply for accreditation under the RO. Microgenerators whose technology will not be offered support through the FITs will still be eligible to apply for accreditation under the RO.

37 Properties as defined in Section 3 of the Low Carbon Building Programme Terms and Conditions www.lcbp.org.uk/uploads/documents/lcbp/LCBP%20Householders%20Conditions%20of%20Grant%20ST1Hv7.pdf

Small generators (above 50kW and below maximum level of FITs)

4.18 Generators above 50kW will continue to have a one-off choice between applying for accreditation under the RO or opting to receive support through FITs, since we do not want to preclude generators at this scale from joining the RO. As stations approach the capacity limit of the FITs, the rewards for certain generators may be higher under the RO than the FITs. In addition, generators with a portfolio of stations may prefer to deal with a single scheme.

4.19 The exception to this will be stations built under existing NFFO (Non-Fossil Fuel Obligation) contracts. In order to minimise the administrative burden, we propose that these stations would only be eligible to receive support through the RO once their NFFO contract expires, and would not be eligible to apply for support through the FITs.

Q67. Do you agree with the proposed approach for the treatment of new generating stations once the FITs scheme becomes operational?

CHP: Overlap between RO, RHI and FITs

4.20 Since April 2009 the RO has provided an uplift in support for renewable CHP. In most cases, the RO grants an additional 0.5 ROCs for each megawatt-hour of Good Quality electricity produced from a renewable CHP plant over that generated by an electricity-only plant using the same technology. This effectively provides direct support for the heat output of these plants in the absence of any direct support for the heat. The aim of this uplift support is to ensure that opportunities for increasing the overall efficiency of renewable generation plant by using the heat output are not foregone in order to maximise ROC revenue. There is evidence that the uplift has led to an increase in projects under development. This uplift will also be reflected in the proposed FITs tariffs from April 2010.

4.21 It has been foreshadowed that the treatment of CHP stations may change once the RHI is introduced. Now that the decision has been made to implement the RHI, we are considering options for decoupling support for heat and electricity for new CHP plants. This could be achieved by:

- Retaining the RO uplift for CHP plants and providing further support under the RHI if minimum standards are exceeded; or
- Removing the RO uplift for CHP and applying a per-MWh support rate for heat output under the RHI (this could be a CHP-specific rate or the same level of support provided for heat-only plants using the same fuels).

4.22 Separating out support for renewable CHP into discrete instruments for heat and electricity would provide greater policy clarity. More importantly, it could potentially provide a stronger incentive to operators to increase use of the heat

output beyond minimum standards. This increase in overall efficiency would lead to greater renewable output and progress towards renewables targets, as well as energy and CO_2 savings. At the moment, because the basis of the incentive is electricity, operators will tend to produce only the minimum amount of heat consistent with meeting the standards for Good Quality renewable CHP. We are currently seeking confirmation from industry and through our own consultants that these potential savings could be realised.

4.23 There are a number of issues that need to be considered in moving towards separate support for heat and electricity output under the RHI, the RO and FITs. These include potential administrative and compliance costs and consistency with European law such as the Cogeneration Directive.

4.24 Subject to confirmation of existing analysis and further exploration of technical, legal, and cost issues, we propose that the transitional arrangements for CHP will broadly follow the arrangements detailed further above in this section. Following feedback from this consultation, we will consult in more detail in the RHI consultation later this year.

Q68. Do you agree with the decoupling of support for heat and electricity for new renewable CHP plants? What are the technical issues that need to be considered in implementing transitional arrangements towards the introduction of FITs and RHI for CHP installations?

Interaction with other policies

4.25 FITs aim to increase renewables deployment. Some other policies can have an impact on renewables deployment as well – mainly policies that have introduced or will introduce carbon reduction or similar obligations. An example of an existing scheme of this type is the Carbon Emissions Reduction Target. Other schemes, such as Zero Carbon Homes, are currently being developed.

4.26 We do not intend for FITs to make any special provisions for such schemes. This would mean that those targeted by other schemes or obligations will have the same access to FITs as anyone else. However, we may put in place limitations in those other schemes. This will mainly be the case where such other schemes are aimed at supporting non-renewable low-carbon solutions (mainly energy efficiency). We want to avoid the situation where eligibility for FITs would result in the diversion of effort away from the primary objectives of a scheme (energy efficiency) in favour of supported renewables. See Box 3 below for details on a range of affected schemes. Such restrictions (including consultation thereon) are dealt with as part of the decision-making process for those schemes, outside the implementation process for FITs.

Q69. Do you agree that FITs should not restrict access for those projects covered by other schemes?

Box 3 – Overlaps with other policies

- **Zero Carbon Homes (as well as other building regulations requirements).** Under this policy, all new homes in England have to comply with zero carbon standards from 2016; in the interim, building regulation standards for new homes are being tightened step-by-step. The policy will mandate a high level of energy efficiency as part of a zero carbon home, but we intend that certain on-site renewables will be able to count towards the zero carbon standard.
- **Carbon Reduction Commitment.** The CRC will drive behaviour and infrastructure change in large non energy intensive business organisations (such as large supermarkets) and public sector organisations to reduce their carbon emissions. This scheme largely aims to bring forward energy efficiency improvements.
- **Voluntary Reporting Guidance.** Guidance for organisations on how to measure and report their greenhouse gas emissions, including where they are reducing their carbon emissions through use of renewable energy. We are currently consulting on this.[38]
- **Carbon Emissions Reduction Target.** This scheme mandates that energy suppliers have to deliver measures to provide carbon dioxide savings in domestic properties. It is largely aimed at bringing forward energy efficiency solutions.
- **Community Energy Saving Programme.** Under this scheme, energy companies must deliver low-carbon measures in a "whole-house" approach to homes in low-income communities. Suppliers can deliver measures from a prescribed list, including some renewables as well as other low-carbon solutions, to fulfil the obligation.
- **"Merton rules" (and other planning consent restrictions).** Local authorities may require a certain level of renewables in building developments as a precondition for obtaining planning consent. It will be up to local authorities to decide whether supported renewables may be counted in fulfilment of such conditions.

38 www.defra.gov.uk/corporate/consult/greenhouse-gas/index.htm

Annexes

Annex 1: List of questions

Renewables Obligation

Q1. Do you agree that, at this point, no extension beyond 2037 is required?

Q2. Do you agree that the criterion for treating projects under either the old 2027 end date or the new 2037 end date should be accreditation before or after 26 June 2008? If not, what should the criterion be and why?

Q3. Do you agree that additional capacity or plant that is refurbished or replaced should be entitled to the full 20 years of support, regardless of when the original capacity started to receive support?

Q4. Do you agree with the proposal to increase headroom to 10% by 2014?

Q5. Do you agree that the proposed series of 0.5% annual increases in headroom over the time period set out is the best approach to implementing any increase?

Q6. Do you agree a wholesale price stabilisation mechanism would bring benefits to renewable generators by providing a predictable and adequate level of compensation?

Q7. Do you believe that these benefits can be realised in practice? In particular, during periods of high fossil fuel prices, would suppliers pass the benefits on to consumers?

Q8. Do you agree that a revenue stabilisation mechanism could help us meet our target by encouraging more deployment?

Q9. What would be the best choice of wholesale power price index to adopt for use with any stabilisation mechanism and why?

Q10. What impact do you think a stabilisation mechanism would have upon the operation of the wholesale electricity market?

Q11. Do you envisage any other implementation challenges which might result from the introduction of a stabilisation mechanism? If so, how do you propose we deal with them?

Q12. Do you agree that this approach will minimise undesirable effects on market confidence whilst we consider the introduction of revenue stabilisation? If not, what further steps could we take to maintain confidence in the market?

Q13. Do you agree that a Contract for Difference option would be the best choice of wholesale price stabilisation mechanism? If not, what would you recommend as the best option and why?

Q14. Do you have any initial views on whether a stabilisation mechanism should remove wholesale price risk from generators altogether or leave them with some degree of risk, via a "cap and collar" mechanism?

Q15. Do you have any initial views on whether a stabilisation mechanism after 1 April 2013 should be optional or mandatory for generators under the RO?

Q16. Do you agree that biomass and generation involving co-firing should be excluded from any new stabilisation mechanism? If not, why not?

Q17. Considering the balance between the benefits and the implementation challenges, do you think we should introduce a wholesale price revenue stabilisation mechanism?

Q18. If you believe that a price stabilisation mechanism should be introduced for the wholesale power price, do you think that it should be applied to the ROC price as well?

Q19. Do you agree with the proposed conditions? Are there any more conditions we should consider?

Q20. Do you think we should set support levels for stations located outside the UK in line with those for UK-based generation?

Q21. Do you agree with our proposal to limit the eligibility for stations located outside the UK to those with a direct interconnection to the UK? If not, why?

Q22. Are there any other specific issues we should consider when implementing international trading in renewable electricity through the RO?

Q23. Do you have any comments on the Ernst & Young report on the current capital and operating costs for offshore wind projects? Is there any other evidence which we should take into account? If so, please provide details.

Q24. Do you agree with our proposed level of support for offshore wind, including our proposal to step down support from 2 ROCs/MWh to 1.75 ROCs/MWh over 2 years?

Q25. Do you agree the proposed eligibility criteria and cut-off date for offshore wind are appropriate?

Q26. Do you think the differential in ROC support between projects that signed just before the 2009 Budget announcement in the existing regime and projects which could become eligible for 2 ROCs will create an unfair advantage? If so, please provide evidence.

Q27. Do you agree that we should not impose a restriction on the use of tallow in the RO until clarity of the new marketplace has been established?

Q28. Do you consider the cap be retained at 12.5% going forward?

Q29. If you think the cap should be changed, when should this happen and at what level should the cap be set? Please provide evidence supporting your answer.

Q30. Do you have a view on how we should predict expected electricity use in a subsequent obligation period? What are the advantages/disadvantages of any suggested methods of predicting expected electricity use?

Q31. Do you have a view on how we should predict the expected level of ROCs generated from existing generating stations in a subsequent obligation period? What are the advantages/disadvantages of any suggested method?

Q32. Do you agree with our proposal for accounting for banked ROCs?

Q33. Do you agree with our proposal for predicting new generation capacity for the subsequent obligation period? What are the advantages/disadvantages of this method of predicting this new capacity?

Q34. Do you agree that the proposal to offset redeemed ROCs against a generator's future output presents a proportionate approach?

Feed-in Tariffs

Q35. Do you agree that FITs should be structured in order to recognise all generation, rather than just exports?

Q36. Do you agree that the best way of delivering security for the investor is to set a long-term guaranteed price for exports?

Q37. Do you agree that FITs generators should also benefit from on-site use of their generation?

Q38. Do you have any other views on the basic structure of the FITs?

Q39. Do you agree with the proposed limits of 5MW for renewable technologies and 50kW for gas fired CHP for FITs installations?

Q40. If you disagree with the proposed limits, what lower limits would be more suitable and why?

Q41. Do you agree that generators off the electricity grid should be eligible for FITs? If so, what safeguards should be put in place for these generators to ensure the electricity is being used?

Q42. Do you agree with the selection of technologies for which we will be providing tariffs from April 2010?

Q43. Should technologies for which we do not propose to offer a specific tariff from April 2010 be handled by:

– Providing a single tariff from April 2010 for all remaining technologies;
or
– Considered as a new tariff band as part of regular FITs reviews?

Q44. Do you agree that the FITs should not require on-site generators to comply with any energy efficiency standards as a condition for eligibility?

Q45. Are there any issues regarding eligibility that we have not foreseen here? If so, how should we address them?

Q46. Do you agree with our approach not to offer up-front capitalisation to schemes as part of the FITs? If not, what alternative approach do you propose and why?

Q47. Do you agree with our approach that a generator may assign the rights to their FITs payments to a third party? If not what alternative approach do you propose and why?

Q48. Do you agree with the proposed model for registration and accreditation of plant claiming FITs discussed in the Accreditation, Registration and Connection section?

Q49. Do you agree with the principle that all generation should be metered to qualify for FITs? Do you foresee any issues with that approach?

Q50. What are your views on regulating which suppliers should be required to offer FITs, and in what circumstances?

Q51. Do you agree with the tariff levels, lifetimes and degression rates we have set out for the chosen technologies? If not, what evidence do you have for choosing alternatives?

Q52. Do you agree with our proposed guaranteed minimum price for the exported electricity? If not, what price would you propose and what is your proposal based on?

Q53. Does the proposed review structure provide the right balance between providing certainty and adapting FITs to the changing circumstances in which it operates?

Q54. Do you have any initial views on the relationship between FITs and those in fuel poverty or on low incomes?

Q55. Do you agree that the levelisation process described above provides the best system for redistributing costs amongst suppliers? If not, what other ways can we levelise costs across suppliers?

Q56. How can the levelisation process facilitate participation in FITs for small suppliers?

Q57. Should suppliers be able to include an administration cost in the levelisation process? If so, what should the level of that allowance be and how should it be determined?

Q58. Should the levelisation process include consideration of large and unforeseen price differences between prices paid to generators and the market value?

Q59. Do you agree with the proposed approach to auditing, assurance and enforcement? If not, what alternative approach do you propose and why?

Q60. Are there any issues regarding the role of suppliers that we have not foreseen here? If so, how should we address them?

Q61. What do you think is the best way of defining an installation for the purposes of FITs?

Q62. Once an installation is defined, do you think further checks are required to verify this? If so, what would these checks be?

Q63. How could we deal with installations at a single site installed in different years?

Cross Cutting

Q64. Do you agree with the proposed approach for the treatment of existing generating stations?

Q65. Do you agree with the proposed approach for the treatment of generating stations that completed installation during the interim period?

Q66. Do you agree that, for non-household installations built during the interim period, we should make access to FITs conditional upon repayment of any central Government grant received for such installations?

Q67. Do you agree with the proposed approach for the treatment of new generating stations once the FITs scheme becomes operational?

Q68. Do you agree with the decoupling of support for heat and electricity for new renewable CHP plants? What are the technical issues that need to be considered in implementing transitional arrangements towards the introduction of FITs and RHI for CHP installations?

Q69. Do you agree that FITs should not restrict access for those projects covered by other schemes?

Annex 2: Glossary

AD – Anaerobic Digestion; a biological process which produces bio-gas from discarded food and farm waste.

Banding – A mechanism to provide different levels of support to different technologies based on, for example, technology type and installation capacity.

'Big 6' electricity suppliers – Centrica, EdF, EON, RWE Npower, Scottish Power and Scottish and Southern.

BWEA – British Wind Energy Association.

CERT – Carbon Emissions Reduction Target; an obligation on energy suppliers to deliver measures that provide CO_2 savings

CESP – Community Energy Saving Programme; a programme to deliver energy efficiency packages.

CfD – Contract for Difference; a contractual mechanism which allows for pricing risk to be transferred from one party to another by exchanging a floating rate for a fixed price.

CHP – Combined Heat and Power; the simultaneous generation of useable heat and electricity in a single process.

CHPQA – CHP Quality Assurance Programme, provides a means to assess and monitor Good Quality CHP capacity

Co-firing – fuelling a power generation installation with a mix of fuels, e.g. biomass and fossil fuel.

Degression – a mechanism whereby tariffs are reduced annually to reflect, and to some extent encourage, expected decreases in technology costs.

DNO – Distribution Network Operator.

FITs – Feed-in Tariffs.

GHG – Greenhouse gas.

Good Quality output – Good Quality denotes the outputs of CHP plants that have met the energy efficiency criteria set by the CHP Quality Assurance (CHPQA) programme.

Grandfathering – provides certainty for an investor by setting a guaranteed support level for projects for their lifetime in a scheme, regardless of future reviews.

Headroom – works by creating a positive gap of a predetermined size between the RO target and the predicted quantity of renewable generation. This ensures the level of the obligation remains above actual generation and ROC values are more stable and predictable.

HESS – Heat and Energy Saving Strategy.

LCBP – Low Carbon Buildings Programme; a programme providing grants for the installation of microgeneration technologies

Levelisation – A mechanism whereby FITs payments would be borne by all licensed suppliers in proportion to their share of the UK electricity supply market.

LPG – Liquefied Petroleum Gas.

MCS – Microgeneration Certification Scheme.

NFFO – Non-Fossil Fuel Obligation; the government's instrument for encouraging renewables before the RO.

OFTO – Offshore Transmission Owners.

Oleochemicals – Chemicals derived from biological oils or fats, as opposed to petrochemicals, which are derived from petroleum.

PPA – Power Purchase Agreement.

RAB – Renewables Advisory Board; and independent NDPB sponsored by DECC that provides advice to government on a range of renewables issue.

RED – Renewable Energy Directive.

RHI – Renewable Heat Incentive.

RO – Renewables Obligation.

ROO – Renewables Obligation Order; a form of secondary legislation known as a Statutory Instrument; sets out the detail of the RO and can only be amended if it is first subject to a consultation and then debated and approved by both Houses of Parliament.

RES – Renewable Energy Strategy.

ROC – Renewable Obligation Certificate.

RTFO – Renewable Transport Fuel Obligation; an obligation on supplies of road fuels to ensure a certain percentage of the fuel they supply is made up of renewable fuels.

SME – Small/medium sized enterprise.

Spill price – price paid to generators for generation in excess of what they are contracted to produce.

SRF – Solid Recovered Fuel a homogenous fuel created from municipal waste.

UKAS – United Kingdom Accreditation Service.

Annex 3: Consultation Events

Event	Team	Date
Meeting/workshop on the Registration, administration and levelisation of FITs – aimed at suppliers	FITs	Late August/ Early September
Meeting/workshop on the Registration and administration of FITs – aimed at generators	FITs	Late August/ Early September
MicroCHP workshop	FITs	10 September 2009
Stakeholder workshop on the ROO 2010	RO	Week of 28 September
By-products, Co-products & Wastes Study Findings Presentation	RO	7-October

For more information about these events, please e-mail: rfi@decc.gsi.gov.uk

Department of Energy and Climate Change
www.decc.gov.uk
First published July 2009.