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Consultation on the Renewable Heat Initiatives

Dear Sir

I was asked, as Energy Science Adviser of the Low Carbon Innovation Centre (LCIC) at the University of East Anglia, to prepare a response to the Renewable Heat Initiative Consultation. The response was reviewed by other members of LCIC who made minor changes to the original draft. This agreed response is now submitted as attached. The response begins with a short statement relating to the background of LCIC and how it has become recognised worldwide for its excellence as a centre of learning, as a qualifying body. Thereafter there are responses to the specific questions asked in the Consultation Document. LCIC, while welcoming the Renewable Heat Initiative, have some serious reservations about parts of the proposed implementation.

The Low Carbon Innovation Centre wishes to thank the Department of Energy and Climate Change to for the opportunity to participate in this consultation exercise.

Yours sincerely,



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CONSULTATION ON THE RENEWABLE HEAT INCENTIVE

Response by N.K. Tovey, M.A. PhD, CEng, MICE, CEnv on behalf of the Low Carbon Innovation Centre

(April 2010)

The Low Carbon Innovation Centre

The University of East Anglia (UEA) is at the forefront of research and knowledge transfer in the field of climate change and carbon emissions reduction and is the home of a number of highly successful initiatives including the Tyndall Centre, the Carbon Reduction Programme (CRed) and Carbon Connections. In 2008, it created and incorporated the Low Carbon Innovation Centre (LCIC) to focus its externally-facing initiatives, to provide products and services to the private and public sector, on a commercial basis.

LCIC is now the operational home of Carbon Connections. UEA has successfully operated this HEFCE (Higher Education Funding Council for England) and OSI (Office for Science and Innovation) funded initiative since 2006, investing in carbon reducing technologies, businesses and university-based innovations. A portfolio of 25 live projects including a mix of equity and royalty-based investments has already started to bring returns to the fund - these being available only for reinvestment. The regional universities are involved in or are the originators of technologies in over half of the 25 investees and the region's universities and companies responsible for in excess of 100 outline concepts and applications in a 2 year period.

The LCIC is also home to CRed and provides carbon reduction expertise from the University to the public and private sector on a commercial basis. It is operated through a wholly-owned company of UEA which gifts its profits to the University. Its main services are consultancy, the provision of carbon reduction (IT) systems and innovation services including the operation of the Carbon Connections investment fund.

Renewable Heat Incentive Consultation on the proposed RHI financial support scheme

Please use the table below as a template to respond to the consultation. It will help us to record and take account of your views.

Also, please provide evidence for your answers and comments where possible.

INTRODUCTION
Q1: Are there any issues relevant to the design or operation of the RHI that are not addressed in this consultation document? If so, how should we deal with them?
<p>Yes</p> <p>Comments: There should be consideration of other sustainability criteria when larger scale schemes are planned. These should include issues of the possible impact of other industries such as timber and related products (e.g. paper, furniture, board, construction industry) and who as a result of the RHI may see significant impacts if their raw materials are displaced for energy production thereby seeing a possible loss of industry in the UK.</p> <p>The scope for carbon sequestration at least in terms of decades by use in durable product such as furniture should not be overlooked and a price for temporarily sequestering carbon should be factored in for large scale schemes. On the other hand, small scale, domestic sized schemes are unlikely to have a substantial impact unless their market share grows significantly, and any issue thereby arising can be covered in the periodic reviews. See also comment to Question 27</p>
CHAPTER 1: ACCESSING THE RHI
Q2: Do you see any barriers to such financing schemes coming forward? In particular, are there any limitations in leasing and finance legislation that you feel inappropriately restrict the development of RHI financing models?
<p>Yes</p> <p>Comments: See the response to Question 3 over the definition of the word “owner” when covering and Energy Service Companies in the Domestic Market</p>
Q3: Do you agree with our proposed RHI registration and payment approach? If not, can you suggest how this approach can be improved?
<p>Yes but the approach can be improved</p> <p>Comments: A formal RHI registration is important, but it must avoid being over- bureaucratic. The proposal to restrict payments to the “<i>owner</i>” may cause confusion in the domestic market in cases where an Energy Service Company has a long term contract with the householder. A person who</p>

owns a mortgage on a house is usually referred to as the “owner/occupier” even though he/she does not own the property outright – most being held by the mortgage company. In a similar way there may be issues with Energy Service Companies (ESCO) who would finance the required scheme up front and thereafter expect benefit to cover their costs. Greater clarity in the word “*ownership*” is needed in such cases. Thus an ESCO might fund a scheme and have a contract for the householder to pay for heating used at an agreed tariff which would be comparable to that which the householder would have paid had a conventional heating system been installed. Thus, for instance, a ground sourced heat pump scheme would be compared with the equivalent condensing boiler system. The householder would pay the ESCO the agreed equivalent tariff of what the condensing boiler would have consumed, but the ESCO would pay to the utility company the actual cost of electricity consumed in the heat pump. The difference between the two tariffs would provide, in part, the finance for the ESCO to ensure the project went ahead. It would be important that the ESCO had at least some benefit from the RHI payments. This is different from the example quoted relating to a local authority and a housing association. A potential way around this would be where there is an ESCO agreement with a householder, the payment is made to the ESCO for a defined period, but that checks are placed on the ESCO to ensure that excessive profits are not made and there is an agreed cap. on profits, particularly if the timescale when the ESCO is involved is less than the 15 or 20 years.

CHAPTER 2: ELIGIBILITY AND STANDARDS

Q4: Do you agree with our approach of requiring products and installers for installations up to 45kW within RHI to be accredited under MCS or equivalent?

Yes

Comments:

There may be a question of the specific limit of 45kW. Essentially the approach is correct for domestic properties, but there may be some such larger properties which have a higher heat demand, on the other hand there may be non-domestic properties under this limit. A solution would be to use this limit as suggested for all installations, but where there is a single domestic dwelling, that threshold might be exceeded, but it would still require certification.

Q5: Where MCS product and installer certification is extended beyond this limit, do you agree that we should introduce the requirement of using certified installers and equipment for eligibility for the RHI?

Yes

Comments:

See also comments to Q4

Q6: Can you provide details of any UK or European standards that should count as equivalent to MCS? How should we recognise these standards for the RHI?

Comments:

We have no information on this, but there is sense in establishing a pan European review body to investigate comparability between standards not only for the RHI but for any future low carbon initiatives.

Q7: Do you agree with our proposed approach to eligibility of energy sources, technologies and sites?

No in the domestic market

Comments:

In the non-domestic market, the proposal of the cut off of 15th July 2009 is sensible as any business will tend to make investment decisions based on prevailing financial costs. However, in the domestic market this is very much less so. There should be an option available for **domestic consumers only** who installed systems prior to 15th July 2009 to have the option of receiving the RHI benefits provided that they repaid any capital grants they had previously received for the scheme within a predetermined timeframe – say 2 years. This would be a one off choice and many may prefer not to bother.

On the other hand there are schemes which were installed by motivated householders and which did not receive capital grants. These should be eligible for retrospective support – perhaps at a reduced level. It is precisely these people who have been motivated in the past – not by financial motive but by altruism to be at the forefront of innovation, and yet they miss out. The danger is that such people become disillusioned and are become reluctant to take initiatives in the future. A case in question, associated with feed in tariffs relates to 1A Gilbert Road, Cringleford, Norfolk where a PV array was installed at significant cost by the owner **before** any grants were available. He is now so disillusioned by missing out yet again with the introduction of FITs that he is unlikely ever to take initiatives in the future. We must reward early movers in the domestic sector and encourage them to take further measures. They are, after all, the people most likely to encourage others to take advantage of renewable energy ventures.

Q8: Do you agree with our proposed approach on bioliquids? Are you aware of bioliquids other than FAME that could be used in converted domestic heating oil boilers? If so, should we make them eligible for RHI support, and how could we assess the renewable proportion of such fuels to ensure RHI is only paid for the renewable content of fuels?

Yes/No

Comments:

We must be open to the inclusion of bioliquids other than FAME and these can be incorporated in any modification to the RHI.

Eligible bioliquids should be not only for domestic boilers, but also for micro CHP schemes which can work using biofuels provided there is no contradiction with any incentive from the Feed in Tariff. The method of reliably assessing the renewable content of the delivered fuel is important and this should only be done for deliveries of blended fuel to the premises which have a certification as to renewable content, or alternatively there is installed in the premises a certified remote smart meter to determine the weighted average renewable energy content of fuel actually used over the accounting period.

Q9: Do you agree with the proposed emissions standards for biomass boilers below 20MW? If not, why, and do you have any evidence supporting different ones, in particular on how they safeguard air quality?

No

Comments:

We recognise that some biomass boilers may not meet the original targets set of 20g/GJ particulate matter and 150g/GJ for NO_x. However, the implication in the consultation document is that at least some boilers meet the target indicating that it is technically possible. It would run counter to long term policies to set higher targets as there will then be a legacy which would be held over for one to two decades. Perhaps a better strategy would be to allow higher alternative levels initially, but that legislation be enacted to ensure compliance to a lower level within say five years. Those projects which started under more relaxed rules would then be expected to comply to the newer standards after a short period. Alternatively they could lose completely or receive a reduced incentive payment for the remainder of the 20 year period.

Q10: Do you think the RHI should be structured to encourage energy efficiency through the tariff structure (in particular the use of deeming), or, additionally, require householders to install minimum energy efficiency standards as a condition for benefiting from RHI support?

Yes with qualifications

Comments:

There should be a minimum standard and the RHI should be structured to encourage energy efficiency. However, as with our earlier observations the system must also ensure that it does not disadvantage early movers in the domestic sector who already have implemented schemes and thereby be discouraged from future innovation. Furthermore, with the proposed “*deeming*” system in place there is no encouragement for occupants of buildings to manage their energy use via non-technical means – e.g. by awareness raising to vary heating program timings periodically to reflect the different heating demands at different times of the year.

Q11: Can you provide suggestions for how to ensure that developers do not build to lower energy efficiency standards as a result of the RHI in advance of 2013 and 2016 building regulations taking effect?

Comments:

This is an important issue and with the long legacy of insulation in buildings it is important to ensure developers do not use the RHI as a loop hole. The critical issue is the heat loss coefficient. For compliance in new buildings, it would be sensible to ensure at the outset that buildings completed after 2011, but before 2013, would only receive the full tariff if they met the 2013 standards at the outset. Otherwise the tariff would be scaled according to the actual heat loss coefficient compared to that expected for the equivalent one in 2013. From 2013, the equivalent basis, but using 2016 should then be used.

CHAPTER 3: TARIFFS

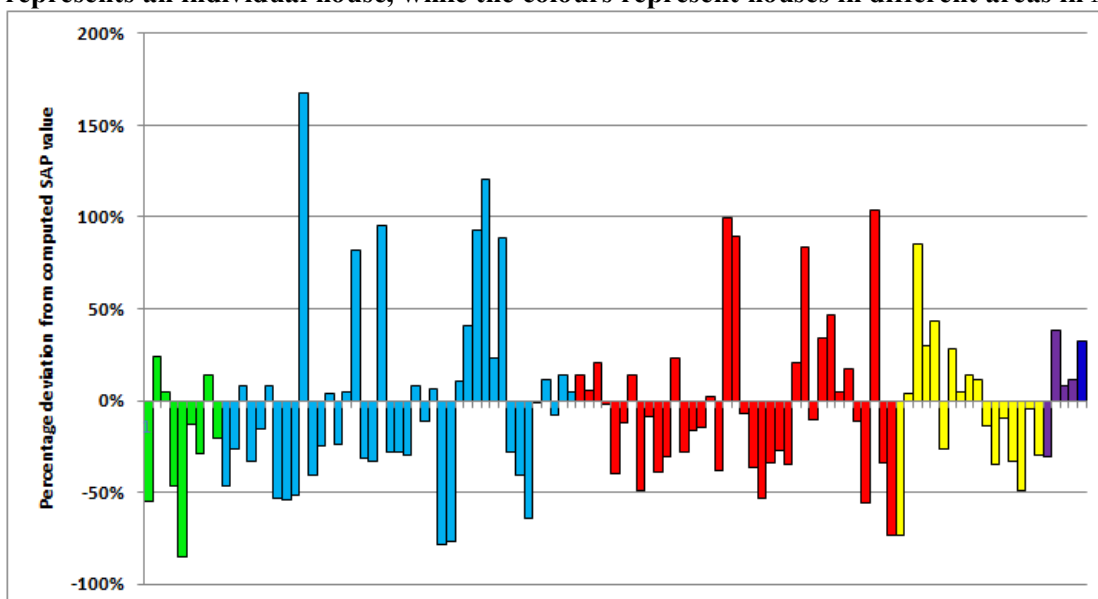
Q12: Do you agree with our proposals on where we should meter and where we should deem to determine an installation’s entitlement to RHI compensation?

Definitely Not

Comments:

1. Research at the University of East Anglia demonstrates that the heat loss assessments based on SAP calculations or equivalent can give very misleading results when referring to an individual property. Over 110 properties were surveyed for detailed SAP calculations and compared to actual energy performance. There was generally good agreement i.e. within 2.0% if the aggregated overall energy consumption of all 110 houses was compared with the aggregated SAP computed values. The following graph shows the response of each of the 110 houses. Where the plotted value is 0% this indicates the computed and actual performances for that house were identical. Where, for example the value is 100%, this indicates that the actual consumption in that house was double that predicted theoretically. Where the percentage figure is negative, the actual consumption was less than that predicted. There is a large variation from one property to another with one exceeding the predicted value by over 150%, while another only consuming less than 50% of the predicted value. .

Actual gas consumption compared to theoretical estimates for 110 houses in Norwich. Each bar represents an individual house, while the colours represent houses in different areas in Norwich.



2. “**Deeming**” energy consumption as the basis of a tariff by whatever calculation method will be flawed for the reasons given above, and will do nothing to reward those who are conscientious in reducing heat demand by non-technical energy management strategies. There are also other serious deficiencies with such a scheme. It will not:
 - a. Ensure that the heating appliance is performing effectively,
 - b. Allow for periods when the property is unoccupied,
 - c. Ensure that the basic heat requirements continue to be the same throughout the qualification period.
 - d. Reflect the different heating requirements from one year to the next (i.e. colder or warmer winter).

3. Furthermore, such a “*deeming*” scheme will lead to unnecessary bureaucracy in the assessments that are needed. Such assessments will be needed to be checked regularly for each property every few years to ensure that the property still complies with the requirements of the RHI.
4. LCIC prefers a system which would actual energy readings to demonstrate actual benefits through the use of meters as is the case with FITs.
5. It is true that there might be a risk of over-generation, but this is unlikely to be significant in the “domestic” sector. Indeed monitoring actual performance will almost certainly be less prone to problems of potential abuse than the proposed “*deeming*” approach which as shown above could be up to 150% in error and fail to address the issues highlighted in (a) – (d) above.
6. Heat meters are now compact and reliable and in a small/medium size building at the University East Anglia has no fewer than three such meters installed for sub-area monitoring. There is no reason why these could not be linked in with smart metering for remote recording – thereby minimising administration. In the case of electric heat pumps, a special dedicated electricity meter attached to the heat pump could be used as an alternative to a heat meter.
7. With a meter, it would be easy to monitor overall performance and check for any deterioration and also correctly adjust for climatic variations from one year to the next. Thus the energy data from the meter would provide information on the heat loss coefficient for the premises by plotting the actual consumption against mean external temperature and allowing for the heat appliance efficiency. A solution to minimise any possible issue of over-generation would be to do a single initial SAP assessment and compare the actual and SAP computed heat loss coefficients at the outset.

Q13: Do you agree that a process based on SAP or SBEM for existing buildings or the Energy Performance Certificate for new buildings is the best way of implementing *deeming*? Do you have any suggestions on the details of how this assessment process should work?

See comments above

Comments:

There must be a rational method for assessing buildings and SAP or equivalent could form the basis of overall checks, but the use of the “*deeming*” process is flawed for reasons shown in response to Question 12

Q14: Do you agree that at the large scale/in process heating, where we propose metering, the risk of metering resulting in a perverse incentive to overgenerate is low? How could we reduce it further within the constraints of using metering, to ensure only useful heat is compensated? Do you see any practical difficulties concerning use of heat meters (such as on availability, reliability or cost of heat meters) and, if so, how should we address them?

Generally yes.

Comments:

Regarding heat meters - reliable heat meters are now available and compact and indeed a single small/medium size building at the University East Anglia has no fewer than three such meters installed for sub-area monitoring. There is no reason why these could not be linked in with smart metering for remote recording.

Q15: What is the right incentive level required to bring forward renewable heat from large-scale biomass including in the form of CHP while minimising costs to consumers?

Comments:

We have no reliable data on which to objectively comment. However, it is essential that further scrutiny is done for such schemes. It would be perverse for an individual large scale heat only biomass scheme were to be implemented if this meant that a biomass CHP district heating scheme was precluded in the area because the network uplift support was insufficient. See also comments to Question 20.

Q16: What is the right incentive level required to bring forward renewable heat from biogas combustion above 200 kW including in the form of CHP while minimising costs to consumers? Do you have any data or evidence supporting your view?

Comments:

We have no comments on this aspect

Q17: Do you have any data or evidence on the costs of air source heat pumps above 350 kW or solar thermal above 100 kW?

Comments:

We have no reliable data on this

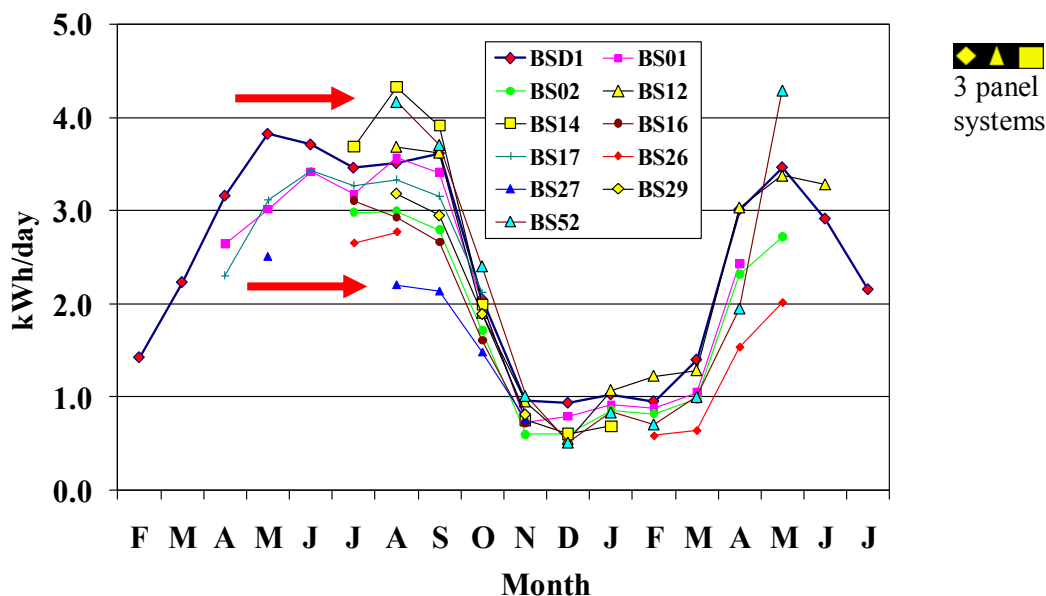
Q18: Do you agree with the proposed approach to setting the RHI tariffs, including tariff structure and rates of return? Do you agree with the resulting tariff levels and lifetimes? If not, what alternatives would you prefer, and on the basis of what evidence?

No

Comments:

1. We disagree with the “*deeming*” approach in the determination of the RHI entitlement. Other schemes to promote the Low Carbon Economy (e.g. RO, RTFO, CRC, FIT) are based on performance, and this is what is important also for RHI to minimise bureaucracy and inappropriate values being used.
2. We also find the worked example with reference to solar hot water heating unhelpful and potentially misleading. Our research summarised in the graph below is not consistent with the implication that 2200 kWh might be generated from such a system. We have surveyed a number of two panel and three panel systems and the actual system output (i.e. including storage) is significantly less than 50% of that figure. We accept that the figure might be purely illustrative, but it would be misleading to continue to use such a figure in future documents.
3. The estimate of actual heat energy required in a building is very approximate as indicated in the comments to question 12. However, the estimate of useful solar energy gained is even more inaccurate and it is highly dependent on the amount of water use and the time of that water use.

Furthermore it also depends on the settings on the programmers for the backup fossil fuel boilers. Thus data obtained by the University of East Anglia from several monitored solar hot water systems, show that the average useful energy gained can vary by a factor of 2 as indicated by the arrows in the graph. The research showed that if a house holder had the same setting for hot water on the boiler programmer for both summer and winter then the solar gain in summer was significantly (up to 50%) of that which was obtained if the programmer was turned off in summer and only used by manual override when absolutely needed. Any “*deeming*” of energy provided would be very inaccurate and unfairly penalise those who attempt to get the most out of their system. Most solar hot water systems do have a meter panel indicating solar energy gained and this, via a remote meter reading system should be used to monitor actual performance and provide the basis for RHI support and NOT a system based on “*deeming*” proposed.



4. For reasons given in comments to Question 12, we do not believe “*deeming*” to be appropriate at any level for space heating, and that the potential problems from deliberate heat dumping are less of an issue than the significant inaccuracies from a proposed “*deeming*” scheme. There is no reason why Smart Meters could not be used with Heat pumps to plot consumption data against external temperature to provide a very simple way to identify the heat loss coefficient. This is derived directly from the gradient of the trend line for energy consumption values. The same would be true for small heat meters for biomass boilers. If necessary this measured heat loss coefficient could be compared with a SAP computed theoretical value as an overall check. The key issue here is that once installed the regular monitoring would allow the heat loss coefficient to be continually checked and to some extent this would identify if in subsequent years deliberate heat dumping was occurring.
5. “*Deeming*” heat produced will do nothing to encourage better management or incentives to improve the fabric performance of a building. In fact the proposed scheme is likely to do completely the reverse.
6. If as suggested above, a scheme allows regular automatic monitoring of the heat loss coefficient, then immediately any deterioration would be identified. However, if an owner of the building invested in better insulation or control, then this would be reflected in a reduced heat loss coefficient. In this case less heat would be actually generated or used. As such a reduction would improve energy security and reduce carbon emissions, such efforts should be rewarded and this could be achieved by scaling future tariff rates by the ratio of the original heat loss coefficient to the new lower one. i.e. in this case a lower overall renewable heat demand would receive a higher unit tariff.

Q19: Do you agree with our proposed approach on mixed fuels? Do you agree with our proposal that, at larger sites, with the exception of EfW, RHI will require the use of a dedicated boiler for the renewable fuel? Where our approach is to follow the Renewables Obligation, do any aspects need to be adapted to account for the different situation of renewable heat?

Generally Yes

Comments:

A dedicated boiler is essential for biomass as otherwise the certification of the exact amount of heat provided from renewable sources would become difficult to verify.

Q20: Do you believe that we should provide an uplift for renewable district heating?

Yes

Comments:

We agree that there should be the opportunity for uplift, but only as proposed if the district heating network is constructed at the same time as, or after, the construction of a biomass power station or biomass heat only facility. We agree that it should not be available to existing networks unless these are extended. It is important that a correct balance is provided between individual renewable heat provision in individual properties and that provided by a more centralised scheme via a district heating network.

In many cases a district heating system, particularly if associated with a biomass CHP plant will generate higher CO₂ savings than nearby individual medium/large scale biomass schemes. The uplift support for a particular district heating network which can demonstrate that it would provide greater CO₂ savings should be set at a level to ensure it is financially more attractive than a cluster of individual schemes.

Q21: Do you believe that an uplift should be available to all eligible district heating networks, or that eligibility should be determined on a case-by-case basis depending on whether a network contributes to the objective of connecting hard-to-treat properties (and, if the latter, how should we determine this for each case)? Do you agree that situations of one or a small number of large external heat users should not be eligible for an uplift, and, if so, what should be the minimum eligibility requirement for an uplift (expressed for instance as a minimum number of external customers)?

YES to eligibility for all networks and NO to the exclusion of external customers

Comments:

It is important to include an uplift for new network developments but consideration should be given to differentiating between those which are heat only and those which involve CHP. For those which are associated with biomass CHP, then even premises relatively close to the power station **should** be considered in any additional tariff as it is important to encourage CHP as a more effective way of using renewable energy and reducing CO₂ emissions than separate biomass schemes. If there is no such encouragement for close premises, then there may well be an unintended consequence that such premises opt solely for a stand alone additional biomass boiler rather than effectively exploiting the

heat from the CHP station. A criterion for determining uplift should be such that it would be a sufficient incentive for nearby customers to opt for connection to the CHP network rather than going it alone.

The impact of any uplift tariff in any area should be a commercial matter between the heat provider and the client, but to encourage CHP use in preference to other individual schemes, uplift incentives will be important. There should be a simple way of assessing these uplift tariffs and scope for variation in this uplift from one area to another should be available probably via a banded scheme. The basic identification as to which uplift band a scheme falls should address the issues of heat density and pipe length distance and could readily be determined as a heat load – distance moment as follows

$$\text{Mean Heat load - distance moment } (M) = \frac{\sum p R_i H_i}{n}$$

Where

p is the proportion of the total heat available from the station that is used in the district network.

R_i is the distance of the i^{th} customer from the power station (in km)

H_i is the heat load of that customer (in kW)

n is the total number of customers.

Such a parameter M would provide a means, via banding, to provide a higher uplift for those schemes with more distant customers and would be preferable to a single uplift tariff. Furthermore, those schemes with high heat loads close to the power station will have a lower M value as would those where only a small percentage of the heat from the power station is used.

A refinement of this scheme in large networks would allow for zoning within a single network where uplift charges could vary from one zone to another.

CHAPTER 4: THE RHI BEYOND 2011

Q22: Do you agree that RHI tariffs should be fully fixed (other than to correct for inflation) for the duration of any project's entitlement to RHI support? Do you agree that we should include bio-energy tariffs, including the fuel part of those tariffs, in such a grandfathering commitment?

No

Comments:

In principal we are not in favour of a fixed tariff as while we accept that a major attraction for possible motive for move towards renewable heat would be a reduced exposure to fossil fuel price fluctuations this should not be a prime reason for keeping the incentive at a fixed level.

If indeed it is proposed that a fixed level should be grandfathered then the risk to investors would be significantly lower than other investments for energy reduction such as insulation etc which would be affected by fossil fuel price fluctuations. As a result, the rate of return should be reduced by reducing from the outset the level of the support tariffs.

A preferable way would be to index the annual payments for heat pumps according to the weighted average wholesale price index over a period of say 2 years thereby minimising anomalies from short term price spikes. While we accept that short term fluctuations in wholesale price will not necessarily reflect short term consumer prices, the issues are much less significant when averaged over periods of two or three years.

A general problem with rational long term decision making in energy is the price volatility of fossil fuels and it may well happen that a future government might introduce more certainty by smoothing out prices through temporary taxation during low prices and equivalent rebates at times of high prices. RHI support which was not fixed would be in line with a more rational approach to overall supply and consumption of energy.

If the RHI is indeed fixed, despite the comments above, we do not favour seeing it index linked.

Q23: Do you agree with our proposal not to introduce degression from the outset of the scheme but consider the case at the first review?

Yes

Comments:

There are many uncertainties at present and introducing specific degression tariffs for new installations from the outset would not be helpful and might have unexpected consequences of an undue rush into certain technologies. We believe that the principal of degression is important and should be reviewed at an early stage, but that actual degression tariffs should not be declared at the outset. Instead, there should be a qualitative indication as to whether the Government is mindful to introduce degression or not for each technology separately.

Q24: Do you agree with our proposed approach on innovative and emerging technologies?

Yes

Comments:

There needs to be flexibility here and consideration of integration – e.g. using surplus solar thermal energy for accelerated ground heat recharge or a store partially heated by solar as the source for a heat pump. Equally it is important that innovation should not focus solely on renewable generation and should not have the perverse effect of reducing attempts at energy conservation. Thus if a householder installs enhanced insulation his heat load would go down. Instead he should be rewarded by the inverse of the heat load difference as explained in the response to question 18 paragraph 6.

Q25: Do you have any views on how we should encourage technology cost reductions through the RHI, particularly on solar thermal heat?

Comments:

1. Make the installation of solar panels mandatory for all new houses (unless physical conditions prevent this,
2. Motivate local authorities to organise clusters of interested householders to install solar panels in existing houses. This was done successfully in the BroadSol project in 2004 where 50 householders in Broadland signed up to install solar panels as one group thereby enabling components to be bought in bulk, and the installation costs to be reduced as there was a steady work stream for the installer.
3. Explore ways to integrate solar thermal heating to enhance the source temperature of heat pumps and thereby improve the coefficient of performance.

Q26: Do you agree with our proposed approach to reviews, and the timing and scope of the initial review?

In principle Yes

Comments:

While we are concerned about the short time frame from the time of inception of RHI and a review in 2013, coordination of timing of reviews is important so that other opportunities can also be explored – see also response to Question 29. We also believe that though we favour metering from the outset if this proves impossible initially, then this should be seriously considered routinely in all reviews.

Q27: Can you provide examples of situations that could be taken into consideration in determining criteria for an emergency review?

Comments:

A potential issue could arise where an emergency review might be needed if there is a surge in demand for biomass for electricity generation only stations/ RTFO and the sustainability of use of such fuels comes into question. See also the response to Question 1.

CHAPTER 5: INTERACTION WITH OTHER POLICIES

Q28: Do you agree with our proposed approach to allow access to RHI support to new projects where installation completed after 15 July 2009, but not before? Do you have any evidence showing that in particular situations RHI support for installations existing before this date would be needed and justifiable?

No

Comments:

Our comments to Question 7 largely cover this point, but are restated here for completeness

In the non-domestic market, the proposal of the cut off of 15th July 2009 is sensible as any business will tend to make investment decisions based on prevailing financial costs. However, in the domestic market this is very much less so. There should be an option available for **domestic consumers only** who installed systems prior to 15th July 2009 to have the option of receiving the RHI benefits provided that they repaid any capital grants they had previously received for the scheme within a predetermined timeframe – say 2 years. This would be a one off choice and many may prefer not to bother.

On the other hand there are schemes which were installed by motivated householders and which did not receive capital grants. These should be eligible for retrospective support – perhaps at a reduced level. It is precisely these people who have been motivated in the past – not by financial motive but by altruism to be at the forefront of innovation, and yet they miss out. The danger is that such people become disillusioned and are become reluctant to take initiatives in the future. A case in question relating admittedly to feed in tariffs relates to 1A Gilbert Road, Cringleford, Norfolk where a PV array was installed at significant cost by the owner before any grants were available. He is now so disillusioned by missing out yet again that he is unlikely ever to take initiatives in the future. We must reward early movers in the domestic sector and encourage them to take further measures. They are, after all, the people most likely to encourage others to take advantage of renewable energy ventures.

CHAPTER 6: ADMINISTRATION

Q29: Are there any parts of the proposals set out in this consultation that in your view would allow for unacceptable abuse of RHI support, or other unintended consequences? If so, how could we tighten the rules while keeping the scheme workable, and avoiding an overly high administrative burden?

Yes

Comments:

1. The issue of “*deeming*” is potentially open to serious problems as it has been shown in responses to Questions 12 and 18 that the theoretical performance may deviate significantly from actual performance, and unless there is an annual reassessment of each property by a qualified assessor covering all aspects, this could lead to serious abuse. Annual checking would impose a significant administrative burden. On the other hand if the appliances were metered, particularly by automatic remote smart meters this would provide an easy method to minimise abuse. We strongly believe that the potential abuse from over-generation is much less of a problem and potential abuse of the “*deeming*” approach. It would seem unlikely that the necessary annual checks would be implemented in a “*deeming*” system. Installing dedicated remote meters for heat pumps presents no problem, and most solar installations already have some form of metering.
2. It is accepted that some development in heat meters for biomass boilers may be needed, although we have had reliable experience of such meters at UEA, but the aim should be to ensure metering is in place just as it is with FITs for electricity generation. A compromise for such appliances might be the provision of an initial capital grant with the proviso that adequate metering is also installed and that the per kWh incentive then cuts in after a period of say 1 – 2 years.
3. It is hard to see that a “*deeming*” process will really achieve the required objective of renewable generation except from a “Tick Box” approach which would not provide the correct objective information and is likely to be counter-productive to these objectives in the long run. The “*deeming*” process is a form of capital grant – albeit spread over many years. With its long time span, there would be no controls to ensure that non-renewable heating sources are not installed as some point within the qualifying period and thereby negating the effort done under the incentive. As indicated above, a small initial capital grant to cover cost installation of an adequate meter might be a way forward.
4. To simply administration, the opportunity should be taken at the next review of RO etc to explore the possibility of a single integrated organisations which would be applicable ONLY to large organisations – i.e. the size of establishment covered by EU-ETS/ CRC. In particular the opportunity for these large organisation to have an integrated obligation/commitment covering the RO, RTFO, RHI etc. For small consumers, the separate initiatives where the RO is the responsibility of the electricity supplier are sensible, at least in the next decade.
5. For large consumers, they should be given the option for compliance in an integrated way to ensure that a given OVERALL percentage of their energy comes from renewable energy rather than separately from electricity or heat, and this is more in tune with the EU directive. Thus they could comply from their OWN renewable electricity generation (not a renewable tariff), their own renewable heat initiative, or their own renewable transport initiative, but it would be up to the organisation itself to explore the most effective solution in their own situation. In this way, an integrated obligation approach could be devolved to the large company which may offset this obligation by a more coherent deployment of renewable heat or vice versa. A system of recycling of certificates/buy-outs as currently part of the RO could be used, with relevant differential tariffs for heat and electricity.

ANNEX 3: CALL FOR EVIDENCE ON DISTRICT HEATING NETWORKS

Q30: Do you agree with our proposed overall approach to setting the level of the uplift? Can you provide evidence that would help us to determine the level of uplift? In particular:

Can you describe typical district heating networks that would be appropriate as reference networks, and what are their network costs, heat loads, and customer numbers and characteristics?

What proportion of the heat load of such networks is typically supplied to hard-to-treat properties? What proportion of the total network of the reference installation(s) supply heat to hard to treat properties?

Should we choose one reference network and determine one uplift (in p/kWh) applicable to all sizes of networks, or should there be several based on a number of differently sized reference networks?

Comments:

Many of our comments have been included in response to question 21, but are included here again for completeness

It is important to include an uplift for new network developments but consideration should be given to differentiating between those which are heat only and those which involve CHP. For those which are associated with biomass CHP, even premises relatively close to the power station **should** be considered in any additional tariff as it is important to encourage CHP as a more effective way of using renewable energy and reducing CO₂ emissions than separate biomass schemes. If there is no such encouragement such premises, then there may well be an unintended consequence that such premises opt solely for a stand alone additional biomass boiler rather than effectively exploiting the heat from the CHP station.

The impact of any uplift tariff in any area should be a commercial matter between the heat provider and the client, but to encourage CHP use in preference to other individual schemes, uplift incentives will be important. There should be a simple way of assessing these uplift tariffs and scope for variation in this uplift from one area to another should be available probably via a banded scheme. The basic identification as to which uplift band a scheme falls should address the issues of heat density and pipe length distance and could readily be determined as a heat load – distance moment as follows

$$\text{Mean Heat load - distance moment } (M) = \frac{\sum p R_i H_i}{n}$$

Where

p is the proportion of the total heat available from the station that is used in the district network.

R_i is the distance of the customer from the power station (in km)

H_i is the heat load of that customer (in kW)

n is the total number of customers.

Such a parameter M would provide a means, via banding, to provide a higher uplift for those schemes with more distant customers and would be preferable to a single uplift tariff. Furthermore, those schemes with high heat loads close to the power station will have a lower M value as would those where only a small percentage of the heat from the power station is used.