Renewable Heat Incentive: Consultation on the Proposed RHI Financial Support Scheme

Response from E.ON UK

Headlines

Access to and Effectiveness of the RHI

- For the RHI to be a success participants must be educated via a communications strategy for industry and the general public. A Government communications strategy, that is both clear and coherent, is pivotal in providing potential heat generators with access to the impartial information and advice that they need in order to be confident of investing. Ensuring this is in place before the RHI goes live will be essential to its early success.

- Consumers must be able to understand how to access the different support schemes for energy efficiency and renewable heat and electricity generation available and then to assess the appropriate mix of investments to ensure that the CO_2 impact of their energy consumption is reduced in the most cost-effective manner from their perspective. Government and energy suppliers have both an important role in supporting customers in making the right decisions.

- The Government needs to identify a mechanism for identifying, targeting and providing additional support to consumers on low incomes including those in rural areas and off the gas grid to ensure they are able to benefit from the RHI. This should enable them to avoid upfront capital costs.

- We need to leave the delivery of the RHI open for innovative financing packages. There are a number of difficulties with funding under the PAYS scheme to enable this to provide funding at an affordable interest rate which need to be addressed as part of both supporting investment in the RHI and energy efficiency which Government needs to consult further on.

The Role of Ofgem

- We welcome the proposal that the administration of the scheme will be carried out by Ofgem E-Serve. Having said this, the administration of the RHI scheme is a task far greater than any that Ofgem has been required to do to date. We would urge Government to ensure that Ofgem is well resourced to administer this scheme and that measures are put in place to support them at an early stage. It is also essential that the administration of the scheme is carried out efficiently and in a cost effective manner. A Steering Group should be set up as soon as practical with Ofgem, DECC and Industry to ensure this support is in place and that lessons are learnt from the work underway as part of the FIT scheme.

RHI tariff levels and Biomethane

- Biomethane, whether for use in heating or for power generation, can make a valuable contribution to reducing the carbon impact of gas consumption. Incentivising the consumption of biomethane would provide an additional stimulus to biomethane development, by creating a market which biomethane producers can respond to. It would, for example, allow biomethane to be used for the supply of heat to zero carbon homes and CHP plant.

- Overall we support the proposed tariff levels for renewable heat technologies; however we believe that the proposed tariff level for biomethane is currently too low to stimulate demand and should be raised. We attach supporting documentation to show why this is the case (See Appendix A).

District Heating Networks

- We welcome the inclusion of district heating within the proposals. Currently, district heating is one of the most practical ways of reducing carbon across multiple residential and commercial properties and it enables rapid switching to renewable fuel sources.

- It is also an efficient way of moving heat around a densely built environment. We believe this provides a significant opportunity to encourage the growth and expansion of networks in terms of changing use of heat in the future.

- The level of reward needed to make district heating network generation plant from renewable sources viable needs to reflect the lower heat load compared to industrial loads. It is also necessary to provide an uplift to compensate for the extra costs, compared to industrial CHP applications, for the additional back up and peaking plant required plus the costs for the district heating pipe work infrastructure. The level of support for district heating should aim to create a level playing field between it and alternative renewable heat technologies such as ground source heat pumps.

- The District Heating uplift should not be limited to hard-to-treat building, as many of these buildings will be dispersed across given locality. Limiting the uplift therefore to hard to treat buildings may result in networks bypassing non-qualifying buildings even if they could benefit from renewable heat from district heating networks. Any support for the development of District Heat Networks should stimulate 'logical networks' which have the potential to expand with new opportunities. E.ON believes, therefore, that the definition of hard to treat be removed from the requirement for receiving the RHI DHN uplift.

Consultation Questions

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?

Financing the RHI

1. Whilst we understand that Government will continue to review how the scheme is financed, we would like the following points to be considered when developing this mechanism:

    - E.ON believes that the RHI should be funded by a levy applied only to fossil fuels for the purposes of supplying heat to final consumers, and that power generation should be exempt because electricity supply is already subject to the RO, FITs and the EU ETS;

    - Fossil fuels supplied to CHP plants for both heating and electricity should be exempt to ensure that CHP plants are not disadvantaged compared to non CHP power plants;

    - Where the levy is applied, it should reflect the environmental impact of the fuel and be calculated on the carbon emissions which arise from the conversion to heat. Therefore, the higher the CO_2 emissions per kWh of the fuel, the higher the levy on these suppliers should be;

    - All gas, coal and oil supplied for residential and SME use should be regarded as supply for heat (as virtually all fuel in this category will be consumed for heat production); it would be impractical to measure the small volumes of fuel used for other purposes or unused. In respect of the supply of gas for large scale industry, there will need to be a process for identifying and separating out fossil fuel supplied for heat and for other purposes;

    - The Government should not implement a cap on the amount of levy paid. This would distort the market by effectively imposing a lower rate/tonne on fossil fuel supply above a given level. A cap could easily lead to suppliers aggregating sales to avoid the levy.

Interaction with other schemes

2. There is little reference to how the RHI would interact with other policies such as CERT, CESP and FITs. With a number of schemes being administered in different ways, customers may be discouraged from taking action by the complexity of the different processes. Therefore, it is critical that the body proposed in the HEMS strategy to provide clear and independent advice is established at the earliest possible opportunity. Consumers must be able to understand how to access the different support schemes available and then to assess the appropriate mix of investments to ensure that the CO_2 impact of their energy consumption is reduced in the most cost-effective manner from their perspective. Energy suppliers should also have an important role to play in providing information to customers given their involvement in all the key Government support mechanisms.

Fuel Poor

3. Whilst we support a levy that reflects the CO_2 emissions arising from the fuel used, this may have an adverse effect on rural and 'off gas' properties as oil and coal supply for heating will incur a higher rate than gas. These households make up a significant proportion of the fuel poor; 20% of fuel poor households are rural and 25% of fuel poor households are 'off gas'[1]. A mechanism is therefore required to identify and target these customers to alleviate the burden of the scheme and to ensure consumers on low incomes do not have to commit significant upfront capital. The Government should consider this as part of its promised consultation later this year. Some current mechanisms are not appropriate. For example CERT is a market based scheme which works well in keeping costs low by prioritising the most cost effective measures but rural housing is often hard to treat and is therefore more expensive. Also the definition of the 'Priority Group' in CERT is likely to exclude many fuel poor households as it is based on qualifying benefits as opposed to the proportion of income accounted for by the fuel bill. An appropriate mechanism could, however, be through CESP, Warmfront or Decent Homes.

4. The RHI proposal notes that Registered Social Landlords (RSLs) will be able to access affordable finance and bulk deal savings. Whilst it may be a reasonable assumption, we are concerned that this will not be fully realised. For example, one Housing Association that we have spoken to explained that once the LCBP2E funding for ground source heat pumps (GSHP) expires they will almost certainly cease to buy GSHPs (except where it is the preferred solution for new build Code 4+). This is because they do not have the upfront capital to fund purchases, even when the payback is guaranteed through the RHI. Whilst we understand that Government is looking at ways to release capital to Local Authorities (borrowing against future FIT/RHI income) this facility is not available yet and it may not be available to RSLs (except perhaps those set up as Arm-Length-Management-Organisation (ALMOs) within the LA). We therefore recommend Government consider the practicalities of this and work with RSLs to understand the barriers they face; if the right measures are put in place this market could grow exceptionally rapidly.

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?

5. The most efficient approach to the development of an effective range of financing mechanisms is to support investment in the RHI through delivery of attractive, inflation-proofed, rates of return, and the removal of any existing barriers within the current fiscal framework. The RHI consultation proposes a number of options for financing the RHI and we do not believe this should be limited or mandated to one model only; all the options should be left open in order to facilitate innovative financing packages.

[1] 2010 Renewable Heat Incentive Consultation pg18

6. PAYS is specifically mentioned as one option within the consultation and we look forward to engaging with Government on the practicalities of this in future. We believe PAYS will be a very useful tool for customers to access finance, but there are a number of risks that have yet to be quantified, which could act as a barrier to such finance schemes coming forward on a large scale:

    - Much of the renewable heat technology market is still relatively undeveloped, especially in the residential sector and may be perceived as having a high risk factor. In particular, investors may be concerned that the lifetime of the equipment will not meet that of the loan, potentially leaving consumers without the RHI payment to put towards the remainder of the outstanding finance;

    - For the PAYS scheme to succeed, customers will need to be offered loans at affordable interest rates. This raises the issue of the credit status of individual customers and how the borrower manages its default risk. How this will work in practice is yet to be explored in either the RHI or HEMS strategy and we look forward to further consultation on this;

7. Other difficulties with financing arise where the equipment is integrated into a building and a borrower is unable to repay their debt. Although the lender may wish to repossess the equipment in the event of non payment and have this written into a contract, the lender has no right to interfere with the buildings fabric so is unable to recover equipment without a court order giving them access to the property. Furthermore, the property has to be 'made good' after the removal of the equipment which can be costly and second hand technology is not eligible under the RHI[2]. This may restrict the development of the scheme. Removal of heating from a property also raises social and health and safety issues so recovery of equipment may not be a credible option which may in turn affect how a lender manages debt.

8. A further barrier may also be the current accounting treatment of capital allowances. Capital allowances cannot, at present, be claimed on equipment installed in a dwelling house and leased to the customer and this could raise the cost of leasing or hire/purchase agreements as a source of finance for microgeneration equipment. Therefore, a change to the rules is necessary to enable microgeneration equipment to be leased to householders and small business owners.

Q3: Do you agree with our proposed RHI registration and payment approach? If not, can you suggest how this approach can be improved?

9. Registration and payment must be simple. Ofgem has been appointed to act as a central agent and, therefore, it is essential that Ofgem has the necessary resources in place to carry out this task effectively and efficiently. It may be appropriate to outsource some of its function through a tendering exercise to appropriately experienced organisations to design, build and operate the payment system.

[2] 2010 Renewable Heat Incentive Consultation pg30

10. The administrator's role must include provision of an efficient complaints handling process with an adequate call centre to handle the appropriate level of enquiries. The provision of high quality customer care is critical to the long term success of the RHI.

11. Lessons must be learnt from the FIT implementation and it is critical to engage on the structure and implementation of the RHI at an early stage. A Steering Group should be set up as soon as practical between Ofgem, DECC and suppliers to ensure issues are managed without delay in order to avoid the problems encountered under the FIT scheme.

12. The introduction of the RHI is likely to drive a rapid uptake of heat pump technologies. Heat pumps have a very high power requirement and our internal modelling has shown that these devices (alongside electric vehicles) could create significant problems for electricity distribution networks going forward. In the medium to long term, smart grids are likely to provide some answers but, in the near term, ad-hoc local network issues including voltage instability, thermal overload and supply quality could increase both DNO operating and capital costs. A similar tracking mechanism to that required for micro-generation (in Engineering Recommendation G83) should be set up to enable the DNO to understand where the technology is being connected so that it can assess what action may be needed before quality of service is adversely impacted.

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?

13. Yes, we are very supportive of this as it is important to ensure customers are well protected and we believe this to be a reasonable capacity level for requiring accreditation.

Q5: Where MCS is extended beyond the current limit, do you agree that we should require the use of MCS certified installers and equipment for eligibility for the RHI?

14. Yes we agree with this.

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?

15. We believe that MCS should be the main accreditation body. We recognise that the MCS scheme is not flawless, but the number of concerns that have arisen from it can be addressed in time to enable it to be successful for the RHI.

16. There are a number of internationally recognised standards and where appropriate these should also be treated as though they are equivalent to the MCS, for example Solar Keymark.

17. It is critical that the RHI scheme, from the outset, specifies the standard of equipment and installation capability that is required in handling projects greater than 45kW. This is to avoid issues like those caused when LCBP2E extended grants up to 300kW limit but did not have in place the standards which needed to be complied with (e.g. product appears on the Energy Technologies List etc).

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

18. We believe that new plant, any increase in capacity of an existing plant and any plant where the prime heat generator has been replaced should be eligible for RHI support.

19. For existing plants that currently operate as fossil or renewable fuelled electricity only plant, it should be possible to allow these stations to have access to the RHI if they convert to renewable fuel and develop heat capacity. In the case of CHP and district heating, new equipment should be defined as equipment relating to the supply of heat from the interface with the steam turbine through to the end customer. Defining new equipment in this way will enable a wider range of existing stations to participate. Such plants will still need to invest in additional equipment such as back up boilers, heat exchangers and heat pipe work, and should therefore have access to the same tariffs to allow better utilisation of existing power generation plant.

20. The extension of any existing district heating scheme network to be used for renewable heat supply, or increases in capacity should be eligible for support under the RHI, as should the capital cost of any work on the existing network to enable that connection or improve efficiency of the network. New networks using existing CHP plants for the supply of renewable heat should also be eligible.

21. Heat generation from bio-fluids should be included within the RHI. Heat from organic process waste, produced as an industrial by-product should also be eligible and classified as a renewable fuel for the RHI. This would incentivse, for example, where combustion of organic process waste (for example from the paper industry) to produce industrial heat, reducing landfill requirements and displacing fossil fuel use.

22. Cooling ('chill') should qualify as renewable heat, as energy is required to create chill in a very similar way to the creation of heat. In many cases, ranging from refrigeration distribution centres to data centres, biomass CHP plants can optimise efficiency through these ideal low grade and base load applications.

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?

23. We have no comments on this question.

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?

24. In general, we agree with the limits suggested. However, we do not agree that the RHI should be subject to compliance with emission standards, as emissions standards are already regulated via international and national legislation. Standards need to be based upon best

available technique most relevant to the size of plant, to ensure the correct balance between cost and potential impacts upon health and air quality.

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?

25. E.ON agrees that there are strong synergies between heat and broader objectives of encouraging better energy efficiency. We therefore support the proposed approach to encourage adoption of a basic level of energy efficiency measures in homes, by means of deeming the RHI at a small and medium-scale level. Deeming energy heat loads will assume a certain minimum level of energy efficiency measures has been implemented: at least 125mm of loft insulation, and cavity wall insulation where possible and appropriate is installed in the home. This level is not onerous, and whilst we agree with the consultation that this does not need to be mandated, using deeming should at least encourage customers to take this up first as otherwise the full benefits will not be realised.

26. Whilst ensuring homes meet the right level of energy efficiency remains a key priority, we do not wish to see householders deterred, particularly when customers are looking to invest in RHI eligible equipment as a distress purchase. It is necessary to balance the need to encourage consumers to increase the efficiency of their homes whilst not deterring them from purchasing RHI eligible technologies. We believe that both the independent advice body proposed in the HEMS publication and installers will play a central role here in terms of guiding customers.

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?

27. One way to mitigate this undesirable outcome is to set minimum fabric efficiency standards under the Code for Sustainable Homes when specifying renewable heat technologies. In order to enable this, a requirement will need to be added into the recently closed Code consultation; it should fall within the remit of Building Control Officers to ensure that house builders are complying.

28. Further consideration on how the RHI can best be applied by house-builders post 2013 is required, especially in regards to bringing benefits not only to their home owners (i.e. customers) but also the community as a whole.

29. The recently published 'Home Energy Management Strategy' and the currently open consultation on the 'PPS: Planning for a Low Carbon Future in a Changing Climate', encourage, where appropriate, the deployment of district heating schemes. We welcome this, and believe that in the right settings, district heating can represent a 'future proof' infrastructure investment to transfer efficiently low carbon/renewable heat around a built environment. However, one of the most significant barriers currently facing the deployment of such schemes is the cost of pipe work and associated legal costs.

30. We are concerned that the high cost of pipe work may deter house builders from connecting their developments to existing district schemes, even where they are in close proximity, and instead pursue on-site solutions, which may be less carbon and cost effective overall. Connecting to an existing scheme could not only benefit the house-builder by providing access to a renewable source of heat (thus enabling compliance with building regulations), but it could also bring benefits to existing customers and the wider community. The more loads/customers a heat network has, the greater the possibility of accessing economies of scale which should in turn reduce the cost of delivered heat to all customers. However, we anticipate that as district heating becomes more widely deployed in appropriate settings, more pipe work suppliers will be attracted to the market and thus in the longer term this barrier will become less significant as the market becomes more price competitive. However, in the short term this cost barrier may push developers to deploy solutions that are not as carbon effective at a building scale and thus the growth of district heating schemes in relevant areas may be inhibited.

31. Therefore, we would urge Government to consider how the RHI could be applied within a new build context, to support and encourage developers to connect to existing or planned district heating schemes using renewable heat and thus support their organic growth, aligned to a local spatial plan. We would suggest that in instances where connection is both logical and consistent with the local energy master plan, and where the cost of connection is a barrier, that housebuilders are able to access a level of RHI which thus avoids them deploying less carbon effective, renewable solutions on their site.

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?

32. Due to the relatively high costs of heat metering for small-scale heat generation (perhaps in the order of £200 for microgeneration-level heat), we accept that deeming of heat is appropriate at this level. Larger-scale technologies should have heat metering, and metering should be used wherever economically viable. The current method used by CHPQA is generally reasonable and appropriate.

33. We also believe that deeming at a domestic level will encourage energy efficiency (if set at the right level as discussed above in response to question 10).

34. We would urge government to put in place measures to ensure that customers are in fact using the plant installed, avoiding situations where the RHI is still being paid for a system which is no longer functioning. For example, recipients of the RHI could be asked to confirm annually that their system is fully operational, or have an annual inspection, and it should be made clear that receipt of the RHI where renewable heat is not being produced is classed as fraud.

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?

35. Evaluating the usefulness of existing processes such as SAP/SBEM and EPCs is an appropriate starting point. SAP already provides an output relating to heat load and, given its centrality in determining the energy performance of a dwelling, we support its use in principle in implementing deeming at a domestic level. SAP determines approach for occupancy levels, water usage etc and therefore has many benefits. However, we believe SAP should be reviewed as SAP data is essential in designing a high quality appropriate solution for heating replacement. It should also be reviewed to ensure it remains effective and appropriate for the purposes of deeming over the life of the RHI.

36. There is a concern that for commercial buildings SBEM is not wholly suitable since the occupancy/usage of a building can vary dramatically over a couple of decades. Therefore, it may be preferable for heat to be metered in any building which is not a dwelling.

37. If these tools are to be used, we propose that they are subject to rigorous and urgent assessment of how they function in real-life situations, so that any shortcomings can be addressed as a matter of urgency. The results of the assessments should then be published, alongside any proposed plan for rectifying the defects so that confidence in the schemes can be enhanced.

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 over generate 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?

38. We agree that the potential is low provided that any vents on such a heat network are also metered to show when “potential” over-generation could be occurring. In this scenario, the use of such vents would have to be agreed as to when it was acceptable to vent and when it was not. The solution would be to make it clear in the contract for acceptance of the RHI, that if someone generates additional income and dumps the heat that this constitutes fraud.

39. Metering at large scale can also help to ensure that the technology is working efficiently. If a technology is not set up properly then it may over compensate as a result of this. Understanding the output pattern can help determine whether the kit has been appropriately set up and may actually help to reduce the need to over-generate.

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?

40. The level of support regarding the RHI needs to consider not only the amount of revenue lost from ROCs/electricity etc but also the additional risk that the generator is taking on regarding operational guarantees which would not be relevant to an electric only plant. In addition, back up plant will need to be required and additional fuels will be necessary for times when the biomass and energy from waste (efw) CHP plants are unavailable.

41. A figure towards the higher end of the proposed tariff levels for large scale biomass CHP plant would seem to be appropriate to initiate biomass development in industrial areas

where large heat loads are sustainable. However, this should be over a 20 year period as is the case under the RO. Shorter periods would not support investment given the additional risks associated with CHP/Heat plant (continuity in the heat load from industrial customers) over electricity-only generation. In terms of indexing or grandfathering the same fuel will be used to generate both heat and power for biomass CHP plant and the reward mechanism needs to be consistent. Fixed rewards under the RHI imply fixed price feedstock, a variable fuel ROC in the RO implies variable fuel costs. This is inconsistent and needs to be aligned.

42. For district heating networks to residential or commercial properties, generation plants need to be compensated for lower load factors compared to industrial loads. A district heating network where the biomass CHP plant is designed to provide the peak heat demand will typically export less than half of the heat which could have been supplied to a baseload industrial customer. It is also necessary to provide an uplift to compensate for the extra costs, compared to industrial CHP applications, for the additional back up and peaking plant plus the significantly higher costs for the district heating pipework infrastructure. This requires further analysis but our preliminary view is that generating stations supplying district heating networks should receive double the incentive received by CHP industrial applications, as a minimum.

43. A large-scale good quality efw CHP plant could achieve 0.5ROC (deemed) or higher (according to FMS) for the power it generates under the RO. Since the efw plant efficiency is lower than a biomass plant and receiving less ROCs because of the lower bio-content of the fuel, the proposed £25/MWh is not appropriate for an efw CHP exporting heat which is less than 30% of its input energy. A range of £35-40/MWh would seem to be reasonable. However, this may over-incentivise large scale heat schemes. A hybrid incentive scheme, whereby efw CHP projects continue to be supported by the RO up to CHPQA's quality index of 100, and then receive the RHI for further heat export, may be appropriate.

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?

44. We have understood this question to relate to onsite combustion and at present the use of biogas within an onsite CHP will attract ROCs. Any additional incentive should be considered where the heat is useful and could be based on the additional cost of gasifiers and the down rating of a CHP plant as a result of the lower calorific value of syngas/biogas.

45. The majority of this biogas is produced by water companies or AD plants, which tend to be away from areas that can utilise this heat. This does not incentivise the use of CHP. We believe it would be better to incentive it at the point at which it can be used which may be onsite or offsite (i.e. transported through the grid). Please refer to Appendix A which discusses a similar proposition for biomethane.

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?

46. No.

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?

47. On the whole we support the approach that Government has adopted in setting tariff levels, given that it has not decided to cap the level of support for more expensive technologies as we recommended in our response to the heat and energy saving strategy consultation.

48. For heat from biomass or from efw the tariff level lifetimes should be extended to be in line with those of the Renewables Obligation. Best practice for biomass should be for the fuel to be used as efficiently as possible within a CHP plant. This will not only improve efficiency but also provide the best economic returns for a generator which should partly mitigate the risks to generators of increasing fuel prices. However, if the RO and the RHI lifetimes are of differing timescales (15 years for the RHI and 20 years for the RO), this would mean an unfair advantage to younger plant (still receiving the RHI, when older plants have reached the end of the 15 year incentive period), which would be able to use this additional revenue to pay a higher price for fuel due to the incentive mechanism price distortion. As a worst case scenario this could mean early closure of plants which are unable to compete for fuel due to the imbalance in revenues.

49. A figure towards the higher end of the proposed tariff levels for large scale biomass CHP plant would be appropriate to initiate biomass development in industrial areas where large heat loads are sustainable. However, this should be for a 20 year period as is the case under the RO. Shorter periods would reduce investment incentives as discussed in response to Q15.

50. Please also refer to our response to Q15 for our views on RO/RHI support for efw CHP plants.

51. We believe the proposed tariff level **for biomethane** is too low and that it will not incentivise any investment. The tariff should be based on the same methodology used for rewarding other sources of renewable heat, aiming to provide a specific rate of return on investment. We would like to see **the tariff level raised to 8p/kWh** and Appendix A (confidential) provides evidence to support this.

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?

52. A situation could arise where biogas is produced on site either via an AD process or advance thermal gasification and used in a gas CHP. It is not commercially practical to run a separate CHP for the biogas therefore we do not agree with the proposed approach; this situation should be treated as for the bioliquid example illustrated in the RHI consultation in chapter two.

53. For efw plants, it is both impractical and financially unviable to use dedicated boilers for renewable fuel (i.e. >90% bio energy content fuel). Waste streams such as Municipal waste, SRF, C&I waste as well as waste wood are normally delivered on site separately but they share the same reception hall and fuel bunker. Separating these waste steams into biomass and non-biomass and burning those in separate boilers is unreasonable.

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

54. Yes. District heating is currently one of the most practical ways of reducing carbon across multiple residential and commercial properties and enables rapid switching to renewable fuel sources. As with other infrastructure such as electric networks, heat networks are fuel agnostic, providing a system that can evolve over time responding to different priorities and costs. For example, a network originally serviced through coal boilers may move to gas CHP and then to biogas and heat pumps in the future.

55. However, there are still a number of commercial challenges facing the introduction of district heating and in particular the costs to the customer compared with traditional gas heating. The price comparator is difficult as the cost of the infrastructure needs to be paid for across a small number of users. Therefore, an incentive payable for the heat taken from a heat network will facilitate the adoption of heat networks throughout the UK and greater acceptance by customers.

56. The RHI has the potential to drive a step change in renewable heating in the UK. In many areas individual solutions may be both cost and carbon efficient but in areas of dense buildings, individual solutions may be difficult to deliver and could potentially lead to significant challenges for infrastructure. For example, the delivery and storage of biomass in urban areas can be difficult and carbon intensive but energy centres[3] can resolve these issues by providing a central location for fuel delivery and storage and using lower carbon delivery options such as rail freight. Furthermore, in dense urban areas where electricity networks may be under stress, a move away from gas heating to heating using electricity may significantly increase the burden on the distribution network. The installation of a district heating network which could combine electricity and heat generation with the use of technologies such as heat pumps, may avoid some of the issues highlighted whilst delivering significant renewable heat. In some situations district heating may, therefore, be the best or only solution to delivering renewable heat and, if the RHI is to be available to as many individuals and organisations as possible, it is vital that renewable district heating is supported from the outset of the scheme.

57. The level of reward needed to make district heating network generation plant from renewable sources viable needs to reflect the lower heat load compared to industrial loads. A district heating network where the biomass CHP plant is designed to provide the peak heat demand will typically export less than half of the heat which could have been supplied to a

[3] An energy centre may be a backup boiler to feed the district heating network

baseload industrial customer. Further analysis is required on this but our preliminary view is that generating stations supplying district heating networks should receive double the incentive received for heat delivery from renewable CHP industrial applications as a minimum. It is also necessary to provide an uplift to compensate for the extra costs, compared to industrial CHP applications, for the additional back up and peaking plant plus the significantly higher costs for the district heating pipework infrastructure.

58. The introduction of the RHI may incentivise developers to install heat pumps and may act as a disincentive to the take up of district heating solutions where CHP and heat networks would otherwise have been a more cost-effective and lower carbon alternative. Therefore, any uplift for district heating should aim to create a level playing field between it and alternative renewable heat technologies.

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)?

59. The Government proposal is that only 'hard to treat buildings' be eligible for support under the RHI District Heat Network (DHN) uplift. However, the likelihood is that hard to treat buildings will be dispersed across a given locality. Limiting support to hard to treat buildings may mean that the resultant networks would bypass non qualifying buildings even if they could benefit from renewable heat from DHN. Indeed, the consultation appears to suggest that a potential penalty (through a reduced RHI uplift) could apply to a developer connecting ineligible buildings to a scheme supported under the RHI. If this were the case, the only solution open to buildings deemed ineligible for DHN support would be individual solutions even if this were at greater overall cost to the RHI scheme. Furthermore, the 'hard to treat' building requirement could trigger the development of sub-optimal networks both from a cost and efficiency perspective. Any support for the development of DHN needs to stimulate 'logical networks' which have the potential to expand with new opportunities. E.ON believes, therefore, that the definition of hard to treat be removed from the requirement for receiving the RHI DHN uplift.

60. Under any RHI DHN uplift, it is necessary to determine areas that are suitable for support. Determining uplift eligibility must be simple and cost effective, both for the developer and Government. A scheme requiring developers to provide substantial evidence to demonstrate scheme eligibility for the RHI DHN uplift would be costly to developers and resource intensive for officials reviewing each proposal. In addition, developers investigating the feasibility of creating or extending a network need to know in advance whether the scheme would be eligible for the RHI DHN uplift. We recommend, therefore, that eligibility for the RHI DHN uplift be determined by an existing metric of heat demand. The Government's decision to develop a UK wide heat-map, similar to that for London, provides a valuable

opportunity for developing a system for determining site eligibility. Sites with a heat demand above a given threshold should automatically qualify for eligibility for the RHI DHN uplift. Connection to buildings at a site would, therefore, not be restricted. Instead the developer would be free to seek to supply as many customers as possible from the network. The proposed methodology does, however, present potential problems for sites ideal for DHN but not recognised by the heat map for reasons such as a lack of adequate heat map resolution or specific building issues. As a result, E.ON recommends that developers be able to present proposals for DHN eligibility in areas not covered by the heat map for individual consideration.

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?

61. Our position on this issue is subject to ongoing analysis on the implications of biomass grandfathering under the RO. In general, E.ON feels that all tariffs should be grandfathered and fully fixed, other than to correct for inflation. This provides the certainty necessary to secure investment in most renewable heat technologies.

62. We can fully understand why DECC has proposed the alternative to full grandfathering for bio-energy, which is to "*split the bio-energy tariffs…into a [grandfathered] fuel component and a [free-floating] non-fuel component*". This would, in theory, allow DECC to alter the level of support in line with fluctuating fuel prices, thereby addressing one of the major risks for a bio-energy project.

63. However, based on our knowledge and experience of the market, we also strongly agree with DECC's observation that "*it would be very difficult, certainly in the near future, to find a reliable price index [for biomass]*".

64. Notwithstanding the level of support under each solution, the decision as to which is best (full grandfathering, or a split tariff which is partially grandfathered) is completely dependent on the detail of if and how DECC could achieve effective and timely biomass fuel indexation, for the likely spectrum of potential projects and fuel types under the latter option.

65. Clarification of this detail is being sought from DECC as part of the RO biomass grandfathering consultation; until this is available, it is not possible to justify a decision for bio-energy tariffs either way.

66. Equally importantly, the treatment of bio-energy under the RHI must be compatible with the RO, as under DECC's proposed transition arrangements, CHP generators would fall under both support mechanisms. Incompatibility would also be likely to result in fuel market distortion, which in turn would affect all biomass projects, not just those with CHP.

67. In light of the above, E.ON's position on this issue is subject to further analysis of the implications of (and will be outlined as part of our response to) DECC's consultation on biomass grandfathering under the RO.

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?

68. We support the proposal not to introduce degression from the outset. Given the challenge in meeting the UK's 2020 renewables target we need to ensure we drive uptake as quickly as possible. The market for heat is relatively immature and therefore introducing degression too early would be inappropriate.

69. Degression could and should be introduced when a critical mass has been reached in terms of renewable heat uptake and cost curves for key technologies can be observed to have reduced sufficiently.

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

70. We support the proposed approach, but would also urge Government to ensure that the Appendix Q process for evaluating and integrating new technologies into SAP is suitably modified to prevent it from becoming a barrier to innovation uptake.

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

71. The RHI should itself stimulate an increased take-up which will then lead to more sophisticated supply changes and ultimately lower unit costs. Technologies that provide better performance should emerge naturally if the degression and incentive levels have been appropriately set. We do not believe therefore that there is a need to impose any additional restrictions.

72. In addition, the creation of a mature, suitably qualified/accredited and competitive installation market is just as important as improvements in the design or efficiency of the product itself.

73. International comparison with countries such as Germany may be helpful.

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

74. Yes we find this to be acceptable.

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

75. We support the inclusion of provisions that would allow for emergency reviews, providing the criteria for what constitutes an emergency is clearly defined so that they are not triggered frequently. Such examples may include:

- changes in the energy market (to include relative fuel prices);
- material changes in capital or fuel costs;
- Technology developments that could not have been foreseen at the regular banding review, that are likely to have an adverse or material impact on the roll out of RHI accredited heat devices, or that will adversely impact on the security of supply or the ability of Government to meet internationally binding targets;
- Enduring changes in Exchange Rates (in particular £ to € for equipment/service supplies, and £ to $ to include fuel supply from overseas).

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?

76. Existing power plants constructed prior to 15th July 2009 should be encouraged to participate in expanding and creating new heat networks eligible for the RHI. Fossil plants that convert after that date to renewable fuel, regardless of whether the heat infrastructure exists or is new, should be eligible for the RHI. If a power plant installed before July 2009 seeks to develop a renewable fuel heat network then this should also be incentivised within the RHI mechanism. This is the easiest method to switch existing CHP stations to renewable fuels and increase the levels of renewable heat generated. CHP situations should be regarded as the highest priority for combustion of finite renewable fuel sources to ensure the fuels are utilised in the most effective way.

77. However these refurbished plants will have a lower capex than new plants which should be reflected in the tariff level offered. At this stage as costs are not defined clearly we would welcome the opportunity to discuss what the optimum tariff level should be with Government.

78. We support the proposed 2013 date after which CHP biomass projects can no longer claim the incremental ½ ROC support under the RO for CHP although renewable CHP with district heating will require a higher level of support and the introduction of an uplift, as discussed in response to question 20. However, in respect of efw CHP projects (which E.ON is now developing as a business in the UK) developers have expressed concern about the 2013 date in relation to the impact on the viability of efw projects of the new RO +RHI approach. They have proposed, because of the extended timescales for bringing efw projects to fruition (including negotiating contracts under pfi arrangements), a later date (say 2016) which would enable existing projects already in preparation to move to an investment decision within the existing framework. We would recommend that DECC explore the impact of the change with the efw industry to ensure that incentives to invest in efw projects are maintained.

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?

79. Overall we support the RHI proposal and believe the approach that has been adopted balances the need to protect the scheme whilst limiting abuse. This is a new scheme that will be heavily influenced by the way that it is run and therefore setting up the scheme in a timely manner, that is simple and easy to access by all customers (large and small, energy professionals and non-energy professionals) is essential. We look forward to working with Government to take this proposal forward and ensure it is a success.

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?**

80. There is no standard heat network that we recommend to use as a reference site as each site and development has it own challenges including heat sources, customer numbers, pipe lengths, demand profiles and thermal losses. We have a number of sites currently under operation and would be happy to work with Government to determine the level of uplift. We therefore recommend that the uplift is determined by assessing several reference networks across different type of development and locations

81. As discussed above, the introduction of RHI for heat pumps and solar will disincentivise developers from taking up district heating solutions, which in many cases represents a more efficient and lower carbon solution. Therefore any uplift should seek to level the playing field for district heating.

Appendix A: CONFIDENTIAL, not for public distribution

BIOMETHANE tariff level

The proposed tariff level for biomethane is too low to incentive production and injection into the grid. As such we have included a cost analysis to indicate the level of biomethane we consider is appropriate. The approach that Government takes to determine this level should be in line with that taken for other technologies i.e. the rate of return for biomethane should also be set at 12%.

In addition to the insert below we attach a separate document which presents the detail behind this cost analysis, which is based on 3 real-life biomethane generation plants operated by EC&R in Germany and Sweden. This analysis indicates that the proposed 4 pence / kWh is too low and should be **raised to 8pence / kWh**.

Our analysis is based on Einbeck and Aiterhofen which are medium-size crop-based plants (approx. 50 resp. 90 GWh/a), Falkenberg is a medium size organic waste plant (37.5 GWh/a).

Whilst there are likely to be differences in various technologies, local price structures, energy concepts etc, these figures are based on a real situation.

We would welcome the opportunity to discuss this further with Government.

[Please see appendix A2 for a larger view]

Cost of bio-methane generation

Assumptions: 12% rate of return on equity before tax; finance with 25 % equity / 75% debt at 5% p.a. interest rate; Energy quoted in Hs (Upper heating value)

Einbeck		**Aiterhofen**		**Falkenberg**	
industrial medium sized plant		industrial large sized plant		industrial medium sized plant	
based on crop as a feedstock		**based on crop as a feedstock**		**based on organic waste as a feedstock**	
investment (incl. land) m€	11	investment (incl. land) m€	21	investment (incl. land) m€	8
useful life in years	16	useful life in years	16	useful life in years	16
ct/kWhs base	8.22	ct/kWhs base	8.44	ct/kWhs base	8.34
capacity GWh/a	49	capacity GWh/a	91	capacity GWh/a	37.5
investment/capacity ct/kWhs/a	0.224	investment/capacity ct/kWhs/a	0.231	investment/capacity ct/kWhs/a	0.213

production costs	**ct/kWhs**	**share**	**production costs**	**ct/kWhs**	**share**	**production costs**	**ct/kWhs**	**share**
capital costs	2.71	33%	capital costs	2.95	35%	capital costs	2.42	29%
substrate incl. transport	3.04	37%	substrate incl. transport	3.12	37%	substrate incl. transport	2.75	33%
opex	1.81	22%	opex	1.35	16%	opex	1.92	23%
electricity	0.49	6%	electricity	0.84	10%	electricity	0.50	6%
heat	0.16	2%	heat	0.17	2%	hygenisation	0.75	9%
total production costs	**8.22**	**100%**	**total production costs**	**8.44**	**100%**	**total production costs**	**8.34**	**100%**

In £ Sterling:

exchange rate on March 30th, 2010
1,00 EUR = 0.8933 £
1,00 £ = 1.1194 EUR

	pc/kWhs		**pc/kWhs**		**pc/kWhs**
total production costs	**7.34**	**total production costs**	**7.54**	**total production costs**	**7.45**

Appendix B

OPTIMISTING THE USE OF BIOMETHANE

Biomethane can make a valuable contribution to reducing the carbon impact of gas consumption whether for use in heating or for power generation. In our earlier response to the DECC Heat and Energy Savings consultation in 2009, we argued that biomethane should be rewarded at the point of injection into the NTS through a premium tariff (either a fixed price or percentage uplift) paid per kWh in addition to the wholesale price of natural gas, but the producer should have the option to forego the premium in order to be able to sell the gas as a renewable energy source particularly in the context of heat and power supply to zero carbon homes or other similar developments.

We believe that incentivising the consumption of biomethane will create an additional market that biomethane producers can respond to, which can lead to new value chains emerging; bringing with them new 'green jobs'. An example of a new market that presents a clear customer base for biomethane is for the supply of electricity and heat to new zero carbon home developments. Such an approach would greatly help biomethane producers find a purchaser for the relatively small volumes of biomethane that might be produced by an individual installation.

Biomethane production is best located near to sources of organic waste or energy crops which tend not to be suitable for siting in residential areas. Furthermore, biomethane is best transported across the national gas grid as virtual biomethane given the cost and CO_2 emissions associated with transport by road of biogas (given that it would not be treated for injection into the grid in these circumstances). Incentivising biomethane consumption in this way therefore requires a process which demonstrates equivalence between gas injected and consumed.

We believe that there are a number of options:

1. A certificate scheme could be introduced which would allow biomethane injected at one point on the national gas grid to be related to gas purchased, e.g. a 'green gas certificate';
2. It could be sufficient to demonstrate a contractual relationship between the biomethane injected and purchased.

Under either of these options the RHI could be paid at the point of injection or consumption.

The current drafting of the RHI scheme, as stated in the consultation, does not include any incentive for the use of biogas (biomethane or otherwise) offsite but does include incentives for the injection of biomethane into the gas grid. It is therefore assumed that once the feed-in tariff has been taken, the gas loses its 'green' credentials and therefore will attract no more benefits in the form of ROC's or RHI if used in an offsite CHP or boiler. The impact of this approach is unlikely to stimulate any demand side activity and in fact is likely to undermine the emerging demand for biomethane. For example, Ecotricity have recently announced that they intend to sell green gas to customers at no extra cost compared to natural gas.

In addition, demand for gas from small producers is unlikely to be high due to the administration burden for multiple purchase contracts and this will squeeze the underlying gas price.

As such, we believe that a better model would be the one that is detailed above, and we urge Government to allow the users of the gas to claim the benefit in the form of ROCs and or RHI, thus stimulating the demand side but flowing these premiums back to the supply side in the form of a premium for the Green Certificate.

We also note that Ofgem has recently launched a system for certificating 'green electricity' tariffs to consumers to ensure genuine additionality. It is highly likely that environmentally aware consumers may wish to access a similar system for green gas. **Therefore, we suggest that developing a biomethane certification system for linking consumption with production from the outset of the RHI may prevent some of the issues which arose with green electricity tariffs emerging with biomethane injection**.

How a certification system could operate

A green gas certification system would enable generators to purchase certificates for biomethane injection issued to injectors by the regulator. The certificates system would create a traceable pathway for green gas from injector through to end user. A biomethane injector could supply evidence of injection (as issued by the national grid) to the regulator in return for green gas certificates for every kWh injected. Certificates could be traded with eligible generators who could then claim the energy produced as renewable (Fig. 1). The market for certificates would enable injectors to obtain a return on their investment whilst promoting competition among injectors to prevent artificial price inflation. The certificates system would provide evidence to purchasers of heat and power that the source was renewable. The number of certificates required by a generator could be determined by the qualifying fuel input (QFI) under the CHPQA. If a generator only bought certificates to cover part of the QFI then only that proportion of heat and power would be considered renewable and sold as such. By ensuring scheme transparency, customers could verify if they were paying a reasonable premium price for green electricity. The generator would be permitted to sell their electricity and heat as renewable.

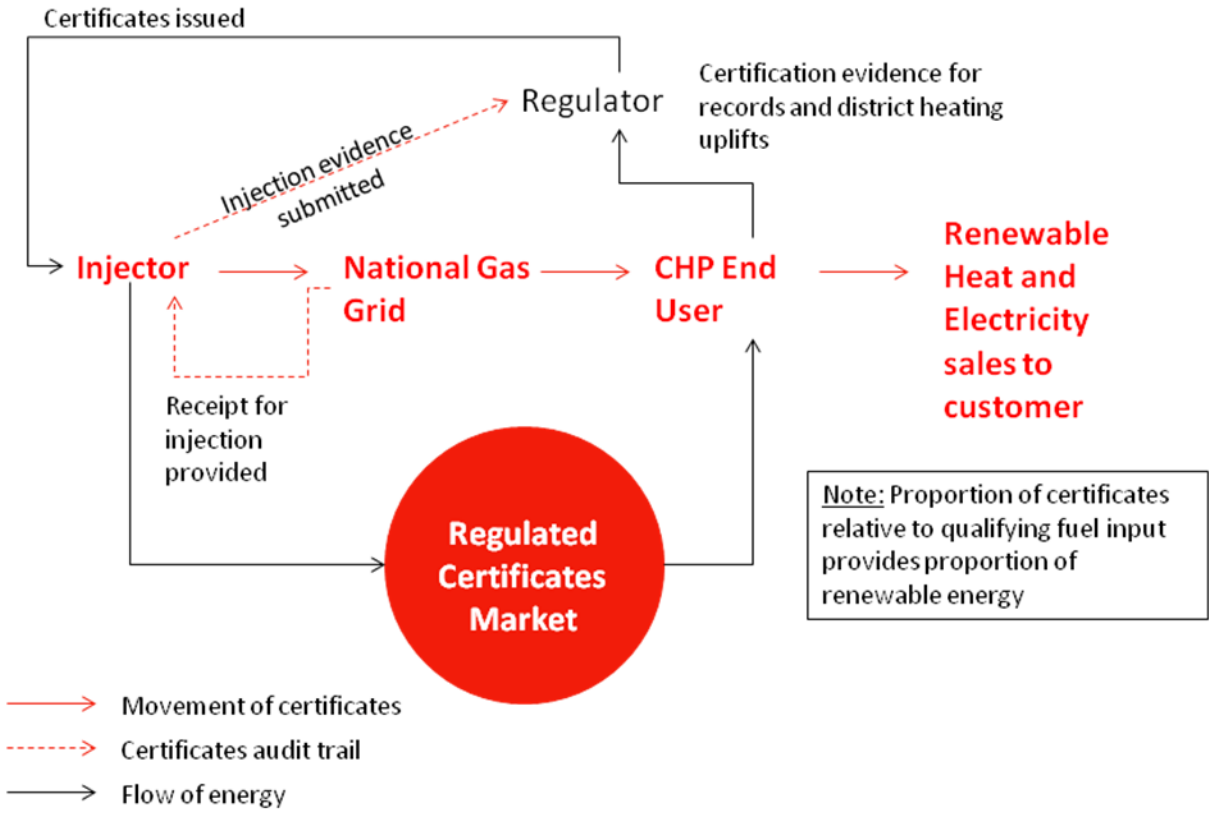

Figure 1: Proposed structure for the operation of a biomethane certification system.

Timeframe for implementation

E.ON recognises the tight timeframe for implementation of the RHI and appreciates the work carried out by government to date on biomethane. **We therefore recommend that the certification scheme be introduced alongside the injection tariff**. For certain types of development, such as zero carbon district heating, certification may be made mandatory.

Initially, injectors should obtain the injection tariff by selling certificates on the market to those wishing to purchase them. The injection tariff and certification scheme should be reviewed at the first RHI review (Table 1). In addition, it would be possible to introduce banding similar to that seen under the RO to ensure that early adopters could not be undercut by new entrants as capital costs fall. Similarly, new methodologies for converting untapped sources of bioenergy could be incentivised through banding if appropriate. As a market emerges for the certificates it may be possible to reduce the tariff level, reducing the cost of the RHI to consumers. To guarantee the stability of the financial return for an injector by ensuring that the value of green gas is not solely dependent on a potentially volatile market, government should ensure a minimum certificate value from 2013 onwards.

Table 1: Proposed timetable for implementing and developing a biomethane certification scheme and the fit with other policy reviews

Year	Policy development	Proposed Biomethane support
2011	RHI Introduced	Injection tariff
		Voluntary certification scheme for injectors to sell in addition to injection tariff. Certification allows for DH uplift payments from CHP
2013	RHI review New Building Regulations New SAP regulations RO and FiT Review	Certification scheme made compulsory for Zero Carbon build allowable solutions
		Certification made available as a compliance methodology for other policies e.g. CRC, CCAs
		Review injection tariff

At the first review of the RHI, the Government should integrate biomethane injection into other policies providing a potential route for compliance. For example, certificates could be used for the CRC energy efficiency scheme or to demonstrate zero carbon compliance in a zero carbon development[4]. Integration with these schemes would ensure a market for the certificates, and could eventually mean that additional subsidy certification could be removed.

For new CHP developments linked with new district heating infrastructure, the purchase of green gas certificates should provide eligibility for the district heating uplift under the RHI. Such a policy would improve investor confidence in district heating projects due to the established nature of CHP plant in serving district heating networks. If insufficient green gas certificates were purchased by the operator, the plant would not receive uplift payments for the heat delivered not accounted for by certificates.

Through linking the certificates scheme to good quality CHP, the policy would ensure that new plant on the grid would be high efficiency and use fuel optimally.

[4] Compliance with zero carbon rules would require that plant operators committed to purchase certificates for the lifetime of the plant to ensure that the development complied with zero carbon rules for its lifetime.