

Date : 15/06/2011 14:44:47

From : "Paget Fulcher"

To : "Hutchinson, Peter"

Cc : "Mark Cockburn", "Iain Morrow", "Mahmoud Abu-ebid", "Oliver Edberg", "Jeremy Stambaugh", "McCutcheon, Joanne", "Connolly, Samuel", "Stewart, Susan"

Subject : RE: Draft final report: A Renewable Heat Incentive for Northern Ireland

Attachment : DETI comments draft response 150611.docx;

Dear Peter,

As discussed on the phone I have just been in contact with AEA and we would now like to rearrange the teleconference to 2pm on Tuesday.

The phone number for everyone to call is [irrelevant information redacted by the RHI Inquiry] with participant code [irrelevant information redacted by the RHI Inquiry]

Also as discussed, please see attached a document mapping some of our initial responses to your comments on the Draft Final Report in advance of the call. We have not responded to all comments yet and some points are still open, but we are happy to discuss all areas with you.

Regards,

**Paget Fulcher**

Consultant

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**From:** Hutchinson, Peter [mailto:Peter.Hutchinson@detini.gov.uk]

**Sent:** 07 June 2011 16:51

**To:** Iain Morrow

**Cc:** Mark Cockburn; Paget Fulcher; Patrick Taylor; Mahmoud Abu-ebid; Oliver Edberg; Jeremy Stambaugh; McCutcheon, Joanne; Connolly, Samuel; Stewart, Susan

**Subject:** RE: Draft final report: A Renewable Heat Incentive for Northern Ireland

Iain,

Thanks for the draft report, I think generally it is in good shape however as with all reports there are some issues that we would like you to consider and address for the final version. Firstly I think it is important that we have sight of the model as soon as possible, if this could be finalised and sent through as a matter of urgency that would be greatly appreciated.

I apologise for the format of response, have listed below some overarching issues/questions that I think need addressed/answered in the final version. Some will be self-explanatory though others may need clarification and therefore it may be useful to arrange a teleconference to chat through these issues in advance of a final final report being finalised. At the bottom of the email there are more minor issues that should be easily addressed. I have also attached Sam's comments, which are easier to follow.

Grateful if you could look through and then we can discuss further, and if possible could the model be sent through as a matter of urgency.

Thanks in advance for considering these matters.

Peter

Some general comments and issues that need to be considered are;

**Not reaching 10%** - As no options deliver 10%, as above, can tariff levels be developed that would deliver 10%? Obviously the associated costs would also need to be developed.

Do these projections include domestics? How would figures change if industrial and domestics were included?

April presentation suggested 12.5% could be met under RHI – what has changed in final model?

**RHI Tariff levels** - Is there a need for additional tariff options;

- i) at a 15% rate of return, rather than 12%; and
- ii) tariffs which will deliver 10% renewable heat by 2020.

Is this possible? Would need to detail the costs of these options and reference the funding constraints of £25m to 2015/2016.

Need a section fully explaining why NI tariff levels are lower than GB levels (i.e. high energy costs and mitigating impact on gas). Need to explain the negative impact of increased tariff levels (gas issue).

Do these tariff levels indicate that heating prices in NI will always be high? Would higher levels force fossil fuel prices down?

**Domestic Sector** - Need to be clear from the start that the RHI options are non-domestic only, whereas the capital grant options would be available to all (barring heavy industrial??). Should also reference the GB position and the current DECC work on 'phase 2' of RHI. Need to include a recommendation that domestic are introduced to RHI by October 2012, similar to GB, and earlier if possible. Are the current projected uptake levels inclusive or exclusive of the domestic market i.e. the NI RHI delivers 8% renewable heat, is this all non-domestic? If so, how would this figure change with the inclusion of the domestic market from 2012?

**Heavy Industrial Sector** - Understand the rationale for excluding (cost and impact on gas) however I think we need to include a potential tariff for large industrial, specifically large biomass. The inclusion of this tariff can be accompanied with the various caveats and potential recommendation that DETI only include the tariff if various safeguards are put in place to mitigate against the risk of cost-effective solutions or important gas customers (current or future) taking up the incentive.

**AD** - We need to be clearer on the RO support levels (4 ROCs up to 500kw, 3 ROCs for 501kw to 5MW and 2 ROCs above 5MW). Should include an evidence based recommendation that these RO levels of support mean that a RHI uplift would be double-incentivisation and provide no additionality. However, need inclusion of a heat-only AD tariff level, and accompanying proviso that these installations are highly unlikely given RO levels.

**CHP** - Any views on interaction with RO?

**Front-loading tariff.** We need a more detailed recommendation, either to include;

- design of a RHI option to include front loading (however is this necessary for non-domestic sector??); and
- Consideration of using the £2m in year 1 for domestic grants (akin to premium payments) in advance of a RHI being in place for April 2012 and also to cover the fact that the domestics are excluded in the first wave of the RHI. This would need to include suggested grant levels and how these installations would be dealt with under a RHI when introduced to domestic market (i.e. if domestic grants of £x were available then those who take that up could only then claim 16/18 years of RHI?? This, in essence, would be front loading for the domestic market.

**Final recommendations** - Need to be very clear why RHI is preferred option over Challenge Fund in the long term funding scenario.

## **Specific issues**

Pg 6 – reference the do nothing option

Pg 6 – need more information on how do nothing would deliver 4.8%, seems very high. Is spending £25m to achieve a further 3.2% value for money?

Pg 9 – can we include an example of what these tariff figures would mean

Eg. A business with xxxxx heat load switches to biomass. RHI would be xx per kwh meaning a yearly tariff of xxxx, paid in 4 quarterly payments of xxxx. Annual biomass bills would be xxxx in comparison to xxxx of oil.

Need exact banding for technologies rather than small/medium/large.

Need a discussion on geothermal – recommendation that geothermal is included in GSHP tariff as in GB but recommend further research is carried out to examine costs and barriers to deep geothermal in NI.

Need to explain why no ASHP (tariffs for ASHP had been included in April report and presentation). If they are excluded need explanation and a recommendation to consider introducing in 2012.

Please replace any “Northern Irish” to “Northern Ireland”.

Pg 29 – Can % figures be included in table?

Pg 35 Need to be clearer on AD roc levels (4 for up to 500kw, 3 for 501kw to 5mw and 2 beyond).

Need it clearly explained that existing RO levels are sufficient to make AD commercially viable and any additional RHI payment would be uneconomical.

Need a heat only AD tariff but an acknowledgement that the development of such plants would be unlikely.

The 'Need' section requires expansion and more detail.

- EU targets / RED
- NI target / SEF
- Danger of NI doing nothing in comparison to GB RHI
- Need to increase security of supply
- Reduction of CO2
- Reduction of dependence on oil.

Pg 41 – Need to highlight the GB position of RHI open to 2020 even though there is no budget beyond 2015. Could NI do similar? Should NI RHI only be open to 2015 however to be extended to 2020 once funding was secured?

Pg 48 – need to reference previous commitment to support new installations from 1 September 2010 (<http://www.northernireland.gov.uk/index/media-centre/news-departments/news-deti/news-deti-september-2010/news-deti-200910->

[foster-recognises-importance.htm](#))

- need to explain rationale of no other existing installations being supported.

Deeming – any thoughts on a NI deeming method that would allow domestics to be included in initial RHI scheme or is the recommendation to definitely wait until GB position becomes clear??

Bioliqids Would delaying the introduction of bioliqids until 2012 enable tariffs for other technologies to be increased?

What would the impact be of this delay?

Is this more sensible given lack of resource, ongoing trials and issues with bioliqids for transport?

Table of tariffs – define small medium and large

- include tariffs which have a 15% rate of return and tariffs that would ensure 10% target.

Pg 63 - Not sure if I understand this graph, why does the heat delivered under the RHI flatline at 2015, is this using the first funding scenario? Surely the RHI is only feasible in long term funding scenarios and therefore the graph should show renewable heat increase until 2020 and then flatline?

Pg 82 – Minimal impact on gas – is there a need to discuss the limiting of incentives to non-gas users?

## Peter Hutchinson

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**Please consider the environment - do you really need to print this e-mail?**

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**From:** Iain Morrow [<mailto:Iain.Morrow@cepa.co.uk>]

**Sent:** 31 May 2011 20:16

**To:** Hutchinson, Peter

**Cc:** Mark Cockburn; Paget Fulcher; Patrick Taylor; Mahmoud Abu-ebid; Oliver Edberg; Jeremy Stambaugh

**Subject:** Draft final report: A Renewable Heat Incentive for Northern Ireland

Peter

Please find attached our draft final report on an NI RHI; please do let me know any final comments on it. One question we had on producing this version was about the two long term funding scenarios. We wondered if you felt that it was useful to have both of them included, or whether in the interests of clarity it might be helpful to drop scenario 3. In any case, perhaps we could discuss this later in the week and what the next steps might be?

I'd also like to say that it has been a pleasure working with you and your colleagues from DETI on this project. I hope the results are useful to you.

Regards

**Iain Morrow**

Managing Consultant

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## CEPA response to DETI comments on Draft Final Report

The table below provides CEPA's initial responses to DETI's comments on the Draft Final Report.

*CEPA responses*

| DETI comment   | CEPA response   |
|--|---|
| <b><i>Email comments</i></b>   |   |
| <p>1 <u>Not reaching 10%</u> - As no options deliver 10%, as above, can tariff levels be developed that would deliver 10%? Obviously the associated costs would also need to be developed.</p> <p>Do these projections include domestics? How would figures change if industrial and domestics were included?</p> <p>April presentation suggested 12.5% could be met under RHI – what has changed in final model?</p>  | <p>We have subsequently modified the tariff levels for domestic ASHPs, and included the switching of the Invista plant to biomass. In this scenario, the 10% target is achieved for some options. The final report will include costings for this.</p> <p>All projections/ results include domestics and industrials (although much of the renewable heat in the large industrial sector is cost-effective without any additional subsidy or not feasible due to access to the gas network).</p> <p>The reduction in renewable heat achieved, compared to the figures presented in April, is largely a result of us revising down the potential in the large industrial sector.</p> |
| <p>2 <u>RHI Tariff levels</u> - Is there a need for additional tariff options;</p> <p>i) at a 15% rate of return, rather than 12%; and</p> <p>ii) tariffs which will deliver 10% renewable heat by 2020.</p> <p>Is this possible? Would need to detail the costs of these options and reference the funding constraints of £25m to 2015/2016.</p> <p>Need a section fully explaining why NI tariff levels are lower than GB levels (i.e. high energy costs and mitigating impact on gas). Need to explain the negative impact of increased tariff levels (gas issue).</p> <p>Do these tariff levels indicate that heating prices in NI will always be high? Would higher levels force fossil fuel prices down?</p> | <p>i) will be covered in model training session</p> <p>ii) see above – we now have tariffs that are projected to achieve 10%</p> <p>We will draft a section explaining why NI RHI levels are lower (which is basically the reasons noted i.e. high energy costs and reducing impact on gas that could well be seen with GB RHI rates). This will include a worked example for an example technology.</p> <p>Don't understand this last point. Is it asking whether subsidy for renewable heat will provide increased competition for fossil fuel heating and so drive down prices?</p>  |

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| 3 | <p><u>Domestic Sector</u> - Need to be clear from the start that the RHI options are non-domestic only, whereas the capital grant options would be available to all (barring heavy industrial??). Should also reference the GB position and the current DECC work on 'phase 2' of RHI. Need to include a recommendation that domestic are introduced to RHI by October 2012, similar to GB, and earlier if possible. Are the current projected uptake levels inclusive or exclusive of the domestic market i.e. the NI RHI delivers 8% renewable heat, is this all non-domestic? If so, how would this figure change with the inclusion of the domestic market from 2012?</p> | <p>RHI options are not non-domestic only.</p> <p>Projected uptake levels are inclusive of the domestic market. Please see section 7.4 for domestic/non-domestic split under different policy options.</p> <p>Recommendation on domestics is similar to that in the comment. We recommend that they are introduced fully at the same time as in GB, but do not consider there is much case for introducing them earlier (since this would be complex and there are plenty of potential commercial sites to use up the subsidy in year 1).</p> |
| 4 | <p><u>Heavy Industrial Sector</u> - Understand the rationale for excluding (cost and impact on gas) however I think we need to include a potential tariff for large industrial, specifically large biomass. The inclusion of this tariff can be accompanied with the various caveats and potential recommendation that DETI only include the tariff if various safeguards are put in place to mitigate against the risk of cost-effective solutions or important gas customers (current or future) taking up the incentive.</p>   | <p>AEA data and our analysis shows that if biomass <i>chips</i> are available, industrial installations without access to the gas grid should find it economic to install these boilers without subsidy i.e. if we modelled these rates they would suggest an incentive rate of zero.</p> <p>Please see pages 32-34 for the limited potential for these installations.</p>   |
| 5 | <p><u>AD</u> - We need to be clearer on the RO support levels (4 ROCs up to 500kw, 3 ROCs for 501kw to 5MW and 2 ROCs above 5MW). Should include an evidence based recommendation that these RO levels of support mean that a RHI uplift would be double-incentivisation and provide no additionality. However, need inclusion of a heat-only AD tariff level, and accompanying proviso that these installations are highly unlikely given RO levels.</p>   | <p>The recommendation is based on the argument that the ROC levels were set to make the installations economic without additional subsidy and so any RHI subsidy would be unnecessary.</p>   |
| 6 | <p><u>CHP</u> - Any views on interaction with RO?</p>   |  |
| 7 | <p><u>Front-loading tariff</u>. We need a more detailed recommendation, either to include;</p> <ul style="list-style-type: none"> <li>- design of a RHI option to include front loading (however is this necessary for non-domestic sector??); and</li> </ul>   | <p>Our recommendation is that the case for front-loading for domestic consumers is not yet made (based on our sensitivity analysis). However, it is premature to rule it out before the evidence from the GB Premium Payments scheme about domestic uptake. We therefore recommend that DETI should explore with Ofgem and DECC the possibility of front-</p>  |

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|    | <p>- Consideration of using the £2m in year 1 for domestic grants (akin to premium payments) in advance of a RHI being in place for April 2012 and also to cover the fact that the domestics are excluded in the first wave of the RHI. This would need to include suggested grant levels and how these installations would be dealt with under a RHI when introduced to domestic market (i.e. if domestic grants of £x were available then those who take that up could only then claim 16/18 years of RHI?? This, in essence, would be front loading for the domestic market.</p> | <p>loading, should the evidence from the Premium Payments scheme support it. We will update the report to make this clear.</p> <p>Use of the GB Premium Payments scheme as a short-term capital grant is included in our overall recommendations.</p>  |
| 8  | <p><u>Final recommendations</u> - Need to be very clear why RHI is preferred option over Challenge Fund in the long term funding scenario.</p>  | <p>Our recommendation is based on the assumption that DETI wants to do an RHI. The Challenge Fund option is for comparison purposes to show what could be achievable.</p>  |
| 9  | <p>Pg 6 – reference the do nothing option</p>   | <p>Ok</p>  |
| 10 | <p>Pg 6 – need more information on how do nothing would deliver 4.8%, seems very high. Is spending £25m to achieve a further 3.2% value for money?</p>  | <p>The 4.8% is below the “do nothing” level identified in the AECOM/Pöyry report, of 6%. It is mainly from large industrial sites installing biomass, and from air-source heat pumps.</p> <p>The £25m does not achieve an additional 3.2% (i.e. a total of 8%). This requires long-term funding. Our analysis suggests that achieving this additional 3.2% has a negative cost-benefit (based only on monetisable costs and benefits).</p> |
| 11 | <p>Pg 9 – can we include an example of what these tariff figures would mean</p> <p>Eg. A business with xxxxx heat load switches to biomass. RHI would be xx per kwh meaning a yearly tariff of xxxx, paid in 4 quarterly payments of xxxx. Annual biomass bills would be xxxx in comparison to xxxx of oil.</p>   | <p>ok</p>  |
| 12 | <p>Need exact banding for technologies rather than small/medium/large.</p>  | <p>ok</p>  |
| 13 | <p>Need a discussion on geothermal – recommendation that geothermal is included in GSHP tariff as in GB but recommend</p>   | <p>We can certainly include a couple of sentences on this.</p>   |

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|    | further research is carried out to examine costs and barriers to deep geothermal in NI.   |  |
| 14 | Need to explain why no ASHP (tariffs for ASHP had been included in April report and presentation). If they are excluded need explanation and a recommendation to consider introducing in 2012.  | Now included.  |
| 15 | Please replace any “Northern Irish” to “Northern Ireland”.  | Ok. Apologies.   |
| 16 | Pg 29 – Can % figures be included in table?   | Yes, no problem.   |
| 17 | <p>Pg 35 Need to be clearer on AD roc levels (4 for up to 500kw, 3 for 501kw to 5mw and 2 beyond).</p> <p>Need it clearly explained that existing RO levels are sufficient to make AD commercially viable and any additional RHI payment would be uneconomical.</p> <p>Need a heat only AD tariff but an acknowledgement that the development of such plants would be unlikely.</p> | Covered above  |
| 18 | <p>The 'Need' section requires expansion and more detail.</p> <ul style="list-style-type: none"> <li>- EU targets / RED</li> <li>- NI target / SEF</li> <li>- Danger of NI doing nothing in comparison to GB RHI</li> <li>- Need to increase security of supply</li> <li>- Reduction of CO2</li> <li>- Reduction of dependence on oil.</li> </ul>                                   | <p>EU targets/ RED/ NI target/ SEF/ reduction of CO2/ reduction of dependence on oil covered in the previous section (context) so we can cross-reference that.</p> <p>Can the “danger of NI doing nothing...” be phrased in terms of needing to consider whether an RHI is appropriate for GB rather than needing to do the same option?</p> <p>Security of supply benefits are mixed so not sure we can include this.</p> |
| 19 | Pg 41 – Need to highlight the GB position of RHI open to 2020 even though there is no budget beyond 2015. Could NI do similar? Should NI RHI only be open to 2015 however to be extended to 2020 once funding was secured?  | An RHI provides a 20 year funding stream, and so even for installations that start operating in say 2012, funding is needed until 2031. We cannot see how an RHI can be (credibly) set up without long-term funding.   |
| 20 | Pg 48 – need to reference previous commitment to support new installations from 1 September 2010 ( <a href="http://www.northernireland.gov.uk/index/media-centre/news-">http://www.northernireland.gov.uk/index/media-centre/news-</a>  | We can add a couple of sentences here.   |

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|                                  | <a href="http://departments/news-deti/news-deti-september-2010/news-deti-200910-foster-recognises-importance.htm">departments/news-deti/news-deti-september-2010/news-deti-200910-foster-recognises-importance.htm</a><br>- need to explain rationale of no other existing installations being supported.   |   |
| 21                               | Deeming – any thoughts on a NI deeming method that would allow domestics to be included in initial RHI scheme or is the recommendation to definitely wait until GB position becomes clear??   | Recommend waiting until GB position becomes clear (page 58, table 6.4).   |
| 22                               | Bioliquids Would delaying the introduction of bioliquids until 2012 enable tariffs for other technologies to be increased?<br>What would the impact be of this delay?<br>Is this more sensible given lack of resource, ongoing trials and issues with bioliquids for transport?                             | Our model currently has no bioliquids installed until 2013 due to fuel supply restrictions.   |
| 23                               | Table of tariffs – define small medium and large<br>- include tariffs which have a 15% rate of return and tariffs that would ensure 10% target.   | See responses to previous comments  |
| 24                               | Pg 63 - Not sure if I understand this graph, why does the heat delivered under the RHI flatline at 2015, is this using the first funding scenario? Surely the RHI is only feasible in long term funding scenarios and therefore the graph should show renewable heat increase until 2020 and then flatline? | Apologies that this is not clear – it is using funding scenario 3. Graph does not add to the report, so suggest we remove it.                                 |
| 25                               | Pg 82 – Minimal impact on gas – is there a need to discuss the limiting of incentives to non-gas users?   | Ok, but we would need to include text saying why we haven't gone down this route (because of the difficulty of identifying future non-gas users). Is that OK? |
| <b><i>Economist comments</i></b> |   |   |
| 26                               | Connection figures under the “Current Situation” section are different to those outlined in section 9.5.1.  | Apologies. Section 9.5.1 is correct. We will update.  |
| 27                               | Table 2.10 – Need to check whether this information is  |   |



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|    | commercially sensitive.   |  |
| 28 | Page 37 + 38 – Is the counterfactual oil or gas? The drafting seems to suggest both but it is not clear how this can be the case.   | These graphs are the costs for different investor types based on their modeled counterfactual fuel type. Therefore the gaps shown are a mix of gas and oil, reflecting the fuel mix in Northern Ireland. |
| 29 | The need section lacks sufficient detail to justify the expenditure proposed. Simply stating that renewable technology is more expensive would not provide enough evidence to justify committing expenditure towards the project.   | See response to earlier comment about this section. Much of the need is covered in section 2 (context) which we will cross-reference   |
| 30 | Furthermore, additionality and displacement is yet to be addressed in this section.   |  |
| 31 | The objectives listed under section 4.1 should be made SMARTer. The objectives should also be able to facilitate the evaluation outlined in section 11.5.   | We can include what our model projects will be achieved against each of these measures by 2013/14.   |
| 32 | In addition it would be useful if an objective/s can be developed relating to the number of heating systems expected to be installed per technology over a defined period of time.  | Could table 7.5 form the basis of this?  |
| 33 | [Point for DETI re early adopters] – Is this approach consistent with our policy proposals regarding the SWEG issue? When increasing the level of NIROCs for small wind generators, those who had already installed capacity where not eligible for the increased support based on the argument that it would not result in any additional generation. Does the same argument apply here? |  |
| 34 | Section 6.2 & 7.1 – The report should clarify whether we are seeking to make renewable heat more affordable than conventional sources or whether the policy aim is to make it financially the same as the counterfactual fuel i.e. oil?   | We can insert a couple of sentences saying “the same as the counterfactual” and refer those who want more detail to Annex E (rate setting methodology)   |
| 35 | Table 6.1 – it would be useful if the “barriers to deployment” could be outlined to demonstrate the reduction in heat output under the do nothing scenario.   |  |

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| 36 | Section 6.6 – Are CEPA recommending that DETI should copy the GB deeming procedures when published? Does CEPA have its own view on what would be best for Northern Ireland?   | Yes, that is our recommendation. We cannot see strong arguments for NI having its own deeming procedure.  |
| 37 | Section 6.6.1 – The report should provide details of applicable tariffs to use if it's decided to provide an element of the funding up-front?   | See above - we do not recommend front-loading. The front-loading sensitivity we considered simply reduced all tariffs to provide an payment of 30% of the total present value of subsidy required over the life of the installation   |
| 38 | Section 6.7 – It will be necessary to analyse the model in order to assess the methodology behind the NI RHI subsidy levels being proposed.   | This methodology is set out in Annex E.   |
| 39 | Section 6.7.1 – The report should make a clear recommendation on the rates for solar thermal, rather than wait for DETI to make the decision at a later date.   |   |
| 40 | More information should be provided to explain the tiering issue and why it has not been adopted for NI. What is meant by a “positive additional fuel expense”?   | Tiering can only be applied in sectors where metering is applied (i.e. no domestics). It is also only applied when the reference technology has a sufficient load factor and the ongoing fuel cost of the new technology is greater than that what it would have been had they stuck with their counterfactual technology (a positive additional fuel expense). We did not find these conditions to be fulfilled for any technology band. |
| 41 | Table 6.6 – It is possible to get a sense check of these figures from e.g. NIAUR or other third party?  |   |
| 42 | Table 7.2 – In 2020, the challenge fund produces the most renewable heat. How is this statement compatible with figure 6.1 which demonstrates by 2020 a challenge fund will have delivered less renewable heat?   |   |
| 43 | Section 7.4 – It would be useful to understand how the percentages in table 7.5 have been derived. Furthermore, it is not clear what relevance the rural/urban split has to the analysis. Clarification should also be provided to explain why the domestic sector should | The figures are an output of the economic model and are important to this exercise as urban and rural households etc have different heating demand characteristics.<br>We can certainly drop the reference to urban/ rural split.   |

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|    | have a higher discount rate than the commercial sector.  | The assumptions on discount rates have been taken from the analysis for the GB RHI.  |
| 44 | Section 7.6.1 – Under “funding 1”, the total challenge fund cost is £47m. However table 4.2 demonstrates that £25m is available. Please clarify providing a breakdown if necessary.  | Apologies, this is a typo. The correct figure is £23m. This is a PV figure so is slightly lower than the £25m (nominal) figure.  |
| 45 | Page 78 – It would be useful to provide a breakdown of the administrative costs i.e. what do these cover? From reading this section it is not clear what the total cost of the entire project will be e.g. subsidy, admin and other costs? | We will include a cross-reference to Annex D (“administering renewable heat grant schemes”).<br>We will include a “total costs” table summing the other “costs” tables in section 7.                                       |
| 46 | It would be useful if the consultants could include a VFM conclusion within their analysis. How do the suggested levels of support compare to other renewable support mechanisms e.g. NIROCs for electricity?                              |  |
| 47 | As the project incurs a significant cost it will be important to determine whether the non-monetary benefits outweigh the economic cost incurred.  |  |
| 48 | It is not clear why it is being assumed that an oil boiler would require 2 days to install compared to 4 for domestic heat pumps and biomass boilers. Please clarify/provide evidence.   |  |
| 49 | Can the non-monetary costs/benefits be scored to demonstrate relative importance?  |  |
| 50 | It would be useful to clarify what gas/oil tariffs have been used in the modelling. Are these NI specific?   | Fuel cost assumptions are in Annex C.  |
| 51 | Furthermore, is it being recommended that the scheme should not be available to those currently connected to the gas network?  | No. Previous discussions with DE/TT indicated that this was not desired for equity/fairness reasons.   |
| 52 | Page 88 – What are the reasons for the relatively few small & commercial/public sector premises switching from gas to renewables given the detail outlined in section 9.5.2 i.e. what  | This is based on our analysis which suggests that the subsidy levels are such so as not to provide sufficient incentive for those on gas to switch to renewables. This is a significant risk, as noted on pages 87 and 88. |

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|    | incentives make this possible?   |   |
| 53 | How will inflation be applied within the tariffs going forward? Are the tariffs set to reduce in real terms?   | The tariffs are in 2010 prices in real terms so should be expected to increase with inflation.  |
| 54 | An estimate of all administration costs e.g. Ofgem should be included within the appraisal. DFP should be notified if total costs are expected to change by more than 10%. | Administration costs are considered in section 7.6.2. The costs shown are based on an analysis of the costs incurred for previous renewable energy support schemes. |
| 55 | It would be useful and necessary to analyse the financial model prior to providing any comments on the methodology and tariffs that have been derived.                     |   |
| 56 | It will also be necessary to have a preferred option determined (that has been fully costed) and finalised prior to submitting to DFP.                                     | To some extent this is dependent on available funding so must include some flexibility.   |