

Date : 01/02/2012 17:36:07

From : "Iain Morrow"

To : "Mark Cockburn"

Subject : FW: RHI - Follow up report - comments

Attachment : Mini proposal for extension as sent 25 Nov.pdf;image001.png;

Mark

We've just had the email below back from DETI on the draft report for the extension to the RHI project. Some questions on technology cost assumptions for AEA, and a need to talk DETI through how tariffs are set, but that's fine.

My concern is with the 2nd last para "Finally, we still have concerns...". Basically, DETI are asking for more work. We did not agree to run the model again to see what the effect would be of DETI changing the rate of return (to 15%!). In fact, in the (attached) proposal, we specifically said that "[in budgeting] we have assumed that the comments are purely about the work set out here, and that they do not require anything in addition". So I'm planning to go back to DETI and say "OK, we will address the comments in the report, and explain the tariff calculation in more detail. But I'm afraid re-running the model with a higher rate of return is outside the scope of the work".

Do you agree that's the right approach?

Iain

From: Hutchinson, Peter [mailto:Peter.Hutchinson@detini.gov.uk]
Sent: 01 February 2012 17:13
To: Iain Morrow
Cc: McCutcheon, Joanne; Connolly, Samuel; Sinton, Dan; Stewart, Susan
Subject: RHI - Follow up report - comments

Iain,

Thanks for submitting the draft report – have had a chance to consider and have made comments on the attached document these range from straightforward questions; asking for more information; and querying some figures. Hopefully all the notes and questions are simple to follow, happy to discuss if needed.

A couple of things have jumped out now the tech assumptions for reference technologies are clear. I had previously enquired about the barrier costs and why 'ongoing barrier' costs were not factored into the tariff calculations, as they are in GB? Also in terms of barrier costs I wished to clarify how these are determined, whether they include the upfront costs of heat meters (as prescribed in the scheme) and why would they differ from GB – do the same barriers not apply? These questions are all marked on the attached report.

In terms of the calculations, have a couple of issues with the final calculation to determine the tariff. My understanding, maybe wrongly, was that you determine the costs of the reference installation and the counterfactual to find the sum of difference per annum, this difference is then divided by the annual kwh of the reference installation to find the appropriate tariff. In doing this I come up with slightly different figures than included in the report. The attached (simple) spreadsheet shows my working out – grateful if you would consider and advise on this issue. The spreadsheet also has a rough sheet showing 'payback', currently the payback lengths appear quite long, 8-15yrs. Is this accurate?

In terms of the large biomass tariff (>500kw) you still have set out as no tariff. This creates an issue of competitiveness with GB in terms of large installations and would limit any biomass systems to 500kw, which is relatively small. Using previous technology assumptions I come up with a tariff of 0.7p, still less than GB, after factoring in opex, capex, fuel and barriers. Grateful if you would consider and advise why this is inappropriate.

Finally, we still have concern that as the tariffs are considerably lower than GB that consumers won't install (awaiting higher tariffs possibly) and esco's will move business operations to GB where the tariffs seem to be more favourable. Given this we would be keen to explore what tariffs at a higher rate of return would be, with the rationale being the need to close to gap with GB in order to develop an initial interest (this would be reviewed at the first planned review in 2014, changes implemented in 2015). Grateful therefore if you could run the model to show tariffs at an initial rate of 15% to show level of renewable heat and cost – this is marked up on the document.

Hopefully everything on the attached document and the calculations on the spreadsheet are self-explanatory.

Happy to discuss as required.

Thanks,

Peter

Peter Hutchinson

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Provided by CEPA on 10th May 2017

Annotated by RHI Inquiry

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

1. INTRODUCTION

This short note sets out CEPA and AEA's proposal to DETI for additional work on the Renewable Heat Incentive, following Peter Hutchinson's email to Iain Morrow of 9 November. It includes our understanding of what is required and how we propose to deliver that. It also includes an assessment of the time and cost required. To allow DETI to prioritise, we have shown separate cost and time estimates for each of the major pieces of work.

2. UNDERSTANDING OF REQUIREMENTS

Our broad understanding is that the main task would be to update our assumptions on the costs of biomass, bioliquids and other technologies and show the implications for tariffs and overall costs. DETI has received around half a dozen consultation responses that challenge our existing assumptions, and we would need to consider these, alongside our own review of current costs in Northern Ireland, and update our cost assumptions as appropriate.

The full list of tasks is:

1. Review consultation responses and other new evidence on biomass costs and update assumptions. This should take into account the recent revision of the GB RHI large biomass tariff. Introduce new tariff band, splitting the >45kW band into two. We understand there are no more than five pieces of evidence to review.
2. Consider the existing banding for Ground Source Heat Pumps and, as above, the splitting of the >45kW band into two.
3. Review the two new submissions received, and other new evidence available to AEA, on bioliquids costs and update assumptions.
4. As (3) for geothermal (up to four new submissions).
5. As (3) for the one new submission on biomethane.
6. Re-run the DETI RHI model using the updated assumptions for all technologies, (including the updated banding and tariffs) and delaying the Air Source Heat Pump (ASHP) and bioliquids tariffs until 2013. Show the overall impact on costs, benefits and uptake.
7. Consider (at a high level, mostly qualitative) the possible implications for gas demand of the updated tariffs. It is difficult to accurately predict the actions of a very small number of industrial sites with any accuracy, so this work would have to be based on a number of uptake scenarios and would likely be off-model. These would include scenarios such as "renewables taken up by all sites where they would be economic", "renewables are taken up only by sites where they would be economic and where the site is not on or near the gas network". The results would include an estimate of cost (annual renewable heat from those sites, times the tariff) and of the impact on the gas network (gas demand assumed to reduce by the volume of renewable heat produced).
8. For each tariff, develop tables (see Annex A for example), showing how the tariff is calculated. This is for the purpose of explaining the tariff calculations to stakeholders.

9. Present the high level impact of the NI RHI in terms of renewable heat delivered, carbon emissions displaced, technologies deployed and expected associated costs (see Annex B for example).
10. Deal with any comments from DETI on the draft results from tasks 1-9.

3. PROPOSED WORKPLAN

The table below shows an estimate of the number of days required for each task.

Table 1: Estimate of number of days per task

Task	AEA		CEPA	
	Mahmoud	Oliver	Iain	Kaylyn
1 – Biomass (technology assumptions and banding)	Sensitive commercial information redacted by the RHI Inquiry			
2 – GSHP (banding only)				
3 – Bioliquids				
4 – Geothermal (tariff development)				
5 - Biomethane				
6 – Rerun model to get impacts				
7 – Implications for gas				
8 – Tariff tables				
9 – High level impact				
10 – Respond to comments				
TOTAL				

Tasks 1-5 are to a large extent independent of one another, and so we would not have to do them all if DETI did not want us to. Tasks 6 and 7 require more or less the same effort whichever technology assumptions are updated. For task 8, we have assumed that DETI wishes us to prepare tariff tables for all tariff bands, even those where the underlying assumptions have not been updated. For task 10, we have assumed that the comments are purely about the work set out here, and that they do not require anything in addition.

4. COSTS AND TIMINGS

Daily rates for each person are shown in Table 2 below.

Table 2: Daily rates

Person	Daily rate (£)
Mahmoud Abu-Ebid	Sensitive commercial information redacted by the RHI Inquiry
Oliver Edberg	
Iain Morrow	
Kaylyn Fraser	

Combining these daily rates with the number of days required from table 1 gives an estimate of total costs as in Table 3 below.

Table 3: Estimate of costs per task

Task	Cost (£)
1 – Biomass	Sensitive commercial information redacted by the RHI Inquiry
2 – GSHP	
3 – Bioliquids	
4 – Geothermal	
5 - Biomethane	
6 – Rerun model to get impacts	
7 – Implications for gas	
8 – Tariff tables	
9 – High level impact	
10 – Deal with comments	
TOTAL	

Our total estimated cost for this piece of work is therefore £[REDACTED]. We would submit a single invoice with the final report.

As far as timing is concerned, we propose that CEPA would modify the model to allow new tariff bands for biomass and GSHPs (part of tasks 1 and 2) and to allow the model to calculate the results for tasks 6, 7, 8 and 9 in the first half of December. AEA would then update the inputs in January. These would be inserted into the updated model and the results presented to DETI in the week commencing 16 January. We have allowed around a day each of Iain, Mahmoud and Oliver in the week of 23 January to deal with any comments from DETI.

As agreed with DETI, we will do the work at our offices, and have meetings by teleconference. We therefore do not expect to incur any expenses. If we did because of a specific request from DETI (for example, a request for us to make a day trip to Belfast to present the results in person) we would charge these expenses to DETI at cost. If additional time was required for such trips, this would be at the daily rates in Table 2 above.

ANNEX A: EXAMPLE TARIFF TABLE

	CAPEX £/kW	OPEX £/kW/year	Efficiency %	Load Factor %	Size kW	Life time Years	Fuel cost £/MWh	Upfront barrier costs (including admin costs) £	Ongoing barrier costs (including admin costs) £/year
Renewable technology									
Oil									

	Annuitised Capital cost at 12% rate £	Annual operating costs £	Annual fuel costs £	Annuitised Upfront barrier costs £	Ongoing barrier costs £
Renewable					
Oil					
Difference					
Renewable technology Resource costs	(sum of difference row)				

Tariff design

Subsidy on annualised capital costs is xxp/KWh

Subsidy on operating costs is xxp/KWh (may be a negative)

Subsidy on barrier costs is xxp/KWh +

TARIFF IS XXp/KWh

ANNEX B – HIGH LEVEL IMPACT OF POLICY. EXAMPLE TABLE

Year	Total CO2 emissions displaced	Additional renewable heat resource	Number of installations	Subsidies paid (2011 prices)
2012				4m
2013				7m
2014				12m
2015				Then profile required budget
to go to 2040	Will peak in 2020 and fall.	Will peak in 2020 and fall.	No new installations post 2020 and then drop off from 2031 as early installers are no longer incentivised.	From 2021-2030 the subsidy paid will remain constant as no new applications taken. Post 2031 subsidy will fall as early installers finish 20 yr payment profile.