

From: [Paget Fulcher](#)
To: [Smith, Alan](#)
Subject: RE: Domestic RHI - Cost / Benefit
Date: 19 June 2014 13:09:20

Hi Alan,

The greater benefits appear to come from the model indicating that the RHPP + 7yr tariff would offset more oil use. Therefore, while it does not deliver so much renewable heat, it has a greater impact based on the fuel it is offsetting. The other runs appear to be offsetting more gas. I think the main effect is that the RHPP + 7yr tariff has more domestic biomass usage from households currently using oil and that offsets biomass usage that otherwise would have been mainly in the section of non-domestic sites using gas. This result should be interpreted more as a quirk of the particular model algorithms chosen.

Best regards,

Paget

From: Smith, Alan [<mailto:Alan.Smith@detini.gov.uk>]
Sent: 18 June 2014 10:37
To: Paget Fulcher
Subject: RE: Domestic RHI - Cost / Benefit

Thanks Paget,

It just looks a bit odd.

Best regards,

Alan

From: Paget Fulcher [<mailto:paget.fulcher@cepa.co.uk>]
Sent: 17 June 2014 16:37
To: Smith, Alan
Subject: RE: Domestic RHI - Cost / Benefit

Hi Alan,

I have been playing with the model and have not quite gotten to the final explanation of why the benefits are larger for the particular option. However, the carbon benefits will be larger if the carbon benefits are delivered earlier and will vary based on the technology mix incentivised. I am still looking into this and will let you know what I find.

Apologies for the delay.

Thanks,

Paget

From: Smith, Alan [<mailto:Alan.Smith@detini.gov.uk>]

Sent: 17 June 2014 08:34
To: Paget Fulcher
Subject: RE: Domestic RHI - Cost / Benefit

Hi Paget,

Would you be free anytime today for a quick call? I'm free except 3pm-4pm.

Best regards,

Alan

Alan Smith

Energy Co-ordination
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From: Paget Fulcher [<mailto:paget.fulcher@cepa.co.uk>]
Sent: 12 June 2014 05:30
To: Smith, Alan
Subject: RE: Domestic RHI - Cost / Benefit

Hi Alan,

I would be happy to help. This week I am away on business in Colombia but will try to have a look at this when I can. Happy to have a quick call on Monday once I've had a moment to look back at the model.

Thanks,

Paget

From: Smith, Alan [<mailto:Alan.Smith@detini.gov.uk>]
Sent: 11 June 2014 06:30
To: Paget Fulcher
Subject: RE: Domestic RHI - Cost / Benefit

Hi Paget,

I'm writing in relation to the modelling that CEPA / Ricardo AEA did last year on Northern Ireland's RHI phase2 and the correspondence you had with Peter Hutchinson in March. (please see below).

Peter has now moved on from the Department and we are putting together a business case to the Minister to instigate the programme for domestic heat.

I have been going through the CEPA report and the modelling which you sent over in March and have a few queries which I hope could be cleared off without taking up very much of your time. (I understand that our contract with you is now complete but would be very grateful for your help in my understanding so as to finalise this project).

I have extracted the domestic only information from chapter 7 of the report into the following table:

		Renewable heat delivered (with capital constraint applied)	Quantifiable benefits	Quantifiable costs	Benefits - Costs	Cost-effectiveness (£ per tonne of carbon saved)
		GWh	£	£	£	£
Option 1	Do Nothing	726				£30.30
Option 2	Asset Life tariff	726	*	*	*	*
Option 3	Upfront Grant	983	22	148	-126	£107.79
Option 4	Flat 7 year tariff	726	*	*	*	*
Option 5	RHPP plus 7 year	858	36	92	-56	£66.31
Option 6	Grant + lifetime tariff	994	22	161	-139	£114.72
	Grant + 7 year tariff	990	22	155	-133	£111.36

* Costs and benefits for these options are not calculated because these options will not proceed because they do not address the barrier of the upfront cost to households, the tariffs won't be able to incentivise them to install renewable heating.

I have a few question relating to the figures in the table.

1. Is the cost effectiveness of option 1, Do nothing the value of the carbon saved under the existing programme?
2. The quantifiable benefits for option 5 are the highest yet this delivers the less renewable heat than other viable options 3,5 and 6. Is this not counterintuitive since least renewable heat would imply most carbon emissions and therefore least savings based on DECC methodology?
3. The renewable heat delivered come from your model and are related to the actual installation and technology mix? Do the different options produce different uptake of technology mix or is the difference in the renewable heat delivered based solely on the phasing of payments given that they all provide customers with same NPV?

Finally, I would like to be able to build up a graph of costs and benefits for each of the options over the 7 year period (and continuing years). I would welcome a quick discussion on the model outputs as I think this should be fairly straightforward to extract. Would you have 15 or 20 minutes available at sometime tomorrow, Friday or early next week to discuss. I would really appreciate this as it would

enable me to close the analysis from DETI's point of view.

Best regards,

Alan Smith

Alan Smith

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From: Paget Fulcher [<mailto:paget.fulcher@cepa.co.uk>]
Sent: 14 March 2014 16:52
To: Hutchinson, Peter
Subject: RE: Domestic RHI - Cost / Benefit

Dear Peter,

I am in the office today so have tracked down the Phase 2 model, attached to this email.

I apologise if this was not sent through to you earlier.

Best regards,

Paget

From: Hutchinson, Peter [<mailto:Peter.Hutchinson@detini.gov.uk>]
Sent: 14 March 2014 09:27
To: Paget Fulcher
Subject: RE: Domestic RHI - Cost / Benefit

Paget,

Thanks for your prompt reply on this, very helpful.

The query on the model can wait for another day.

Thanks,

Peter

From: Paget Fulcher [<mailto:paget.fulcher@cepa.co.uk>]
Sent: 12 March 2014 16:39
To: Hutchinson, Peter

Subject: RE: Domestic RHI - Cost / Benefit

Hi Peter,

I'm afraid, Iain no longer works for CEPA. However I would be happy to help.

My quick response is that this occurs because of a domestic financing constraint (compare tables 7.2 and 7.3). Because the lifetime and seven year tariffs do not address the barrier of the upfront cost to households, the tariffs won't be able to incentivise them to install renewable heating. Only the ones with upfront grant elements can start to break the barrier and increase deployment. Does that make sense?

On the other hand I'm not sure why for example there is an increase in deployment when you move from no domestic support to having a lifetime or seven-year tariff when there are additional tariffs but that could be down to an effect such as non-domestic schemes pushing out some less efficient domestic schemes in the baseline.

I'm afraid I'll have to look into your question on the model as I don't have access to the project folder at the moment (I'm on secondment to Ofgem working on interconnector policy). Is this urgent?

Regards,

Paget

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

Sent: 12 March 2014 16:09

To: Paget Fulcher

Subject: FW: Domestic RHI - Cost / Benefit

Paget,

Emailed Iain the query below re NI domestic RHI, however the email bounced back so am assuming he has moved on from CEPA.

Can you take a look at the query and, if possible, provide a quick answer?

Thanks,

Peter

From: Hutchinson, Peter

Sent: 12 March 2014 15:52

To: 'Iain Morrow'

Subject: Domestic RHI - Cost / Benefit

Iain,

Sorry to bother you, hoping you can answer a very quick query on the report you completed for us last June (attached for ease of reference).

We are working through the approval process for domestic RHI and some queries have been raised regarding the cost benefit analysis. Can you advise why the "lifetime tariff" and "seven year tariff"

options detailed in tables 7.4 – 7.8 (pages 55-60 of attached) are zero'ed out showing no benefit in comparison to the "do nothing" option? Looking at it now I can't understand how this could be the case.

If you are able to advise that would be most helpful.

In addition, we never received the economic model for the phase 2 analysis – can you advise was this because the analysis was carried out "off-model" or was there another reason?

Thanks,

Peter

Peter Hutchinson

Renewable Heat

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