

From: [McCormick, Andrew \(DFE\)](#)
To: [Morelli, Emer](#)
Cc: [Scott, Michelle](#); [Caldwell, Alison](#); [McEvoy, Colette](#); [Dukelow, Victor](#); [Murphy, Shane](#); [Clydesdale, Alison](#); [Cousins, Heather](#); [Wightman, Stuart](#)
Subject: Re: Immediate/Priority - RHI - Tariffs and Tiering - Query from DoF
Date: 27 September 2016 22:19:29
Attachments: [image001.png](#)
[image002.gif](#)

Agree your points many thanks

Sent from my BlackBerry 10 smartphone.

From: Morelli, Emer
Sent: Tuesday, 27 September 2016 22:12
To: McCormick, Andrew (DFE)
Cc: Scott, Michelle; Caldwell, Alison; McEvoy, Colette; Dukelow, Victor; Murphy, Shane; Clydesdale, Alison; Cousins, Heather; Wightman, Stuart
Subject: Re: Immediate/Priority - RHI - Tariffs and Tiering - Query from DoF

Accepted, further sensitivity analysis should have been carried out on all the subsidy assumptions rather than a reliance on the expected NI need and GB baseline adjustments.

In addition to this the key commitment to review the scheme and adjust the tariff as required as set out in the business case could also have allowed control measures to be introduced.

Emer

Sent from my BlackBerry 10 smartphone.

From: McCormick, Andrew (DFE)
Sent: Tuesday, 27 September 2016 21:26
To: Morelli, Emer
Cc: Scott, Michelle; Caldwell, Alison; McEvoy, Colette; Dukelow, Victor; Murphy, Shane; Clydesdale, Alison; Cousins, Heather; Wightman, Stuart
Subject: Fw: Immediate/Priority - RHI - Tariffs and Tiering - Query from DoF

Please see Shane's email below in response to my request for some retrospective sensitivity analysis. This suggests that a relatively small increase in the load factor (17 to 20%) increases the rate of return to 18%, and that high usage gives very high rates of return. So this confirms that if the tariff of 5.9 was intended only to subsidise the capex, that assumption was only valid at low usage rates, and that as usage increased, the subsidy became in effect pure profit. I fear that this kind of sensitivity analysis could have been done in 2012.....

Any additional thoughts?

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From: Murphy, Shane <Shane.Murphy@economy-ni.gov.uk>

Sent: Tuesday, 27 September 2016 16:40

To: McCormick, Andrew (DFE); Dukelow, Victor

Cc: Smith, Alan; Wightman, Stuart; McCann, Brendan; Coyne, Terence; McMurray, Stephen; Conliffe, David; McEvoy, Colette; Marten, Lucy; Woods, Michael (DfE); McFarlane, Iain; Cousins, Heather; Clydesdale, Alison

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Andrew,

In relation to your Rate of Return question enclosed below is an extract from one of Alan's summary spreadsheets which shows an assessment of how the Rate of Return (IRR) varies with different load factor assumptions. As I mentioned earlier the Rate of Return varies very sharply with the load factor – and it very quickly diverges away from the target 12% IRR.

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Analytical Services

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

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Sent: 27 September 2016 11:58

To: Dukelow, Victor

Cc: Smith, Alan; Wightman, Stuart; McCann, Brendan; Coyne, Terence; McMurray, Stephen; Conliffe, David; McEvoy, Colette; Marten, Lucy; Woods, Michael (DfE); McFarlane, Iain; Cousins, Heather; Murphy, Shane; Clydesdale, Alison

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Perhaps Shane or Victor could advise further ?

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To: Clydesdale, Alison
Cc: Cousins, Heather; McMurray, Stephen; Wightman, Stuart; Dukelow, Victor; Smith, Alan; Murphy, Shane; Woods, Michael (DfE); McCann, Brendan; McFarlane, Iain; Coyne, Terence; Conliffe, David; McEvoy, Colette; Marten, Lucy
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- Hence the decision not to have tiering was okay - **on these assumptions** – because the full level of subsidy was required to cover the annualised costs of capital and barrier costs
- However, **subsequent movements** in the prices of oil and biomass changed this balance and it was those market movements, not the absence of tiering that created the problem of overincentivising.

Feel free to check with Emer that I have grasped this accurately.

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Subject: Re: Immediate/Priority - RHI - Tariffs and Tiering - Query from DoF
Date: 27 September 2016 22:50:25
Attachments: [image001.png](#)
[image002.gif](#)

Andrew

Just further reinforces the need for controlling usage - it's surprising that it wasn't also picked up by the EU at the time of State aid notification - they are usually very interested in rates of return. Do we need any lines on our verification/ checking procedures around the state aid notification?

The fact remains however that because c.1300 99 kW boilers pre date the Nov 13 tiering they are still able to avail of such rates of return at present.

Alison

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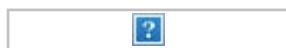
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From: [Wightman, Stuart](#)
To: [Smith, Alan](#)
Cc: [Murphy, Shane](#); [Dukelow, Victor](#); [Marten, Lucy](#); [Hughes, Seamus](#); [Adair, Joanne](#)
Subject: Proposed RHI Consultation
Date: 30 September 2016 15:45:35
Attachments: [image001.png](#)
[image002.gif](#)
[EC1 16 0108753 RHI IRR summary of options.xlsx](#)

Alan

Given our understanding of the original tariff design and the need to have a tier/cap at 17% (1,490 hours), can I please ask you to run to the following further scenarios. The table below provided by CAFRE shows that the difference in operating cost between biomass and oil is 1.16 p/kwh.

- (1) 6.5p/kwh tariff for first 1,490 hours (17%) each year with no tariff available for any further heat – Original CEPA assumptions
- (2) 6.5p/kwh tariff for first 1,490 hours (17%) each year followed by 1.16 p/kwh tariff any further heat – Original CEPA assumptions plus allowance for additional operating costs of biomass over oil for additional usage.
- (3) 6.5p/kwh tariff for first 1,490 hours (17%) each year followed by 1.16 p/kwh tariff for the next 2,776 hours up to 4,266 hours (46%) with no tariff available for any further heat – Original CEPA assumptions plus allowance for additional operating costs of biomass over oil for additional usage with cap at 46% (average usage).

With scenarios (2) and (3) above, I'm aware that the 6.5p figures was based on CEPA assumptions about opex, capex and fuel. I'm wondering if it would also be possible to update the original CEPA assumptions with updated figures on capex, opex and fuel costs taken from the table below to provide a revised tariff still based on achieving 12% rate of return over 20 years across a 17% load (1,490 hours). The initial tariff may prove to be higher than 6.5p / kwh given that biomass is now more expensive, however with a tier / cap at 17%, the rate of return can be controlled.

With State Aid approval in mind, we will also need to try and make allowance for the subsidy that participants will have received at the higher level before any tariff changes might be made.

Happy to discuss.

Thanks, Stuart

	120kW Oil Boiler				99kW Wood Pellet Boiler			
	2012/13	2013/14	2014/15	2015/16	2012/13	2013/14	2014/15	2015/16
Purchase Cost	Up to £3,000	Up to £3,000	Up to £3,000	Up to £3,000	Around £30,000	Around £30,000	Around £30,000	Around £30,000
Fuel Cost - Oil/Pellets/kWh*	5.58p	5.23p	4.37p	2.81p	3.83p	4.15p	4.16p	3.36p
Increase in electricity use	0	0	0	0	0.23p	0.32p	0.30p	0.30p
Boiler Maintenance Cost/kWh*	0.04p	0.04p	0.04p	0.04p	0.19p	0.22p	0.25p	0.25p
Remedial Repairs/kWh*	negligible	negligible	negligible	negligible	0.10p	0.10p	0.10p	0.10p
Av. Running Cost/ kWh	5.62p	5.27p	4.41p	2.85p	4.35p	4.79p	4.81p	4.01p

Stuart Wightman

Energy Efficiency

Department for the Economy

Netherleigh

Massey Avenue

Belfast, BT4 2JP

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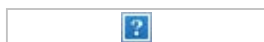
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On 26 Sep 2016 9:44 p.m., "Clydesdale, Alison" <Alison.Clydesdale@education-ni.gov.uk> wrote:

Andrew

I think we will need further economist advice on this, however Alan is on leave for the rest of this week. I have attached his advice as of last week .

The business case does confirm that "This is the fuel cost in 2012. The model takes account of expected future fuel costs in determining tariffs".

Perhaps I am oversimplifying it but is the purpose of tiering not to address over usage –at 17% usage the rate of return has been achieved at a subsidy level 5.9 p/kWh – but it costs 4.75p to produce an additional kWh so the over incentivisation stems from a profit of 1.15 p /kWh being available because of the inability to limit usage.

The only deterrent from overuse if a tiered tariff was not being used would be that the tariff would be less than the absolute fuel costs.

So in other words a mechanism to limit usage was always needed.

The additional piece of consultants advice of 2012 that determined the 5.9 might give us the assumptions about the future costs of fuel. I will take a look at that.

Perhaps Shane or Victor could advise further ?

Alison

From: McCormick, Andrew (DFE)

Sent: 26 September 2016 18:06

To: Clydesdale, Alison

Cc: Cousins, Heather; McMurray, Stephen; Wightman, Stuart; Dukelow, Victor; Smith, Alan; Murphy, Shane; Woods, Michael (DFE); McCann, Brendan; McFarlane, Iain; Coyne, Terence; Conliffe, David; McEvoy, Colette; Marten, Lucy

Subject: Immediate/Priority - RHI - Tariffs and Tiering - Query from DoF

Importance: High

Fundamental point from Emer Morelli re the Tiering/Tariff issue. I think Alan Smith may be the key person to address the substance of the point, but all of us will need to follow the reasoning.

Her logic is as follows:

- The decision to have tiering in England was driven by the need to incentivise the use of renewable fuels, because biomass was more expensive than gas – they had to have a subsidy rate **for fuel** that was greater than the incremental cost of fuel (ie the excess cost of biomass over gas)
- On the assumptions used in July 2011 and March 2012, the capital and barrier costs over twenty years needed the full level of subsidy - so paragraph 2.29 of the 2012 business case shows a need for 5.9 just to cover the annualised capital and barrier costs
- The “subsidy rate” in 6.7.1 in the July 2011 Appraisal and hence the footnote on p17 of the March 2012 Business Case refers not to the 5.9 overall tariff but to the **fuel cost element** of the subsidy – which, as shown in 2.29 of the Business Case was in fact -0.1. So this was truly in that sense **lower** than the incremental cost of fuel – ie we were not planning to subsidise fuel because biomass was cheaper than oil (as shown in the table in paragraph 2.28 – 4.39 vs 4.86). On that basis the footnote was and remains correct!!!
- Hence the decision not to have tiering was okay - **on these assumptions** – because the full level of subsidy was required to cover the annualised costs of capital and barrier costs
- However, **subsequent movements** in the prices of oil and biomass changed this balance and it was those market movements, not the absence of tiering that created the problem of overincentivising.

Feel free to check with Emer that I have grasped this accurately.

Pity such a fundamental question has arisen at this stage as it is a totally different argument from the approach taken in the NIAO Report which we agreed was factually accurate.

One key piece of information, which I think I need anyway, but which is also key to understanding this argument is some facts re fuel cost trends as below:

	Cost of Biomass p/kWh	Cost of Oil p/kWh
March 2012	4.39	4.86
November 2012 (or best date available close to the scheme going live)		
January 2014 (ie when we should have reviewed the scheme)		
March 2015 (when we began to realise we had a big problem)		
September 2016		
[Please add any other key stages that would be important]		

But I also need a view as to whether we accept Emer’s logic. Does the March 2012 Business Case establish that 5.9 is the tariff needed to incentivise the capex (given that we never needed to incentivise the fuel switch) **at whatever rate of usage applies??** Or was there then still a case for tiering, with an allowance for the capex in the form a higher tariff, followed, after a certain number of hours usage, by a drop to **no payment** (because the fuel cost would be lower than oil, and hence no need for subsidy at all (unlike GB which stepped down to 2p after 1314 kWhrs because gas was cheaper, and they had to incentivise the use of the more expensive fuel)).

This needs urgent consideration as if we are going to change our line so fundamentally, and actually withdraw our agreement with the NIAO Report, we need to be very certain of our arguments.

I am tied up first thing tomorrow, but should be available to get into this issue from mid-morning.

Many thanks.