From: Murphy, Shane
To: Dukelow, Victor
Cc: Smith, Alan
Subject: RE: RHI
Date: 13 September 2016 21:30:04
Attachments: image001.gif

Victor,

I think the real question is whether the statement was true and accurate at the time the decisions were made back in 2012 – that may no longer be the case now but that is entirely a different matter. Alan, can you look into this and establish whether the statement was accurate at the time of the business case and casework committee. I have never seen any evidence before that this statement was incorrect at the time.

Certainly Tariff design was probed at length by the panel (I was on the Panel) and we were given assurances by Energy on the risk of over-compensation and over spend, close monitoring and the ability to adjust tariffs. .....

TC asked how the tariffs had been designed and whether Energy Division felt that the various tariffs and types of technologies were appropriate.

PH advised that the tariffs vary depending on the type and size of technology to ensure that financial support is targeted for the specific installation and so over-compensation is avoided

In order to generate the appropriate tariff, the difference is determined in the costs between the renewable technology and the fossil fuel counterfactual and this figure is divided by annual heat output to arrive at the appropriate tariff. For most of the tariffs a discount rate of 12% is applied, this is consistent with the GB approach in designing the GB RHI and other renewable energy schemes

FH explained that the NI RHI will have scheduled reviews built-in to the scheme to allow DETI to ensure that the scheme remains fit for purpose and value for money for the duration. The scope of these reviews will include analysis of tariffs (either to be reduced or increased), the appropriateness of technologies (remove existing technologies or add new innovative ones) and the assessment of effectiveness and success.

PH added that it may be that the tariff levels are not sufficient to encourage uptake or that they are too generous (very unlikely) and hence uptake is such that there is insufficient budget. This is a main risk of the RHI and to help counteract this risk, Ofgem will provide regular management reports which will enable uptake to be carefully monitored and forecast expenditure. The RHI will be reviewed in 2014 (and at regular intervals thereafter) and tariff levels may be adjusted, for new installations, if appropriate.

In terms of managing payments, PH explained that there would be monthly draw downs to maintain and manage the financial aspect of the RHI to ensure that the budget would not go into overspend on any particular year. PH further advised that Ofgem has significant experience in financial profiles and budget handling as it has also worked on the GB Renewable Obligation, the NIRO and the GB RHI.

FH added that a monitoring committee would also be established in respect of the budget and the Department would receive monthly reports from Ofgem on the applications, accreditations and spend budget for the NI scheme.

TC asked how often the meters would be read for non-domestic customers. PH advised that meters would be read on a quarterly basis. The amount paid will be based on metered heat output and the tariff for the type of technology installed. This would also allow the Department and Ofgem to calculate annual forecasts for the RHI budget. If necessary the scheme could be closed to new applicants mid-year if applications were higher than expected and budgets risked being overspent.

TC enquired about the current status of the state aid application.
FH advised that in December 2011, the Department sent a detailed submission to the Commission, outlining the NI RHI proposals. This submission took on board lessons learned from the GB application that was approved in November 2011. An addendum to the December application was submitted in February 2012 advising on proposed changes as a result of further economic analysis carried out by external consultants.
TC was advised that as and when the tariffs are amended or revised, the Department would have to reapply for State Aid approval.
(The state aid point is that the exact same assurances that were given to the casework panel were also given to the EC within the notification of the scheme – ie that tariffs were designed to deliver a normal rate of return, and that there would be periodic reviews and adjustment of the tariffs to ensure that over-compensation would not arise)
It may also be useful to understand exactly what has been "agreed" as factual with the NIAO.
Regards
Shane

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NI Year of Food & Drink 2016

From: Dukelow, Victor
Sent: 13 September 2016 18:10
To: Murphy, Shane
Subject: Fwd: RHI

Shane,

To note below. We should seek to refer to documents/ include references in our response where possible.

Happy to discuss further.

V

Sent from my Android device managed by BlackBerry Enterprise Service

---------- Forwarded message ----------
From: "McCormick, Andrew (DFE)" <Andrew.McCormick@economy-ni.gov.uk>
Date: 13 Sep 2016 5:51 p.m.
Subject: RHI

To: "Dukelow, Victor" <Victor.Dukelow@economy-ni.gov.uk>
Cc: "Stewart, Chris (DFE)" <Chris.Stewart@economy-ni.gov.uk>, "Cousins, Heather" <Heather.Cousins@economy-ni.gov.uk>, "Woods, Michael (DfE)" <Michael.Woods@economy-ni.gov.uk>, "McCann, Brendan" <Brendan.McCann@economy-ni.gov.uk>, "McEvoy, Colette" <colette.mcevoy@economy-ni.gov.uk>

As discussed, I would be grateful if you could look into the Business Case of June 2012 for the Non Domestic RHI Scheme. At 10.4 (page 80), it says that the tariffs as set were deemed appropriate by the Departmental Economists, and in footnote 59 (page 104) it says the subsidy rate is lower than the incremental fuel cost. A major point against us in the NIAO Report (which we agreed as a matter of fact) is that the tariff is materially greater than the cost of fuel.
I need an explanation that I can draw on at the PAC on 28 September, and it would be very helpful to have your insight into what was asked of and shown to the economists at that time, and their response. .
Happy to discuss as and when appropriate.
Many thanks.

From: Smith, Alan
To: Dukelow, Victor
Subject: Emailing: RHI tariffs
Date: 16 September 2016 14:59:59
Attachments: RHI tariffs.docx

Victor,

Please find note attached on RHI tariffs. I have shared this with Shane. Happy to discuss.

Alan

RHI Biomass tariff

This analysis looks at the small commercial biomass RHI tariff only. Other RHI tariffs are not assumed to have the same unfavourable behavioural incentives.

Consultants produced a final report with recommended tariff levels for the RHI scheme. Following a public consultation these tariff levels were revised.

The Business case was drawn up following the proposed tariff changes and following the Casework Committee (CC).

The CC was told that the tariff setting methodology had three general principles:

- Renewable installations are divided depending on the type of technology and size of installation;
- Within each banding a reference technology is chosen to develop a consistent tariff across technologies and scales; and
- The net costs (difference between capital and operating costs of fossil fuel counterfactual and renewable alternative) are calculated and the tariff determined

It should be noted that the tariff was determined by modelling both capex and opex. Opex was determined as total running costs (O&M costs and fuel costs) and not simply fuel costs as might be inferred from the above. The following table show the difference in the assumptions behind the tariffs in the original proposal and the final tariff adopted following consultation.

	Capex (£/kW)	Opex ((£/kW/year)	Efficiency (%)	Load factor (%)	Size (kW)	Lifetime (years)	Fuel cost (p/kWh)	Barrier costs (£)	Ongoing barrier costs (£/year)
Original Biomass	330	7	77	17	20	20	4.71	6,689	0
Original Oil	36	1	90	7	50	20	5.34	0	0
New biomass	608	4.6	85	17	50	20	4.39	3,951	828
New oil	97	3.45	93	17	50	15	4.86	0	0

The assumptions are used to model annual running costs. The difference between annual running costs under oil and biomass is calculated and is the basis of the subsidy. In the table below biomass is calculated to cost £4,932 more than oil and therefore a tariff of 5.9p/kWh is necessary to incentive people to invest in a biomass boiler.

	Annuitised capital cost @12%	Annual operating costs	Annual fuel costs	Annuitised upfront barrier cost	Ongoing barrier costs	Sum of difference	As subsidy (p/kWh)
Original biomass	789	144	1,896	800	0		
Original oil	216	26	1,875	0	0		
Difference	574	119	22	800	0	1,514	**5.1**
New	4,073	230	3,868	718	828		

biomass							
New oil	710	173	3,902	0	0		
Difference	3,362	58	-34	718	828	4,932	**5.9**

The consultants state that the updated tariff reflects inflation, technology costs, tariff bands / boiler size and the inclusion of barrier costs. Both capex and opex have also increased for both biomass and oil.

In both cases biomass fuel costs are assumed to be lower than oil costs. i.e. there should be no need to award subsidy to switch based on fuel prices alone. It is the other factors which determine the size of the tariff subsidy required. Capex and O&M costs are much greater for biomass and a subsidy would be warranted to overcome these. Fuel costs were not amended between the original and updated tariff.

Boiler size, efficiency and load factor are also important determinants of the final tariff. The single tariff is based on a single point within a range for size efficiency and load factor.

Andrew McCormick's queries

1. Departmental Economists have also assessed the tariffs and assumptions behind the calculations and have deemed them appropriate. (Business case paragraph 10.4)

Under the updated tariff, the reference technology size has been increased from 20kW to 50kW and the load factor – or running hours - is assumed to be 17%. Under these assumptions the updated tariff of 5.9p would reward the investor with a 12% return and the tariff would be deemed appropriate.

Tariffs were examined by the economists and by the CC. Given the assumptions outlined above the tariff for biomass would allow a return of 12% on investment in a new biomass boiler. While the tariffs are appropriate under the assumptions outlined the CC was also reassured with the proviso that if any of the assumptions changed then the tariffs could be revised. A major change in the assumptions would be the running hours.

The CC was told on several occasions that "the RHI will have scheduled reviews built-in to the scheme to allow DETI to ensure that the scheme remains fit for purpose and value for money for the duration"..."The RHI will be review in 2014 (and at regular intervals thereafter) and tariff levels may be adjusted, for new installations, if appropriate"

However, experience has shown that in reality these assumptions did not hold. In reality most boilers installed are 99kWh and most boilers operate for more than 17% of the time.

With hindsight and evidence of the different boiler size and different running hours it would have been appropriate to allow the tariff only up to the assumed load factor. Thereafter a lower tariff should have been applied.

2. Tiering is not included in the NI scheme because in each instance the subsidy rate is lower than the incremental fuel cost. (Note 59 p 104)

For biomass below 100kW the updated subsidy rate is 5.9p/kWh. The incremental fuel cost for biomass is 4.39p. However other running costs are higher with a biomass boiler. I have calculated O&M to be 0.36p/kWh for a biomass boiler – based on the figures in the consultants' report.

Therefore it costs the participant 4.75p to produce an additional kWh but the subsidy is 5.9p. Therefore the participant is incentivised to run the boiler earning 1.15p for every additional kWh produced.

This analysis ignores the capital cost of the boiler. However assuming the capital cost is paid for by running in the tariff by running the boiler up to a load factor of 17% then and output above this level only adds to the profitability of the scheme.

From this analysis it is clear that the subsidy rate is not lower than the incremental (operating) cost.

A tiered tariff above 17% would have been appropriate.

Under the original analysis, the subsidy rate of 5.1p/kWh would not have been high enough to outweigh the additional running costs of the biomass boiler of 5.32p/kWh. [Fuel costs of 4.71p/kWh and O&M cost of 0.61p/kWh.

It appears anecdotally that the footnote 59 may have been copied from the earlier report without verification that it was now incorrect.

The fuel price of oil and biomass have changed since the original tariff was established. Oil prices in particular have fallen which would make the incentive to switch to biomass less attractive. Nevertheless, it is fair to say that the assumptions on pricing etc were reasonable at the time the original analysis was undertaken.

In its analysis, NIAO used its own information on current fuel running costs etc. to formulate the rate of return achievable from the RHI scheme. These will be different from the rates assumed in the original analysis.

From: Dukelow, Victor
To: Smith, Alan
Cc: Murphy, Shane
Subject: RE: Emailing: RHI tariffs
Date: 19 September 2016 09:40:00

Alan,

Thanks for this. It would be good to chat at some point and agree what we provide to Andrew by way of his preparation for PAC although I am in meetings most of the next two days. So in advance of a discussion I have a few questions.

Andrew asked what it was Departmental economists had seen in relation to tariffs /assumptions and what they did to assess them. I am working off the business case that went to DFP but believe there were iterations before this. I note that Sam Connolly's sign off e-mail to Peter Hutchinson of 1 March 2013 (on the pre casework business case?) does not specifically mention an assessment of tariffs/assumptions. Although perhaps there was an implicit understanding that by signing off on VFM the Economists were also signing off on tariffs.

Question is - could you look through the files/TRIM to see what assessment of tariffs was conducted by Departmental economists and when and on the basis of which tariff figures (eg was it conduced pre or post consultation - after which tariffs changed). At what point did the economists line "economists have assessed the tariffs and assumptions" come into play?

What were the original tariffs assumptions based on - they came from the consultants but were the assumptions founded in solid research/practice of costs/loadings/fuel costs etc?

When the consultants reviewed the new proposed tariffs post consultation did they re-examine fuel costs and the risk of the design leading to over usage. If not why not? If yes did they raise a red flag around it?

Were any sensitivities conducted around the assumptions that might have flagged the enhanced risk of over usage - either by the consultants or departmental economists?

Para 2.32 of BC mentions that only "useful heat is deemed eligible" and para 2.33 states that where beneficiaries are suspected of wasting heat just to claim incentives, DETI, or another enforcement body, will have the power to investigate. This might have given some comfort to those reviewing the case - can we tell how much this assurance influenced the economists' judgement?

Page 27 of BC mentions that the main risk is the tariff levels being set incorrectly including being too generous. Where did this risk come from - the consultant's original report(?) and if so how much did they test this risk in their post consultation tariff analysis?

Sorry if these require a further trawl through TRIM.

Thanks

Victor