



RENEWABLE HEAT
INCENTIVE INQUIRY

WIT-108201

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Iain Morrow
Lambda Models
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By email: iain.morrow@lambdamodels.com

17th October 2017

Dear Sir,

Re: The Independent Public Inquiry into the Non Domestic Renewable Heat Incentive (RHI) Scheme
Provision of a Section 21 Notice requiring the provision of evidence in the form of a written statement

I am writing to you in my capacity as Solicitor to the Independent Public Inquiry into the Non Domestic Renewable Heat Incentive (RHI) Scheme (known as 'the RHI Inquiry') which has been set up under the Inquiries Act 2005 ('the Act').

I enclose a copy of the RHI Inquiry's Terms of Reference for your information.

You will be aware that the RHI Inquiry is conducting its investigations into the matters set out in its Terms of Reference. The Inquiry is continuing with the process of gathering all of the relevant documentation from relevant departments, organisations and individuals as well as requiring individuals who have been, or who may have been, involved in the range of matters which come within the Inquiry's Terms of Reference to provide written evidence to the Inquiry Panel.

In this context, it would be of assistance to the Inquiry to have a statement from you setting out your involvement, whilst a servant or agent of Cambridge Economic Policy Associates Ltd ('CEPA'), with the Non Domestic Renewable Heat Incentive Scheme in Northern Ireland ('the RHI Scheme'). In particular, the Inquiry wishes to know the extent to which you agree with, or wish to supplement, the detailed account of CEPA's involvement with the Scheme already provided on its behalf by Mark Cockburn in each of the following: his witness statement dated 5 July 2017, his letter to the Permanent Secretary of the Department for the Economy ('DfE') dated 4 November 2016, his evidence to the Public Accounts Committee ('PAC') on 23rd November 2016, and his subsequent letter to the PAC dated 2 December 2016.

In light of this, and in keeping with the approach we are taking with others, the RHI Inquiry is now issuing to you a Statutory Notice (known as a 'Section 21 Notice') pursuant to its powers to compel the provision of evidence in the form of a written statement in relation to the matters falling within its Terms of Reference.

The Section 21 Notice enclosed with this letter requires you to provide evidence to the RHI Inquiry Panel in the form of a written statement addressing the matters identified in the Schedule to the Section 21 Notice. As the text of the Section 21 Notice explains, you are required by law to comply with it.

For the avoidance of doubt, the statement which is required of you by virtue of the enclosed Notice is a statement setting out your involvement in relation to the Scheme. The Inquiry understands that CEPA will ensure that you have access to any relevant information in order to provide the witness statement required. Should you consider that not to be the case, please advise the Inquiry of that as soon as possible.

The Schedule to the enclosed Section 21 Notice provides further detail as to the matters which should be covered in the written evidence which is required from you.

Please also bear in mind that, although the RHI Inquiry now has a good working knowledge of the RHI Scheme, the witness statement required by the enclosed Notice is likely (in common with others) to be published by the RHI Inquiry in due course. It should therefore ideally be written in way which is as accessible as possible

in terms of public understanding.

You will also find attached to the Section 21 Notice a Guidance Note explaining the nature of a Section 21 Notice and the procedures that the RHI Inquiry has adopted in relation to such a notice. In particular, you are asked to provide your evidence in the form of the template witness statement which is also enclosed with this correspondence.

As you are aware, receipt of this correspondence and its enclosures places you under a duty of confidentiality to the RHI Inquiry in respect of them. You may share the correspondence and the enclosed Notice with your legal representative(s), but neither you nor they may show, communicate the contents of, nor provide this correspondence or the Notice to any other person or organisation without the express permission of the RHI Inquiry. Any breach of this duty of confidentiality is actionable at the suit of the Inquiry Chairman. In addition, a similar restriction is contained in Restriction Order No 2 of 2017 made by the Inquiry Chairman and available on the RHI Inquiry website.

Given the tight time-frame within which the RHI Inquiry must operate, the Chairman of the Inquiry would be grateful if you would comply with the requirements of the Section 21 Notice as soon as possible and, in any event, by the date set out for compliance in the Notice itself.

Finally, I would be grateful if you could acknowledge receipt of this correspondence and the enclosed notice by email to Patrick.Butler@rhiinquiry.org.

Please do not hesitate to contact me to discuss any matter arising.

Yours faithfully

Patrick Butler

Solicitor to the RHI Inquiry

02890408928



SCHEDULE

[No 517 of 2017]

General / background information

1. Provide a summary of the following background information of relevance to your involvement in the Northern Ireland Non Domestic Renewable Heat Incentive Scheme ('the RHI Scheme'):
 - a. your experience (if any) of renewable heat incentive schemes, and/or other analogous incentive schemes in the energy sector, prior to your involvement in the RHI Scheme (including the name of each such scheme, the date of your first involvement in it, the duration of your involvement in it, the role(s) performed by you in respect of it, and any key similarities and differences between each such scheme and the RHI Scheme);
 - b. your precise involvement in the RHI Scheme, including details of when and how you were involved.

Mark Cockburn's account of CEPA's involvement in the RHI Scheme

2. The Inquiry refers you to copies of the following documents, served herewith, with which you may already be familiar:
 - a. The witness statement of Mark Cockburn, made on behalf of CEPA, dated 5 July 2017 (Inquiry reference WIT-105001 to WIT-107708);
 - b. Mark Cockburn's letter to the Permanent Secretary of the Department for the Economy ('DfE') dated 4 November 2016 (Inquiry reference WIT-33855 to WIT-33872);

- c. The Hansard transcript of Mark Cockburn's evidence to the Public Accounts Committee ('PAC') on 23 November 2016 (Inquiry reference PAC-06017 to PAC-06042);
- d. Mark Cockburn's letter to the PAC dated 2 December 2016 (Inquiry reference CEP-83118 to CEP-83196);

In respect of each of the said documents, please address the following issues:

- i. Set out whether, and if so in what precise respects and for what precise reasons, you disagree with any portion of Mr Cockburn's account of CEPA's involvement with the RHI Scheme (and providing, where appropriate, your alternative version of events);
- ii. Set out whether, and if so in what precise respects, you believe that Mr Cockburn's account is incomplete or non-comprehensive in some material respect (ensuring that you provide, where appropriate, the details which you believe to be missing from his account).

Tiering of biomass tariffs

- 3. In respect of tiering of biomass tariffs under renewable heat incentive schemes such as the RHI Scheme in Northern Ireland or the RHI Scheme in Great Britain, please address the following points:
 - a. Confirm that the tier 2 tariff should be set at or below the *net* cost of the renewable fuel i.e. the amount (if any) by which the cost of renewable fuel exceeds the cost of the counterfactual fuel;
 - b. In the event that you are not prepared to offer the confirmation sought in the preceding sub-paragraph, please set your

understanding of how, and at what level, the tier 2 tariff should be set as well as any evidence upon which you rely in support of that understanding (e.g. DECC tariff-setting methodology).

Specific queries arising in respect of certain CEPA documents

4. In an email of 12 April 2011 at 17:37 hours from you to Mark Cockburn (WIT-105854), you point out how further detail on Great Britain RHI will be out in May of that year, how it will be difficult to design a Northern Ireland RHI “to fit with the GB RHI” without such detail, and how “it might be worth pointing out to [DETI] again that a report produced now will need significant revision later”. In respect of this email:
 - a. Clarify when, and in precisely what terms (and, if applicable, through what documents), this point about the potential need for significant revision of the Northern Ireland RHI was communicated to DETI;
 - b. If it was never communicated, please explain the reasons for this.
5. In the same email at WIT-105855 you refer to an “attached spreadsheet” showing how tiering would work and you go on to state, apparently in respect of tiering, that “it’s not a difficult calculation”. Please identify and, if possible, provide a copy of the relevant spreadsheet.
6. In an email of 1 July 2011 at 16:54 hours from Peter Hutchinson of DETI to you (WIT-106184), Mr Hutchinson refers to, and purports to enclose, a spreadsheet. Please identify and, if possible, provide a copy of the relevant spreadsheet.
7. In an email of 4 July 2011 at 18:25 hours from you to Mr Hutchinson of DETI (WIT-106184), you refer to a “spreadsheet sent earlier” and to your hope that it “covers what you need”. Please identify and, if possible, provide a copy of the relevant spreadsheet.

8. In an email of 1 February 2012 at 17:13 hours from Peter Hutchinson of DETI to you (WIT-106413), Mr Hutchinson purports to attach a spreadsheet setting out how he arrives at different figures than those in CEPA's draft Addendum Report regarding calculation of tariffs. In respect of this email:
 - a. Please identify and, if possible, provide a copy of the relevant spreadsheet;
 - b. Please confirm whether, and if so when and in what precise terms, you or other CEPA personnel replied to his email and, if possible, identify the precise documents constituting, and/or attached to, any such reply.

The CEPA 2011 Report for DETI and the Model Provided by CEPA in 2011

9. Without prejudice to any of the foregoing questions, please confirm the following points in respect of the 2011 CEPA Report for DETI and the 2011 RHITM Model created by CEPA:
 - a. Confirm that the only written guidance for using the Model was provided to DETI alongside a copy of the Model on 8 July 2011 in an email from you (Supporting Documents 27 and 28 to Mark Cockburn's 5 July 2017 Statement, WIT-106187 to 106200);
 - b. Confirm that the 2011 Report did not identify or explain that the reference installation (for the small commercial biomass tariff) was calculated using a 16% discount rate for a domestic 12kW biomass boiler with 2014 costs (in 2010 prices) using bagged pellets in a rural detached property;
 - c. Confirm that Table 6.43 (WIT-106283) of the 2012 Addendum Report identified the reference boiler for the 2011 Report as

having been 20kW and that this information was repeated in Mark Cockburn's letter of 4 November 2016 (WIT-33857 to 33872);

- d. Confirm that, without clarity as to the reference boiler, it would be extremely difficult to derive the 4.5p/kWh tariff for small biomass;
- e. Confirm that the 2011 Model included a test in the Tiering Calculation section of the 'Rates' sheet which flagged whether tiering was needed if the fuel expense was less than the average subsidy and that, in the '050711' model, this showed 'FALSE' (CEP-51346 and 51347);
- f. Confirm that the 2011 Model was created by Paget Fulcher of CEPA.

10. Clarify whether CEPA provided or undertook a Model Training Session with DETI and, if it did, clarify when and where it occurred, who was involved (both for CEPA and for DETI), what the training entailed, and what (if any) materials were used in the training.

11. Clarify when, and how, you first became aware that DETI could not operate the 2011 model (as evidenced by your email to Mark Cockburn of 24 November 2011, at CEP-115935 [served herewith], wherein you state, in the context of the addendum work request from DETI, that *"they need this done and we are the only people to do it, since DETI can't work the model themselves"*).

The CEPA 2012 Addendum Report for DETI and the Model Created by CEPA in 2012

12. Please confirm the following points in respect of the Model created by CEPA in 2012:

- a. Confirm that the 2012 Model was the model originally provided to DETI in 2011, but substantially modified by CEPA for the Addendum in various respects including as follows:
 - i. To accommodate the inclusion of ongoing hassle costs;
 - ii. To make changes to the tariff bandings;
 - iii. To prevent the Model choosing a future reference year when the capital costs might be lower;
 - iv. To fix the reference year to 2011/2012;
 - v. To update the costs;
 - vi. To rerun the model with the new assumptions;
- b. Confirm that no copy of the full 2012 Model was provided to DETI;
- c. Confirm that DETI could not have replicated the changes made by CEPA to the 2011 Model without significant help;
- d. Confirm that the following differences or discrepancies existed between the information set out in the 2012 Addendum Report and the 2012 Model:
 - i. Table A.76 (WIT-106308/9) shows the up-front barrier costs to be £3,951 whereas the Model uses £5,364;
 - ii. Table A.76 shows the biomass fuel cost to be 4.39p/kWh whereas the Model uses 4.56p/kWh;
 - iii. Table A.76 shows the oil fuel cost to be 4.86p/kWh whereas the Model uses 5.08p/kWh;

- iv. Table A.76 shows single year values for the biomass and oil fuel costs whereas the Model uses a value representing the assumed lifetime fuel costs;
 - v. Table A.77 (WIT-106309) shows the biomass capital costs to be £4,073 (which equates to an annuity factor of 7.46) whereas the Model uses costs of £3,632 and an annuity factor of 8.37;
 - vi. Table A.77 shows the oil capital costs to be £710 (which equates to an annuity factor of 6.83) whereas the model uses a capital cost of £636 and an annuity factor of 7.63;
 - vii. Table A.77 shows the annuitized barrier costs to be £718 (which equates to an annuity factor of 7.46) whereas the model uses barrier costs of £641 and an annuity factor of 8.37;
 - viii. Summing the differences in Table A.77 and dividing by the output of the biomass boiler gives a tariff of 6.6p/kWh;
 - ix. The model, using these different inputs, produces a tariff of 5.9p/kWh;
- e. Confirm that it is not possible to derive the 5.9p/kWh tariff from the data provided in the 2012 Addendum Report;
- f. Confirm that the 2012 Model, like that of 2011, included the test in the Tiering Calculation section of the 'Rates' sheet for whether tiering was needed but now flagged this as 'TRUE';

- g. Confirm that the copy of the 2012 Model provided to the Inquiry (served herewith under Inquiry reference CEP-51348) shows Tier 1 and Tier 2 tariffs for the small commercial biomass boiler;
- h. Confirm that the work done to create the 2012 Model (as distinct from the 2011 Model) was done by Kaylyn Fraser and, in respect of Ms Fraser, clarify what her precise status was at CEPA at the material time.

Models Generally

13. Clarify whether, to the best of your knowledge, NERA ever prepared for DECC a model similar to or analogous with either of CEPA's 2011 or 2012 Models and, if it did, whether (and if so when) such a model was ever made available to CEPA by NERA and/or DECC.

(If it was made available, please provide a copy of same to the Inquiry)

Generally

14. Confirm that the outcome of CEPA's analysis in 2011 was that a Challenge Fund was a better option than an ongoing support mechanism (such as the RHI Scheme) because it delivered a greater amount of renewable heat at a significantly lower cost.
15. Clarify whether you are aware of the reason(s) why DETI chose the RHI Scheme ahead of a Challenge Fund and, if you are so aware, set out the said reason(s) and state whether you agreed or disagreed with the decision.
16. Provide any further evidence within your knowledge which is relevant to the matters which the RHI Inquiry is investigating as set out in its Terms of Reference.

NOTE:

It is important for the efficiency of the RHI Inquiry that the issues identified above are addressed as fully as possible and by reference, where available, to the dates and locations of specific incidents to which reference is made. The statement should be broken down into paragraphs, which should be numbered sequentially from '1' to the end. The use of appropriate section headings or sub-headings is also encouraged. A template witness statement is provided with this Notice for your assistance and should be used as the format for your response.



INQUIRY INTO THE RENEWABLE HEAT INCENTIVE SCHEME

RHI REF: Notice 517 of 2017

DATE: 7 November 2017

Witness Statement of: Iain Morrow

I, Iain Morrow, will say as follows: -

Further to Notice 517 of 2017 served upon myself, Iain Morrow, pursuant to the s.21 of the Enquiries Act 2005 by the RHI Inquiry on 17 October 2017, I make this statement subject to the following points:

1. My answers below are based on my personal recollection of events which occurred, for the most part, nearly six years ago. My answers provide my best view based on my personal recollection of the events. I have identified areas where my personal recollection is particularly limited.
2. While a substantial amount of information was made available to me by CEPA, with the approval of the Inquiry, I have not had an opportunity to review the entirety of that information. I therefore reserve my ability to supply further comment on any of the points set out in this statement should new matters come to my attention through my ongoing review.
3. While I have endeavoured to supply all documentation within my possession that is responsive to the Inquiry's Disclosure Notice 518 of 2017, there are information gaps in CEPA's records, the closure of which may bring further clarity to my understanding of matters being reviewed by the Inquiry. In particular, as identified by CEPA in the second written statement of Mark Cockburn, correspondence between CEPA employees (myself included) and the Department in 2011 to 2013 may clarify some matters. I have not had time to review this large volume of correspondence and therefore I reserve my ability to supply further comment on any of the points set out in this statement should new matters come to my attention through my ongoing review.

General / background information

1. **Provide a summary of the following background information of relevance to your involvement in the Northern Ireland Non Domestic Renewable Heat Incentive Scheme ("the RHI Scheme"):**
 - a. ***Your experience (if any) of renewable heat incentive schemes, and/or other analogous incentive schemes in the***



energy sector, prior to your involvement in the RHI scheme (including the name of each such scheme, the date of your first involvement in it, the duration of your involvement in it, the role(s) performed by you in respect of it, and any key similarities and differences between each such scheme and the RHI Scheme);

I had worked on a number of analogous schemes and policies in the energy sector prior to my work on the NI RHI.

- i. From 2005 to 2008 I worked on the long term strategy for Phase III of the EU Emissions Trading System, the EU's main carbon pricing policy. This is an incentive scheme designed to reduce emissions of greenhouse gases including CO₂. Like the RHI, my work on this scheme was about economic incentives and impacts of financial mechanisms for renewables and carbon reduction.
- ii. From 2009 to 2010 I was a member of the UK Government's Electricity Market Reform team, looking at how the electricity system rules and structure should be modified to better accommodate low carbon generation. I had particular responsibility for looking at the impacts on potential investments of changes to the rules.
- iii. In 2008/09 I wrote the UK Government's call for evidence on the implications for electricity security and reliability of low carbon generation ("Delivering Secure Low Carbon Electricity, A Call for Evidence"). This is also in the area of renewable energy policy, as is the RHI.
- iv. In 2009 I helped to produce DECC's 2009 Renewable Energy Strategy and its Low Carbon Transition Plan. This includes a consideration of the likely role of renewable heat (alongside renewable electricity and renewable transport) in delivering the UK's overall renewable energy target. It was therefore a precursor to the introduction of an RHI, in that it identified what the targets for any RHI



might be.

- b. ***Your precise involvement in the RHI scheme, including details of when and how you were involved.***

I was the project manager at CEPA for the 2011 report, the 2012 addendum and the 2013 domestic RHI report. I was the main contact point for DETI within CEPA. I managed the CEPA teams that produced the reports and addendum for DETI, and wrote the drafts of those documents.

Mark Cockburn's account of CEPA's involvement in the RHI Scheme

2. ***The Inquiry refers you to copies of the following documents, served herewith, with which you may already be familiar:***

- a. ***5 July witness statement.***
- b. ***Letter to DfE 4 Nov 16.***
- c. ***PAC evidence 23 Nov 16***
- d. ***Letter to PAC 2 Dec 16***

I note I have read all documents listed, except the annexes and/or appendices which are copies of documents prepared by third parties. In other words, I have read all the parts of the documents which were written by Mark Cockburn; but I have not read all of the additional material which was included by Mark for the Inquiry's ease of reference.

In respect of each of the said documents, which I have read, I address the following issues:

- i. I do not disagree with Mark's account of CEPA's involvement, in any of the four documents listed.



ii. While I cannot see any areas which, to the best of my recollection, are incomplete or non-comprehensive in any material way, I wish to make some additional points. The documents bring them out to some degree, but I would have emphasised them more.

(a) I would emphasise more strongly the untested nature of the RHI in 2011/12, which can be forgotten with the hindsight available in 2017. The GB scheme was “first of a kind”, in DECC’s words¹, with the NI scheme following shortly after. NERA, in its “Design of the Renewable Heat Incentive” report, notes that *“The RHI is likely to be a complex policy with no direct precedents. Inevitably this will mean that the Government may wish to modify it over time.”* (WIT-107122). Stakeholders also recognised this. See for example one of the responses to DETI’s consultation on the RHI, which stated *“Regular reviews are essential, but the very first review and its out workings being proposed to take place by the 1st of April 2015 is too far away. We would suggest that the first review needs to be after two years and then revert back to every four years. This will allow for the early correction of any significant problems which often occurs, with the launch of such a major new scheme, such as the RHI”*. (WIT-106595). In short, with “first of a kind” schemes, regular comprehensive review is essential, along with on-going and more regular monitoring. It is clear that DECC performed on-

¹ <https://www.gov.uk/government/news/departmental-minute-announcement-on-rhi-and-fits>



going review (such as the introduction of interim control measure in 2012, and depression introduced and applied in 2013) as well as more regular full review after two years.

(b) Secondly, depression. This is a form of cost control measure, but as DECC recognised when introducing it, it does not prevent the budget from being overspent: *“Although depression lowers RHI expenditure relative to a world with no budget management mechanism in place, this policy option does **not** guarantee that the RHI budget will not be exceeded in the event of (significantly) higher than expected deployment (unlike the SBM which enables the scheme to be suspended).”* (WIT-107697, emphasis in original).

(c) Finally, I would point to CEPA’s statement in its 2013 report (*Development of Phase II of the Northern Ireland Renewable Heat Incentive*) on the average cost of the RHI. The conclusions (page 59) state: *“There is also the issue of budget. DETI’s annual budget in 2020 is assumed in our analysis to be £42 million...[the RHI needs to deliver] around 1,000GWh per year...Dividing one by the other gives an average of 4.2p per kWh. In short, if DETI is spending more than 4.2p/kWh, it is not going to be able to afford the 10% target with its assumed budget. In that regard, we note that many of the tariffs in this report are above 4.2p. It may be that this budgetary barrier can be overcome as technologies reduce in price over time”*. Put simply, either the target was going to be missed, or tariffs would have to come down, or the budget would need to be increased.



Tiering of biomass tariffs

3. In respect of tiering of biomass tariffs under renewable heat incentive schemes such as the RHI Scheme in Northern Ireland or the RHI Scheme in Great Britain, please address the following points:

a. Confirm that the tier 2 tariff should be set at or below the net cost of the renewable fuel i.e. the amount (if any) by which the cost of renewable fuel exceeds the cost of the counterfactual fuel;

No, I think this statement is too definitive.

b. In the event that you are not prepared to offer the confirmation sought in the preceding sub-paragraph, please set your understanding of how, and at what level, the tier 2 tariff should be set as well as any evidence upon which you rely in support of that understanding (e.g. DECC tariff-setting methodology)

First, “such as the RHI scheme in Northern Ireland or the RHI Scheme in Great Britain” implies that there were other RHI schemes which pre-dated the launch of the NI RHI. There were no other such schemes in 2011 (see for example WIT-107122 and DECC’s press release in 2010, which noted that its scheme was “first of a kind”). There was only the GB RHI. Second, setting a second tier tariff is a more complex decision than the question implies. In general, the purpose of tiering is to avoid “a *perverse incentive to over-generate heat*” (DECC, WIT-107207). In order to do so, the tier should not exceed the cost of the fuel (adjusted for efficiency). The approach used by DECC for the GB RHI is one approach but not the only possible one. Other factors may also come into consideration than simply net fuel costs. These could include the issue of different biomass fuel



types, or a desire particularly at early stages to give a strong incentive for uptake of the scheme.

Specific queries arising in respect of certain CEPA documents

4. In an email of 12 April 2011 at 17:37 hours from you to Mark Cockburn (WIT-105854) you point out how further detail on Great Britain RHI will be set out in May of that year, how it will be difficult to design a Northern Ireland RHI “to fit with the GB RHI” without such detail, and how “it might be worth pointing out to [DETI] again that a report produced now will need significant revision later”. In respect of this email:

- a. Clarify when, and in precisely what terms (and, if applicable, through what documents), this point about the potential need for significant revision of the Northern Ireland RHI was communicated to DETI;***

I left CEPA in early 2014, and as is usual practice when leaving employment, I did not take any client documents with me. I therefore have no documentary evidence from that time² which would not already have been provided to the Inquiry by CEPA, DfE and others. However, of the documentation which I have had an opportunity to revisit, and from what I can recall of my engagement with DETI, I note:

- i. The CEPA 2011 report stated: “It is important to note that more details of the GB RHI are expected in summer 2011, after this report was completed. Once these details are known, it may be appropriate to revisit some decisions”,***

² Apart from three draft documents, which have been provided to the Inquiry in response to Section 21 notice 518 and are not relevant to this question.

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- ii. The 2011 report also stated: *"Whilst our analysis of RHI options is on the basis that domestic consumers are included, we recommend that no final decision on the inclusion of domestic consumers is made until the GB approach is clearer. Even if domestic consumers are included in an RHI, we recommend that some form of front-end loading of support is at least considered. This can be thought of an intermediate option between the two extremes of upfront grants and flat payments that we consider in this report.*
 - iii. My recollection from the time is that Peter Hutchinson and I regularly discussed by telephone the progress of the DECC Scheme and how we were trying to design the NI RHI to fit with the "moving target" of the DECC RHI. For example, my email to Mark Cockburn of 12 April 2011, ahead of a meeting with DETI, stated *"This will be at a time when there are still a lot of uncertainties about the GB RHI (see below) so if I were DETI I would want a report in June rather than April, and I think we should make this point to them (emphasising that our conclusions can only be preliminary) but this may not be politically possible"* (WIT-105852). I note that the report was eventually produced in June.
 - iv. Finally, my recollection is that DETI was in regular contact with DECC in relation to the RHI. As a result, DETI would have been well aware that the GB RHI was not yet finalised. DETI was also clear that it wanted the NI RHI to be similar to the GB RHI. It follows that DETI must have realised that the NI RHI might need to be revisited if the GB RHI design changed.
- b. ***If it was never communicated, please explain the reasons for this.***



Not applicable.

5. ***In the same email at WIT-105855 you refer to an “attached spreadsheet” showing how tiering would work and you go on to state, apparently in respect of tiering, that “it’s not a difficult calculation”. Please identify and, if possible, provide a copy of the relevant spreadsheet.***

I understand that CEPA has already provided this spreadsheet to the Inquiry, as part of its response to Section 21 Notice number 476 of 28 September 2017.

6. ***In an email of 1 July 2011 at 16:54 hours from Peter Hutchinson at DETI to you (WIT-106184), Mr Hutchinson refers to, and purports to enclose, a spreadsheet. Please identify and, if possible, provide a copy of the relevant spreadsheet.***

I understand that CEPA has already provided this spreadsheet to the Inquiry, as part of its response to Section 21 Notice number 476 of 28 September 2017.

7. ***In an email of 4 July 2011 at 18:25 hours from you to Mr Hutchinson of DETI (WIT-106184) you refer to a “spreadsheet sent earlier” and to your hope that it “covers what you need”. Please identify and, if possible, provide a copy of the relevant spreadsheet.***

I do not have either the email or the spreadsheet referred to in WIT-106184. To the best of my knowledge neither is in the files disclosed to the Inquiry. Since the email was to Peter Hutchinson, it may be available from DfE.



8. ***In an email of 1 February 2012 at 17:13 hours from Peter Hutchinson of DETI to you (WIT-106413), Mr Hutchinson purports to attach a spreadsheet setting out how he arrives at different figures than those in CEPA's draft Addendum Report regarding calculation of tariffs. In respect of this email:***
- a. ***Please identify and, if possible, provide a copy of the relevant spreadsheet.***

I do not have access to CEPA emails or documents from that time, beyond those already provided by CEPA to the Inquiry. I understand CEPA does not have a copy of the spreadsheet either. Since the email was from Peter Hutchinson, the spreadsheet may be available from DfE.

- b. ***Please confirm whether, and if so when and in what precise terms, you or other CEPA personnel replied to his email and, if possible, identify the precise documents constituting, and/or attached to, any such reply.***

I am unable to remember how CEPA responded.

The CEPA 2011 Report for DETI and the Model Provided by CEPA in 2011

9. ***Without prejudice to any of the foregoing questions please confirm the following points in respect of the 2011 CEPA Report for DETI and the 2011 RHITM Model created by CEPA:***
- a. ***Confirm that the only written guidance for using the Model was provided to DETI alongside a copy of the Model on 8 July 2011 in an email from you (Supporting Documents 27 and 28 to Mark Cockburn's 5 July 2017 Statement, WIT-106187 to 106200).***



This is the only written guidance that I can recall sending to DETI.

- b. ***Confirm that the 2011 Report did not identify or explain that the reference installation (for the small commercial biomass tariff) was calculated using a 16% discount rate for a domestic 12kW biomass boiler with 2014 costs (in 2010 prices) using bagged pellets in a rural detached property.***

Yes confirmed. However, this was information that could be found in the CEPA model, which DETI had, as follows. Using the model CEP-51347, go to the “Rates” sheet. The rates calculation is shown on rows 93 onwards. In the section labelled “Reference Identification”, cell AE102 shows that the reference segment is segment 75. Segment 75 is shown on row 368. As the formula in that row shows, this refers to “Macro I” row 273. Columns C (“Technology/ Customer”) and D (“Year”) on that row identify that the reference installation is “Biomass pellet boilers - Domestic - Oil - Rural - Detached – pellets”, in year 2014. Putting these values into the “Decisions” sheet (cells H5 and H6) brings up the values for that segment. Cell H47 (labelled “Size”, “kW”, “biomass pellet boilers”) shows the value of 12kW. Cell H69 (labelled “discount rate”) shows a value of 16%.

- c. ***Confirm that Table 6.43 (WIT-106283) of the 2012 Addendum Report identified the reference boiler for the 2011 Report as having been 20kW and that this information was repeated in Mark Cockburn’s letter of 4 November 2016 (WIT-33857 to 33872)***

There is no table 6.43 in the 2012 Addendum – I assume this question refers to Table 3.1 in that document. It states “...(original 20kW)”. I do not recall exactly what this meant, whether it was the reference boiler or the size of a typical boiler



in that band. I can confirm that Mark Cockburn's letter to Andrew McCormick of 4 November stated that "*the reference boiler was increased in scale to 50kW from 20kW*".

- d. ***Confirm that, without clarity as to the reference boiler, it would be extremely difficult to derive the 4.5p/kWh tariff for small biomass.***

No. DETI was in possession of the full 2011 CEPA model, which included all calculations required to derive the 4.5p tariff. The steps for doing so were explained in section 3.4 ("*Setting RHI Rates*") of the manual produced for DETI and sent to them.

- e. ***Confirm that the 2011 Model included a test in the Tiering Calculation section of the 'Rates' sheet which flagged whether tiering was needed if the fuel expense was less than the average subsidy and that, in the '050711' model, this showed "FALSE" (CEPA-51346 ad 51347)***

Yes, confirmed. This is because in 2011, the fuel expense (cost per kWh of heat output) was greater than the proposed subsidy.

- f. ***Confirm that the 2011 Model was created by Paget Fulcher of CEPA***

Paget Fulcher was the main author of the model. My recollection is that others contributed although I cannot recall exactly how the work was divided up.

10. ***Clarify whether CEPA provided or undertook a Model Training Session with DETI, and if it did, clarify when and where it occurred, who was involved (both for CEPA and for DETI), what the training entailed, and what (if any) materials were used in the training.***



My recollection is that Paget Fulcher provided such a session for DETI staff. I was not present at the session so cannot confirm who was there, or precisely what the training entailed. I note that in my email of 12 April, there is a reference to another session offered to DETI: “*we have also offered to talk Sam [Connolly, DETI economist] through the model...I’ll bring my laptop, which has the model on it, and a USB stick so we can give it to him if we want.*” (WIT-105852). I do not recall if DETI took up this offer.

11. ***Clarify when, and how, you first became aware that DETI could not operate the 2011 model (as evidenced by your email to Mark Cockburn of 24 November 2011, at CEP-115935 [served herewith], wherein you state, in the context of the addendum work request from DETI, that “they need this done and we are the only people to do it, since DETI can’t work the model themselves”***

My recollection is that I became aware that DETI found the model difficult to operate during a phone call with Peter Hutchinson shortly before I emailed Mark Cockburn on 24 November 2011. I cannot recall precisely when, but it was not more than a couple of days previously. My email to Mark was a brief internal note to my manager, and “*could not*” is possibly over-simplified. I would also note that my email said there was a risk that DETI would decide that it did not want to wait for CEPA/ AEA to do the work (“*there is a risk that [DETI] will decide that this timetable doesn’t work for them...*”). Since the work needed to be done, this indicates that I thought DETI might decide to do the work itself.

The CEPA 2012 Addendum Report for DETI and the Model Created by CEPA in 2012

12. ***Please confirm the following points in respect of the Model created by CEPA in 2012:***

- a. ***Confirm that the 2012 Model was the model originally provided to DETI in 2011, but substantially modified by***



CEPA for the Addendum in various respects including as follows:

Yes, confirmed.

i. ***To accommodate the inclusion of ongoing hassle costs:***

Yes, confirmed

ii. ***To make changes to the tariff bandings:***

Yes, confirmed

iii. ***To prevent the Model choosing a future reference when the capital costs might be lower***

Yes, confirmed

iv. ***To fix the reference year to 2011/2012***

Yes, confirmed

v. ***To update the costs***

Yes, confirmed

vi. ***To rerun the model with the new assumptions***

Yes, confirmed

b. ***Confirm that no copy of the full 2012 Model was provided to DETI***

Not to the best of my recollection. However, my email of 29 February 2012 to Peter Hutchinson (DFE-317138) provided a series of spreadsheets (DFE-78657 to DFE-78666) which set out exactly how each tariff was calculated. These are in the same format and layout as the model and are almost certainly direct extracts from it.



- c. **Confirm that DETI could not have replicated the changes made by CEPA to the 2011 Model without significant help**

Answering this would require me to make a definitive statement on DETI's modelling capabilities, which I cannot reasonably be asked to speculate on. I note, as in the previous answer, that full details of how each tariff was calculated were provided to Peter Hutchinson on 29 February 2012.

- d. **Confirm that the following differences or discrepancies existed between the information set out in the 2012 Addendum Report and the 2012 Model;**

i. **Table A.76 (WIT-106308/9) shows the up-front barrier costs to be £3,951 whereas the Model uses £5,364.**

Yes.

ii. **Table A.76 shows the biomass fuel cost to be 4.39p/kWh whereas the Model uses 4.56p/kWh**

Yes.

iii. **Table A.76 shows the oil fuel cost to be 4.86p/kWh whereas the Model uses 5.08p/kWh**

Yes

iv. **Table A.76 shows single year values for the biomass and oil fuel costs whereas the Model uses a value representing the assumed lifetime fuel costs**

Yes

v. **Table A.77 (WIT-106309) shows the biomass capital costs to be £4,073 (which equates to an annuity factor of 7.46) whereas the Model uses costs of £3,632 and an annuity factor of 8.37);**

This is correct. However, the value should be £3,636, since the model CEP-51348 - 2017-01-25



- 2012 model.xlsm does not have the correct reference installation selected. It has “Biomass pellet boilers - Commercial/Public - Oil - Rural - Small - pellets” selected on the “Decisions” sheet rather than “Biomass pellet boilers - Commercial/Public - Oil - Urban - Small - new gas - pellets.”

vi. **Table A.77 shows the oil capital costs to be £710 (which equates to an annuity factor of 6.83) whereas the model uses a capital cost of £636 and an annuity factor of 7.63:**

This is correct. However, the value should be £634, for the same reason as the previous answer.

vii. **Table A.77 shows the annuitized barrier costs to be £718 (which equates to an annuity factor of 7.46) whereas the model uses barrier costs of £641 and an annuity factor of 8.37;**

Yes

viii. **Summing the differences in Table A.77 and dividing by the output of the biomass boiler gives a tariff of 6.6p/kWh**

Yes

ix. **The model, using these different inputs, produces a tariff of 5.9p/kWh**

Yes

e. **Confirm that it is not possible to derive the 5.9p/kWh tariff from the data provided in the 2012 Addendum report**

Yes. However, the calculation was set out precisely in a spreadsheet (DFE-78663) which I emailed to Peter Hutchinson on 29 February 2012 (DFE-317138).



- f. **Confirm that the 2012 Model, like that of 2011, included the test in the Tiering Calculation section of the “Rates” sheet for whether tiering was needed but now flagged this as “TRUE”**

Yes

- g. **Confirm that the copy of the 2012 Model provided to the Inquiry (served herewith under Inquiry Reference CEP-51348) shows Tier 1 and Tier 2 tariffs for the small commercial biomass boiler.**

Yes

- h. **Confirm that the work done to create the 2012 Model (as distinct from the 2011 Model) was done by Kaylyn Fraser and, in respect of Ms Fraser, clarify what her precise status was at CEPA at the material time.**

Kaylyn Fraser and I performed the work. I cannot remember exactly how it was divided between us. She was an employee of CEPA at that time. To the best of my recollection, she was at the “Economist” grade within CEPA.

Models Generally

13. **Clarify whether, to the best of your knowledge, NERA ever prepared for DECC a model similar to or analogous with either of CEPA’s 2011 or 2012 Models and, if it did, whether (and if so when) such a model was ever made available to CEPA by NERA and/ or DECC**

DECC’s Impact Assessment (WIT-107225) states that “*The RHI analysis has been carried out using an economic and technical model built by independent consultants (NERA)*”. I have not seen this model. I therefore do not know exactly what it does, although the diagram in WIT-107225 suggests that it is probably analogous to the one prepared by CEPA. To



the best of my knowledge, no model prepared by NERA for RHI purposes was ever made available to CEPA.

Generally

14. ***Confirm that the outcome of CEPA's analysis in 2011 was that a Challenge Fund was a better option than an ongoing support mechanism (such as the RHI Scheme) because it delivered a greater amount of renewable heat at a significantly lower cost***

CEPA's analysis noted that a Challenge Fund was a better option than a FIT-type scheme such as the RHI because it had a lower cost per unit of renewable heat (see table 7.4 in CEPA's 2011 report, on WIT-107343). It was also much less exposed to some of the risks associated with an RHI such as the risk of over-compensation or the risk of over-spending. CEPA's remit was to advise from an economic analysis perspective, and within that remit, the Challenge Fund was the better option.

15. ***Clarify whether you are aware of the reason(s) why DETI chose the RHI Scheme ahead of a Challenge Fund and, if you are so aware, set out the said reason(s) and state whether you agreed or disagreed with the decision.***

In deciding which approach to the RHI to take, DETI had to consider a number of factors. The economic analysis was one, but my understanding is that they also had to consider factors including ease of administration, political acceptability, and comparability with GB. I am in no position to second guess their decision, as I was not privy to all the discussions they had with Ofgem, DECC, other civil servants and other stakeholders. The decision on the right RHI for Northern Ireland, taking the circumstances of NI into account, can only be made by the NI Government. However, as was advised at the time, from an economic perspective as was consistent with CEPA's limited instruction to advise on, the Challenge Fund was the better option.



16. ***Provide any further evidence within your knowledge which is relevant to matters which the RHI Inquiry is investigating as set out in its Terms of Reference***

I cannot think of any other evidence within my knowledge which is relevant to the Inquiry.

Statement of Truth

I believe that the facts stated in this witness statement are true.

Signed:

Dated: 7 NOVEMBER 2017