Introduction

1. In my first witness statement (paragraph 36 (**WIT 10341)**) I indicated that I missed the issue of the biomass tariff exceeding the cost of biomass fuel, and I speculated that this may have been either due to the fact that my focus was on the appropriateness of the changes being introduced e.g. banding, reference year, hassle costs etc., or due to the fact that I would have assumed that full analysis of the CEPA modelling would have revealed a marginal cost of fuel higher than the 4.39p per kwh figure.

2. Having challenged myself on the precise reasons as to why I missed the point that the biomass tariff was set higher than the cost of fuel, I am of the view that it was largely this latter point that contributed towards my missing this point. In order to explain how (in my view) this is likely to have happened, I wish to bring the following additional information to the attention of the Inquiry.

3. This information includes what I consider to be details of an important wider context at the time. My reflection on the contemporaneous wider context was stimulated by consideration of recent oral evidence concerning the error identified in relation to the NPC, and my reconsideration of the addendum report. On foot of these issues I have carefully reflected on what my thinking was on this issue at that time.

4. The key points I would like to make in this statement are as follows:

   - Unbeknown to me (until lately) I was largely or completely out of the loop in relation to the key tariff discussions between Energy Division and CEPA in early 2012, and in this regard my opportunity to spot the need for tiering was materially diminished as I was not involved in the critical discussions around tariffs in 2012 that introduced the vulnerability.

   - I was confident that prior to 2012, that both Energy Division and I agreed that my role did not extend to tariff modelling, which was the sole preserve of CEPA and AEA, who held all the expertise to operate the complex model that they themselves had built.

   - My opportunity in 2012, to spot the tiering issue, was thus limited to the more general Economist role in reviewing the overall project for casework (of which the initial tariffs were only one component of the overall case).

   - Within that more limited role it should be recalled that I had already received specific comfort from CEPA on tiering previously, and that the last CEPA Model I had seen back in the summer of 2011 included inbuilt functionality to trigger tiering when needed. Accordingly, I was not on the “look-out” for something that I quite reasonably believed was already covered by CEPA.

   - Technically the tariffs are not derivable from the tables and only derivable from the model itself, which I did not have in 2012, and in any case, I had advised Energy Division that I did not feel fully competent to use.

- I was aware of the impact of boiler efficiency on the cost of heat produced and was also aware that tariffs were to include projected future increases in fuel costs over and above any fuel 4.39p cost figure for 2012 set out in a summary table.

- While undertaking that more limited role right at the end of the process, in preparation for the casework committee meeting, I did not feel the need to react to a summary table of costings with a fuel cost of 4.39p and a tariff of 5.9p, particularly as those figures were produced from what I believed was the same 2011 model, which already had the safety feature around tiering inbuilt into its functionality.

Tariff Context – Value for Money Assessment

5. Firstly I want to explain the wider context in which I considered the final tariffs. Indeed, the first opportunity I had to spot any error was upon receipt of the draft casework papers **(DFE – 159578)** I received from Peter Hutchinson on 28 February 2012, in respect of which I was asked to provide VFM comments. These are the first documents that I saw that included a 5.9p tariff for biomass.

6. Upon receipt of these documents the task I was given was to consider VFM and provide comments for the casework panel. I believe that this was the specific, and only task that I was being asked to undertake at that point. However consideration of whether the tariffs were the minimum required, and the appropriateness of the cost items being compensated, were factors I had considered, pursuant to the first CEPA report in determining whether the project met the requirements of the NIGEA guidance.

7. As the Inquiry has recently noted, the addendum report provided by CEPA indicated that the total subsidy cost of the Scheme was projected to increase by over £100m (from the assessment CEPA previously provided). I was not notified of, and so was unaware of, this increased cost until I received the addendum report on 28 February 2012. This was despite Energy Division having been aware of the cost increase from when it took receipt of the final version of the addendum report on 16 February 2012. Consequently, when considering VFM I took note of this cost increase and reflected upon the potential impact on the NPCs that had been developed by CEPA, eight months previously. It is my opinion that I could not have failed to notice the increased cost, not only in the Addendum report but also given the very explicit way in which it is noted in the draft synopsis report that was provided to me. The change was highlighted as a tracked change in a different colour from the body of the draft report, and one can clearly see the struck out figure of £335m being altered to £445m in the third last bullet point of this document (WIT 29027).

8. This issue has only resurfaced in my memory as a result of the recent oral evidence sessions and my subsequent investigations relating to how this issue was addressed at the time. From revisiting the addendum report I noted the statement in relation to carbon on page 44 and recalled trying to analyse the data contained within this annex. In particular, I now recall trying to estimate the value of this "major difference" in carbon saved and recollect that it involved having to manually input the high level impacts outlined in the Addendum Annex B

into a spreadsheet. This task was carried out on Wednesday, 29 February 2012 and was done under considerable time pressure as I had been requested to provide comments to Energy Division the next day. However, at the time I was content to meet the deadline that was set and felt that I had enough time to perform the specific task that I had been asked to undertake which was to consider value for money and provide comments for section K of the synopsis paper.

9. I have no record of the specific VFM calculations I undertook and have no recollection of the particular methodology I used. Unfortunately the excel document which would have shown my methodology was not saved on Trim, with the likely reason being that it was a quick and high level calculation that I perhaps saved to my desktop. However having re-considered these figures it is clear that based on this evidence, there is a large increase in the carbon benefit associated with the updated tariffs as the present value of total carbon displaced from the previous 2011 RHI rates increased by approximately 36%. Applying this increased figure to the total carbon saved originally estimated by CEPA in 2011 of £248m **(page 79 WIT – 00672)** yields a value of £89m. Although I cannot be certain, I am of the view that this is the most likely approach that I adopted and this is the value that I calculated.

10. In addition, I also now believe that I also tried to estimate the total cost of administering the Scheme, as the cost of this was now known as a result of Energy Division having engaged with Ofgem. To assess these cost savings, I believe that I profiled/estimated the costs outlined in the synopsis paper (para 38 DFE – 159589) to 2040, and that this yielded a present value figure of approximately £9m that represents a saving of £24m on the 10% (£33.4m) cost that had been assumed in the CEPA 2011 report (section 7.6.2 WIT – 00673). Again, although I cannot be certain, I am of the view that this is the most likely approach that I adopted, and this is the value that I calculated.

11. As a result of these calculations I was therefore of the opinion that there was an additional benefit of £113m (£89m + £24m) and that I considered that this cancelled out the increased monetary cost of £111m that had been noted in the addendum. I therefore considered that the original NPC of £242m was still about right, or likely to be within an acceptable margin of error and that even without this additional benefit the NI Alt rates would still represent a better value for money outcome in NPC terms. Therefore any additional carbon benefit, never mind potentially £89m, would only serve to widen this gap. I recall that I relayed this information to Peter Hutchinson, which in all likelihood would have been conveyed via a phone call for his own information and consideration.

12. I am also now of the opinion that the reduced administration costs I calculated could have been the reason, although I cannot say with certainty, why I later made the comment to Peter on the Business Case for DFP in an email on 21 March 2012, sent at 13.36, to the effect that "*perhaps you could clarify what has been assumed in relation to admin costs for the NPV calculations*". This indicates to me that I was aware of the change in the administrative costs outlined in the Business Case for DFP (DFE 159780) and that although the NPV remained the same, a note should be included to explain what proportion of the NPV was now being made up of administration costs that had previously been estimated at 10% of total funding within the CEPA 2011 Report.

13. In my view, although this assessment was carried out using high level impacts, it was ultimately up to Energy Division to decide whether to re-engage CEPA to produce more accurate NPC calculations. I would also note that NPV/Cs are used to assess the relative

balance between options and are not used to inform the overall funding position or budgetary requirements or indeed cost to the taxpayer (see NIGEAE 2.8.11 & 2.8.12 for information). Indeed the total potential financial cost to the taxpayer of £445m was clearly being presented to the Casework Panel alongside the initial £25m four year funding provision. For clarity, this funding did not include the other monetisable costs outlined in section 2.6.3 (WIT-00674) relating to the costs of metering or administration costs for installers that did feature in the NPC calculations.

Tariff Context – Other Issues

14. Whilst I remain of the view that the VFM assessment (part of which is outlined above) was my priority upon receiving these papers, I nevertheless did read the papers in their entirety, including the tariff tables in Annex A.

15. However, in relation to the specific point on the perverse incentive, it is important to note that the potential issue of the tariff being greater than the cost of fuel had been considered by CEPA the previous summer within the 2011 report and that CEPA had stated that there was no possibility to increase output to generate extra subsidy (footnote 66 page 65 of the CEPA 2011 report). Furthermore, they had produced a model that included a tiering function that should have alerted them to the situation of the tariff being higher than the marginal cost of fuel, should this prove to be the case. Consequently when revised tariffs were received as part of the addendum work, I had no expectation of the tariff being higher than the marginal cost of fuel as it had been considered and dealt with (as had been thought at the time) as part of the 2011 work.

16. CEPA had also been re-engaged specifically and exclusively to update tariffs and I recall informing Peter Hutchinson that I did not have the expertise to operate the model and update tariffs. This was therefore a very discrete task that CEPA undertook that I had no involvement with (aside from possibly receiving an early draft of the report). Neither was I involved in the policy analysis or discussion around tariffs (including the potential need for tiering) that Energy Division engaged in, directly with CEPA at that time. As I was not involved in this analysis, this also meant that I had less opportunity to identify potential errors in the tariffs. At no time did Energy Division ask me to specifically check the tariff calculations and I did not believe that it was necessary for me to check the tariff calculations in order to form the VfM advice for the Casework Committee.

17. There were also 12 separate tariff tables within Annex A of the Addendum report to consider and not just the single biomass tariff. Therefore the level of scrutiny had to be proportionate, within in this wider context, and it was, in my view, reasonable in the circumstances to rely on the consultants to operate their model correctly and to produce accurate calculations, and would not have been an unusual working practice.

Documentation – key points

18. As mentioned above, the opportunity to have spotted the higher subsidy flaw would have been as part of my consideration of the draft casework papers **[DFE- 159578]**. These casework papers included both the draft synopsis paper prepared by Peter Hutchinson and the final addendum report prepared by CEPA.

19. Within the synopsis paper, under paragraph 19 **[DFE – 159583]**, there is a table containing technology assumptions for the medium biomass tariff. Upon examining the fuel cost, the reader is directed to footnote 4 which refers to the 4.39p cost of biomass figure that states:

    "*Note that this is the fuel cost in 2012. The model takes account of expected future fuel costs in determining tariffs"* (emphasis added).

20. Subsequent to this in paragraph 20 **[DFE – 1595840]** there is the following statement:

    > *"The appropriate tariff is developed by assessing the whole life cost differential and takes into account future fluctuations in prices"* (emphasis added).

21. In addition, upon reading the addendum report prepared by CEPA, before one gets to the tariff breakdown tables, on page 15 **[WIT – 00809]** the reader is directed to footnote 23 that states:

    > *"Note that the model takes account of expected increases in fuel prices over time, as shown in the table when determining tariffs. It does not solely base the decision on the price in the current year".* (Emphasis added)

22. Consequently if one considers these statements and asks the question – "*what was the fuel price used to set the 5.9p tariff?*", based on reading these documents it was my understanding at the time that the answer cannot be 4.39p and it has to be something else that is *higher*. Therefore based on a full reading of the synopsis paper and addendum, I do not believe that it was obvious to an informed reader that the tariff was set higher than the cost of fuel. This is due to the fact that it was my understanding that the actual marginal cost of fuel used in the model is not presented within these documents and is unknown to the reader. This information was only available to CEPA and there was an acceptance by Energy Division that my role did not extend to interpreting or otherwise checking the model, as had been established when I confirmed to Peter Hutchinson prior to CEPAs re-engagement in November/December 2011 that I was not in a position to provide advice on CEPAs modelling.

23. In addition, as a reasonably well informed reader I understood that the 4.39p figure and other biomass prices set out in the report are input prices. Consequently the efficiency of the boiler has to be taken into account when determining the marginal cost of producing an additional unit of heat. This means that the "something else that is higher" cost of fuel referred to in paragraph 21 above, is higher still, as it has to be divided by 85% to take account of the efficiency of a biomass boiler. Again this figure is not presented anywhere within the reports.

24. It is my belief that this information and knowledge led me to not making any direct comparison between the 4.39p cost of fuel and the 5.9p tariff, as there was no logical basis for doing so. Furthermore, it is my view that the actual marginal cost of fuel used to set the 5.9p tariff in 2012 (and all subsequent years) is not presented anywhere within either the synopsis paper or addendum report. Therefore I was not prompted to consider this issue. Indeed the only place where this figure can be located is within the detailed spreadsheet analysis prepared by CEPA. It is for this reason that I believe that I missed this key point and was not aware of the flaw in the tariff.

25. Although the Department did not receive a copy of the full model, individual spreadsheets including the small commercial biomass tariff were received on the 29/02/2012. I have no recollection of being sent or having seen this information and it is only upon an examination of this data (**DFE-317136**) in cell H21 that the actual marginal cost of fuel used in the model is revealed. This figure is 5.4p (5.6p adjusted for inflation and comparison) and whilst is obviously is less than 5.9p, I was unaware of this at the time. Furthermore, for completeness and the avoidance of doubt, it should be noted that the figure of 5.4p does not represent 4.39p divided by the 85% efficiency of the boiler and so cannot be derived from the information contained within the addendum report.

26. In addition, I have a recollection of thinking that the 4.39p figure and other cost information presented was largely illustrative and for presentation purposes, and given the complexity of the tariff calculations, that included future prices I did not think it possible to derive tariffs based on the information presented in the tables.

27. Indeed I remain unconvinced that it is possible to derive tariffs from this information, even when the correct costs are included for barrier costs and on-going hassle costs. This is due to the fact that these tables do not take account of future fuel prices that were a feature of the CEPA analysis. Indeed it may be possible that presenting the information in this way was simply to facilitate a comparison with GB cost information that I now understand was presented this way as part of a State Aid application. Indeed I believe this point is alluded to on page 23 of the addendum report where CEPA stated:

> *"Please note that while our approach produces results close to that for the GB RHI, it is not quite the same. In particular we consider future changes in fuel costs in our tariffs".*

28. Consequently my interpretation of this statement is that the information is presented in the tables using a similar methodology to GB, however one cannot derive the exact NI tariffs from it, as CEPA advised that it took account of future changes in fuel costs.

29. This information correlates with an email I recently viewed as part of my witness bundle (DFE – 156567/159568) which appears to be a discussion between Iain Morrow and Peter Hutchinson as to the reasons why there are differences between the technology resource cost tables and tariff breakdown tables: . As part of this Iain states:

> "On fuel costs, we take account of how fuel costs increase over time rather than just the cost today, so get slightly different results".

30. In my view this is the reason that the statement noted in paragraph 26 above was inserted into the final version of the addendum report and represents updated drafting to the version of the addendum that was received on the 27th of January. Although I was copied into these emails I have no recollection of being aware of this at the time.

31. I believe that this information along with the fact that on page 23 of the Addendum there is the following statement, *"Note that cost figures have been rounded to the nearest pound (except where otherwise noted or for small sums) and tariff figures to the nearest 0.1p. Totals may therefore not add exactly",* suggest to a reader that it is not possible to derive

tariffs precisely from the information being presented. In my view this would render any attempt to check tariffs using this information pointless.

Amendments to previous witness statement

Updated response to Questions 18 - 20

1. The first formal indication I received that the Department preferred an ongoing support scheme is upon receipt of an email DFE-158784 on the 27th of June from Peter Hutchinson concerning a draft consultation paper that included the following statement:

   "We have recently engaged with the Minister and she has engaged on a preferred route forward" (i.e. an RHI tariff scheme)

2. It is also my recollection that the administration costs associated with a challenge fund being an affordability constraint was formed during the latter stages of the CEPA 2011 appraisal work and I note the statement in the CEPA economic appraisal (page 97) that states:

   "However, it has to be recognised that there are constraints on administration budgets"

3. It is within this context that I understood that the Challenge fund had been taken off the table by Energy Division. Furthermore I was not requested to provide a VFM statement at this time (July 2011) and therefore was never requested to consider the economic benefits of a challenge fund over a tariff type scheme.

4. Subsequent to this, the entire direction of travel for the next 8 months was solely in relation to adopting a tariff scheme. Despite my subsequent lack of involvement in the project at this time (from July 2011 to February 2012), aspects of the project that I had an awareness of included the consultation paper that was consulting on a tariff scheme, engaging Ofgem for the feasibility study to administer a bespoke tariff scheme and finally the business case to re-engage CEPA to update the tariffs. Subsequent to this I was sent a draft Synopsis paper for comment that only included details of the tariffs and NPCs associated with an NI tariff scheme or a GB tariff scheme.

5. Consequently, in my view, I was not being requested to consider the economic merits of a challenge fund when I drafted my note concerning VFM, as it had been ruled out as an option by Energy Division 8 months previously. Furthermore the costs associated with the challenge fund had not been updated as part of the CEPA 2012 work.

6. As far as I was concerned the CEPA 2011 report was being provided to the Casework panel as background reading, only some of which was still relevant, much in the same way that the Proyry report was also being submitted. Indeed, I did not see the CEPA 2011 report being front and centre of the casework submission and considered that the synopsis paper had been drafted for this purpose. In my view the challenge fund was only discussed at the Casework Meeting as the outdated analysis contained within the CEPA 2011 report was picked up on by Shane Murphy when he was reviewing the casework papers.

Updated Response to Question 40

7. I can confirm that I was sent DFE-158162 a copy of the March 2011 DECC publication on the GB RHI scheme DFE-158163 to DFE-158252 that includes a reference to degression. I have no

recollection regarding the extent to which (if any) this issue featured in subsequent discussions between Energy Division and CEPA.

Updated Response to Question 50

8. I previously indicated that I understood that £25m of funding had been provided by HMT for the purposes of an RHI and that any commitments made using this funding would be met by HMT for the duration of the scheme. I also indicated that this understanding was informed by officials within Energy Division and did not change from the inception, to the end of my involvement with the scheme. I can no longer assert this and wish to state that there was some uncertainty at the early stages of the scheme in relation to whether funding would be made available post 2015 by HMT.