Chapter 49 – Tiering

49.1 In this chapter, and chapters 50 to 55 which follow it, the Report addresses a number of specific topics which, although considered in earlier chapters as part of a broader subject or issue, also merits consideration on its own as a discrete theme. In the circumstances, there will in this chapter, and those which follow, be some necessary repetition of material which has appeared in earlier chapters.

49.2 This chapter addresses one of the major issues which captured the attention of both the PAC and the public in late 2016 and early 2017 (and which has been considered in some depth by the Inquiry), namely the concept of 'tiering' of tariffs and its absence from the NI RHI scheme when it was launched in November 2012.

49.3 Prior to the controversy surrounding the NI RHI scheme, the concept of tiering in this context is unlikely to have been generally known or understood. As indicated above, throughout the course of this Report up to this point the Inquiry has addressed tiering in its discussion of the development, introduction and operation of the NI RHI scheme. In this chapter the Inquiry specifically examines tiering itself.

What is tiering?

49.4 DECC published an RHI Impact Assessment (IA) in March 2011,[2647] alongside its Renewable Heat Incentive policy document. That IA set out a number of key economic, technical and behavioural assumptions underpinning the proposed GB RHI scheme, including a 'hurdle rate' or rate of return on investment of 12%, and specifically cautioned that "Uptake of renewable technologies is highly dependent on the relative costs of heat generation from a renewable source compared to fossil fuel heating."[2648]

49.5 The IA also referred to a potential "perverse incentive" to over generate heat which could arise if installations were offered an opportunity to receive a tariff payment per kWh that exceeded their marginal costs of generating that unit of heat.[2649] DECC recognised that this perverse incentive may well arise in some of the proposed biomass boiler tariffs, particularly for those boilers beneath 1MW in size. In order to address the risk of creating such a perverse incentive to overgenerate heat, the IA explained that the final GB RHI proposals "include a 2 part biomass tariff (or tiered tariff)."[2650]

49.6 The higher, or Tier 1, tariff was available for a portion of the potential maximum annual heat output of a biomass boiler. This limited portion was to be the equivalent of 1,314 hours multiplied by the installed capacity of the boiler.[2651] This was based on the assumption that average users would utilise their biomass boiler for 15% of the available hours in the year (15% of the available 8,760 hours in a year being 1,314). The percentage of use in a year was referred to as 'the load factor'.

2647 INQ-20879 to INQ-20916
2648 INQ-20888 to INQ-20889
2649 INQ-20891
2650 INQ-20893
2651 The IA, at paragraph 26 (see INQ-20893), in an obvious error refers to "the first 1300kWh of heat." The Inquiry considers that this error would likely have been obvious to any reader of the IA, given the fact that at Table 1 (see INQ-20886) the "tier break" of "installed capacity (kWth) x 15% peak load hours (i.e. 1,314)" is clearly set out.

49.7 The aim of the higher/Tier 1 tariff was to cover, over the lifetime of the incentive scheme, the capital costs associated with the change to renewable heat, such as the additional cost of acquiring the biomass boiler, as well as the additional cost of running such a boiler. Accordingly, an RHI claimant with a medium biomass boiler with a load factor of approximately 15% should receive, over the life of the scheme, compensation amounting to the additional costs incurred by them in acquiring and running the biomass boiler (as opposed to a 'counterfactual', fossil fuel boiler) plus an appropriate rate of return (approximately 12%, as mentioned above).

49.8 If an RHI claimant ran their biomass boiler at full capacity for more than 1,314 hours in a year, then all subsequent hours of use would receive the lower, or Tier 2, tariff.

49.9 The lower/Tier 2 tariff was set at a level designed to cover only the additional running costs, and not the additional acquisition costs, of a biomass boiler and was set at a level which removed any incentive to overgenerate heat.[2652] Paragraph 26 of the IA document stated:

> "The Tier 2 tariff (at 1.9p/kWh) has been set in a way that removes the perverse incentive to over generate and vent heat for that segment while based on our evidence on gas and biomass prices also provides generators with sufficient support to cover the net cost of the renewable fuel (in line with the principle of the RHI)."[2653]

49.10 In due course, regulation 36 of the GB RHI regulations dealt with payment of the periodic support payments to scheme participants, and provided that such payments must accrue from the tariff start date (the date of accreditation of an installation) and be payable for 20 years (the so-called "grandfathering" principle). The tariffs were set out in a schedule to the regulations and were subject to adjustment each year in accordance with the retail prices index.[2654] A user of a biomass boiler accredited to the GB RHI scheme would therefore expect to receive the Tier 1 tariff, and then the Tier 2 tariff, depending on the number of hours for which the boiler was used, each year for 20 years from the date of accreditation.

49.11 It is important also to record the express recognition at paragraph 28 of the IA that tiering of tariffs was necessary not only to guard against the perverse incentive to overgenerate heat but also to prevent excessive compensation in respect of installations that had genuine heat requirements greater than that assumed for the relevant reference installation:[2655]

> "In addition to the elimination of the perverse incentive the two tiered tariff also provides the additional advantage of eliminating rents for installations that have higher heat requirements than the reference installation and face lower costs (this is achieved as the installations receive a lower ongoing fuel costs tariff (tier 2) to cover their higher operational time instead of the previously proposed high single tariff which aimed to also cover capital costs)."[2656]

49.12 It can therefore be seen that, from a very early stage, DECC recognised the utility and importance of including tiering in the GB RHI scheme as a means of moderating both the income and return available to scheme participants in order to deliver on the scheme's policy objectives and safeguard public funds.

2652 INQ-20893
2653 INQ-20893
2654 INQ-20956
2655 INQ-20893
2656 INQ-20893

Tiering in the CEPA reports

49.13 The potential for overcompensation to occur without tiering was clearly explained by CEPA in the following passage in a document sent to the Northern Ireland Assembly's PAC on 2 December 2016, after its appearance before the Committee on 23 November:

> "Second, over the twenty year life of the scheme, in many cases because of the high load factors, the level of subsidy is not only paying for the conversion to the renewable technology, it is also effectively providing an additional revenue line (and/or subsidising the underlying economic activity, such as poultry farming). The intent was only ever to subsidize the shift to the renewable technology so there is no justification for providing a subsidy that goes beyond this."[2657]

49.14 As discussed previously, DETI retained CEPA to advise it about, amongst other things, potential options for the delivery of a Northern Ireland Renewable Heat Incentive, including an assessment of appropriate tariff levels.[2658] In the CEPA draft final report of 31 May 2011 it considered subsidy levels for the NI RHI scheme.[2659] The Inquiry bears in mind that when designing a scheme to encourage people to switch their heating source from fossil fuels to renewables, a central question is always: how much subsidy will be enough to incentivise a switch, without overcompensating? The authors of the CEPA report looked at a number of approaches to setting the subsidy levels for a Northern Ireland scheme using DECC methodology for commercial and industrial heat users but based upon Northern Ireland specific input assumptions.[2660]

49.15 Both the Draft Final Report of 31 May 2011, and the Final Report of 28 June 2011 considered 'Tiering', providing a short description of the tiering approach being considered for GB but, crucially for the Northern Ireland scheme, failing to recommend that tiering be adopted. CEPA's analysis of the issue, set out at page 65, paragraph 6.7.1 of its Final Report, was as follows:

> "The rates shown include two "tiers" for some technologies. This is an approach taken by the GB RHI where technologies receive one rate (the "tier 1" rate) for output up to a certain annual limit (15%) and then a second, lower, rate (the "tier 2" rate) for any additional output. Tiered incentive rates for investors with high load factors were calculated to limit subsidy to any incremental fuel expense should they breach the DECC tiering threshold of 15% load factor. We considered tiering for the NI RHI rates, using the DECC approach. However, when setting the NI recommended levels for this report, the incremental fuel cost was higher than the subsidy rates in all cases. Therefore no tiering is provided in the rates in this report."[2661]

49.16 That analysis appears not to have taken account of the fluctuating costs of fuel. So while the statement could have been accurate at the time it was made, it may not have remained accurate in circumstances where the fuel cost dropped to below the applicable subsidy rate. In fairness to CEPA, it did give a number of warnings in the Final Report regarding, amongst other things, the inherent uncertainty in the figures relied upon by it when setting NI RHI tariff rates (including, in particular, the relative prices of biomass and fossil fuels and the relative

2657 DFE-182643
2658 WIT-105246
2659 DFE-187754 to DFE-187887
2660 DFE-187958
2661 DFE-188184

technology costs)[2662] and the importance of monitoring the scheme[2663] and reviewing it after 2-3 years.[2664]

49.17 Mr Cockburn, a director of CEPA, confirmed in his oral evidence to the Inquiry that the reference to tiering in the 2011 reports was in the context of guarding against the perverse incentive and did not deal with the risk of overcompensation as a result of high levels of usage or high load factors.[2665] This was in spite of what had been said about tiering in the March 2011 DECC documents referred to above. In this regard, Mr Cockburn maintained during his oral evidence that, in his opinion, the primary purpose of tiering was to guard against the perverse incentive, rather than to guard against the risk of overcompensation involving those with high load factors.[2666]

49.18 By February 2012 when the Addendum was produced by CEPA, it was clearly alive to the potential for tiering and Mr Cockburn accepted, in his evidence to the Inquiry, that CEPA even suggested tiering of the Ground Source Heat Pump (GSHP) subsidy in discussion prior to issuing the report.[2667] Crucially, Tables A25 and A27, which were only a page apart in the Addendum, recorded the price of wood pellets for small commercial biomass boilers as 4.39p/kWh and also a higher tariff of 5.9p/kWh. No regard appears to have been had to the contents of paragraph 6.7.1 of the earlier reports, and the issue they raised, and no reference was made to the need for tiering.

49.19 As outlined in chapter 5 of this Report examining the work of CEPA, its own 2012 model had actually flagged up the fact that the tariff level was now higher than the cost of heat production; but this too was not noticed and acted upon.[2668] In the course of giving evidence to the Inquiry Mr Cockburn conceded that "It shouldn't have been [missed]."[2669] Mr Cockburn's CEPA colleague, Iain Morrow, in his written evidence to the Inquiry, acknowledged that the 2012 model used by CEPA to determine the RHI tariffs may well have flagged up the necessity for tiering.[2670] However, this would not have helped DETI officials since neither the full 2012 model, nor the relevant part of it, was shared with them.

49.20 Nevertheless, CEPA has made the point to the Inquiry that this disparity between the level of subsidy and the price of biomass was sufficiently obvious to have been picked up by Mr Hutchinson and other DETI officials and committees who were involved. While it is a fact that the problem could have been spotted by others, this does not change the fact that CEPA were the expert consultants whose responsibility it was to design the tariffs properly.

The DETI officials

49.21 The question of who should have been alert to this issue was also the subject of evidence to the Inquiry from Ms Hepper. At paragraph 188 of her written statement of 10 November 2017, Ms Hepper accepted that she had not noticed the difference between fuel price and tariff, stating:

2662 WIT-00657
2663 WIT-00606; WIT-00691
2664 WIT-00606 to WIT-00607; WIT-00678 to WIT-00679; WIT-00691
2665 TRA-01368 to TRA-01369
2666 TRA-01366
2667 TRA-01330
2668 TRA-01348 to TRA-01350
2669 TRA-01349
2670 WIT-108229

> "I did not notice these, nor did any other part of the scrutiny chain at this time. I noted the increase in the tariff and accepted the explanation that this was driven by the change in banding and the reference installation, the addition into the tariff of additional barrier costs, inflation and changes to some technology costs."[2671]

49.22 At paragraph 189 of the same statement Ms Hepper said:

> "I noted that CEPA-AEA had recommended tiering for a specific tariff and I did ask the team if it was required for any others and the answer was that the model had been re-run by CEPA-AEA and no other tariff required tiering."[2672]

49.23 In her oral evidence to the Inquiry Ms Hepper said: "We would have seen what the cost of fuel was and we would have seen the tariff."[2673] She explained that she had raised the question, "The tariffs have gone up. One of them is now tiered. Should any of the rest of them be tiered?" with the DETI team.[2674] In this regard, she further said that Mr Hutchinson had raised the question with Mr Morrow of CEPA who had confirmed that no other tariff required to be tiered.

49.24 The Inquiry notes that, when it was drawn to its attention, no-one at CEPA had any recollection of such an enquiry after 16 February 2012, nor is there any written or electronic record of such an exchange. Ms Hepper was asked why, as a matter of common sense as opposed to expertise, three clearly incorrect references to the cost of heat production being higher than the tariff had been missed within DETI. Ms Hepper accepted that, with hindsight, the significance of that distinction should have been picked up but said that, at the time, the team "had a logic as to how you got from the price of fuel and the other elements that had to be worked through to give you the tariff and to cover the elements of it."[2675]

49.25 She explained further:

> "… what we did was we said the price of the fuel is x. You take the efficiency of the boiler into account because you pay out on heat combustion. That takes you up to 5.2 pence and then you've to add in the other elements of the tariff, and that was our logic and our thinking at the time."[2676]

49.26 Based on this evidence from Ms Hepper, DETI officials 'logic' appears to the Inquiry to have been that the starting point for the tariff was the cost of renewable fuel and that all the other elements to be covered by the tariff were added on top. It follows from this that their expectation (wrongly) would be for the tariff to be higher than the fuel cost.

49.27 The Inquiry considers that such 'logic' represents a fundamental misunderstanding of the basis for tariff calculations and is flawed because the tariff was never designed to pay for scheme members' fuel, only for the cost difference between the counterfactual fossil fuel (oil in Northern Ireland) and the renewable fuel, which in most cases in Northern Ireland was biomass. In any event, in Northern Ireland biomass was generally cheaper than oil; no tariff payment was actually needed to cover this element so the starting point should have been zero (assuming that they would not impose a negative tariff), not the price of biomass.

2671 WIT-16676
2672 WIT-16676 to WIT-16677
2673 TRA-01926
2674 TRA-01924
2675 TRA-01926
2676 TRA-01925

49.28 Whatever the logic or rationale, it should still have been clear that, for the small and medium biomass tariffs, the phrase used by DETI officials in their own documents, based on CEPA's statement that "the incremental fuel cost was higher than the subsidy rates in all cases" and the conclusion that "therefore, no tiering is provided in the rates" was simply wrong.

49.29 Mr Connolly, the DETI economist assisting with the development of RHI policy, was asked about the clear difference between the proposed subsidy level and the biomass fuel price in the CEPA Addendum. He said he was aware of the perverse incentive risk but he did not pick up the difference at the time.[2677]

The DETI Minister and her SpAd

49.30 The submission to the Minister on 8 June 2011,[2678] dealt with in detail in chapter 6 of this Report and based on the CEPA draft final report of 31 May 2011, made no specific reference to tiering, and the preliminary proposed tariffs for the NI RHI scheme were shown to be considerably lower than for the GB RHI scheme. The submission did not draw to the Minister's attention the passage about tiering in the CEPA draft final report, and a copy of the report was not provided to the Minister along with the submission.

49.31 The later submission to the Minister of 5 July 2011,[2679] which was accompanied by a copy of the CEPA final report of 28 June 2011, also made no mention of tiering, and consequently no mention of why it was not included for the proposed tariffs for the NI RHI scheme, which were set out in the submission[2680] and the attached July 2011 NI RHI consultation document.[2681] The final CEPA report[2682] did contain the reference to tiering referred to above, at page 65, paragraph 6.7.1, which explained why it was not required for the NI RHI scheme.

49.32 When the Minister was asked to approve the introduction of the NI RHI scheme through the submission of 16 March 2012[2683] the revised proposed tariffs, based upon the CEPA Addendum of February 2012, were set out. The tariff table provided what was said to be the equivalent GB tariffs, and the table showed that each GB biomass tariff was tiered. A footnote[2684] then explained that "Tiering is used to ensure the technology is not 'over-used' just to receive an incentive", before going on to say "Tiering is not included in the NI scheme because in each instance the subsidy rate is lower than the incremental fuel cost."

49.33 As previously discussed in this Report, the Minister confirmed to the Inquiry that she would not have read economic appraisals like the CEPA reports; she relied on the advice from officials. She also relied on her SpAd to read the technical contents of reports/submissions, brief her generally and draw to her attention anything of significance with the potential to affect her decision-making.[2685] Her SpAd did not refer her to the absence of tiering of subsidies in the NI RHI scheme and conceded in evidence that, despite the Minister's apparent reliance on him, he had not read any of the CEPA reports.[2686] That said, had the Minister's SpAd read the

2677 TRA-03560
2678 DFE 29542 to 29552
2679 DFE-29905 to DFE-30167; DFE-30246 to DFE-30247
2680 DFE-30162 to DFE-30163
2681 DFE-29928 to DFE-29929
2682 DFE-30015 to DFE-30159
2683 DFE-31746 to DFE-31772
2684 DFE-31750
2685 WIT-20570
2686 TRA-07556 to TRA-07557

CEPA final report of 28 June 2011 he would have seen in paragraph 6.7.1 that the experts had considered tiering for the NI RHI scheme and, because the incremental fuel cost was (erroneously) thought to be higher than the subsidy rates in all cases, tiering was not included in the NI RHI scheme.

Ofgem and tiering

49.34 The absence of tiering was not recorded as a risk in the risk register appended to the Ofgem Feasibility Study of November 2011. However, consideration by Ofgem in July 2012 of the differences between the draft NI RHI regulations and those in force in GB included an internal email from Oliver More, copied to Marcus Porter of Ofgem's legal department, which contained the observation that:

> "The tiered tariff has proved a good way of reducing the incentive to waste heat in the scheme (i.e. once they have generated beyond the tier threshold, their fuel costs will often be higher than the RHI payments so boilers are only run if heat has a real value). So taking it out ***increases the likelihood of abuse and heat wastage***."[2687] (the Inquiry's emphasis).

49.35 When questioned by the Inquiry as to why such a view had not been communicated to DETI, Mr Porter stated that his "assumption" had been that it was "something that DETI had thought about."[2688] The Inquiry has already examined the circumstances surrounding the failure to pass on Mr More's warning in this regard and, despite the entirely correct observation from Mr More, how Ofgem's RHI Fraud Prevention Strategy positively asserted the presence of tiering on the schemes the strategy was covering. This was an erroneous assertion of considerable importance, because while the GB RHI scheme had the protection of tiering, the NI RHI did not.

Effect of the absence of tiering

49.36 As discussed more generally in this Report, the absence of tiering in the NI RHI scheme (for the reasons summarised in this chapter) left the scheme vulnerable to the very issues a tiered tariff was designed to avoid, namely the creation of a perverse incentive to generate heat unnecessarily in order to attract subsidy income and the overcompensation of scheme participants as compared with the original policy intent.

2687 OFG-205614
2688 TRA-06319

Findings

281. With regard to the perverse incentive, the original tariff structure proposed in the June 2011 final CEPA report indicated that there was no need for tiering because in all cases the tariff was set below the cost of heat production. However, in the course of his oral evidence, Mr Cockburn of CEPA recognised that, in addition to the perverse incentive, tiering also provided potential protection against overcompensation, although he did not consider it to be "the core issue" or the primary purpose of tiering.[2689] The Inquiry finds that CEPA ought to have indicated to DETI that tiering of tariffs might be worth considering as a means of attempting to reduce the risk of overcompensating those with legitimately high load factors.

282. Following CEPA's Addendum of February 2012, tiering was still not introduced despite the proposed medium biomass tariff exceeding the cost of heat production. As an organisation competitively selected for its professional experience and expertise, CEPA ought to have picked this up and appropriately advised DETI.

283. The Inquiry finds that the need for tiering of subsidy for medium biomass boilers was not spotted by any DETI officials or others involved in developing the scheme or reviewing and approving it, despite the clear excess of tariff over the cost of heat production being recorded in the CEPA Addendum of 2012 and subsequently reproduced in documents that the officials had drafted, such as the synopsis for the Casework Committee[2690] and the 2012 RHI business case.[2691]

284. The Inquiry considers that Ms Hepper, Mr Hutchinson and Ms McCutcheon, perhaps understandably, did not fully understand the CEPA approach to modelling or the uncertainty in the assumptions upon which the tariff calculations were based.

285. One of the assumptions, for example the average load factor (hours of heat production per annum) made for the reference case by CEPA of 17%, would prove to have little relevance in practice for usage by the large agricultural sector in Northern Ireland, including the poultry sector which was expanding in response to Moy Park's growth strategy from 2010 onwards.[2692]

286. It did not require any special expertise on the part of Energy Division officials to see that the cost of fuel was less than the subsidy and to question this as it came to be included in documents for which they were responsible and on which scheme decisions were based.

2689 TRA-01366
2690 DFE-398068 to DFE-398070
2691 DFE-00162 to DFE-00163
2692 TRA-06013 to TRA-06019

287. The Inquiry notes that even though tiering was introduced for new applications in November 2015, the fact that the tariff for all other earlier accredited medium biomass installations still continued to be above the cost of heat production was said to have not been properly appreciated by DETI officials until the publication of the NI Audit Office Report in 2016. The Inquiry found extensive evidence, detailed earlier in this Report, that, in contrast, market participants required less than a few weeks to uncover this unintentional and damaging flaw, namely the failure to apply tiering to the small and medium biomass tariffs, resulting in the risk of overcompensation and/or exploitation.