

From: [Hughes, Seamus](#)
To: [Smith, Alan](#); [Thompson, Sandra](#)
Cc: [Cooper, Trevor](#); [Brankin, Bernie](#); [Mills, John \(DET\)](#)
Subject: Business Case - ND RHI 18month Extension (270715)
Date: 29 July 2015 09:10:03
Attachments: [Business case ND EHI 18 month extension.tr5](#)

Alan/Sandra

Attached please find latest draft of Stuart's business case document which he asked me to circulate to you for comment. I have now saved in TRIM to facilitate ongoing editing.

Trevor/Bernie

Also circulated to you at this point to make sure we are on the right track and any comments are welcome at this initial stage.

Regards

Seamus

Seamus Hughes

Energy Efficiency Branch

Department of Enterprise, Trade & Investment

Netherleigh

Massey Avenue

Belfast, BT4 2JP

Tel: 028 9052 9532 (ext: 29532)

TextRelay: 18001 028 9052 9532

Web: www.detini.gov.uk

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

BUSINESS CASE TO EXTEND THE NI NON DOMESTIC RENEWABLE HEAT INCENTIVE (RHI) SCHEME

1. INTRODUCTION

- 1.1 In its Programme for Government (PfG) the Executive has a target of achieving 4% renewable heat by 2015. This is an interim milestone to achieving 10% renewable heat by 2020 in line with the Executive endorsed Strategic Energy Framework (SEF). In pursuit of these targets, the interim Renewable Heat Premium Payment (RHPP) and the Non Domestic Renewable Heat Incentive (RHI) schemes were introduced in May and November 2012 respectively. The full Domestic RHI Scheme was introduced in December 2014 to replace the RHPP. The proposed tariffs for both RHI schemes were developed on behalf of DETI through an external consultancy exercise carried out by Ricardo-AEA. Copies of these reports are attached at **Annexes A & C**.
- 1.2 This Business Case seeks DFP approval to continue the Non Domestic RHI scheme for the 18 months from 1 April 2015 to 30 September 2016. It also seeks approval to increase total RHI expenditure under both schemes. This paper is structured as follows:

| | | |
|---|--|----------------|
| 2 | <i>BACKGROUND</i> | <i>Page 2</i> |
| 3 | <i>VALUE FOR MONEY ASSESSMENT (BOTH SCHEMES)</i> | <i>Page 5</i> |
| 4 | <i>NON DOMESTIC SCHEME PERFORMANCE AND AFFORDABILITY</i> | <i>Page 9</i> |
| 5 | <i>FUTURE BUDGET MANAGEMENT / COST CONTROL</i> | <i>Page 14</i> |
| 6 | <i>PHASE 2 NON DOMESTIC RHI PROPOSALS</i> | <i>Page 20</i> |
| 7 | <i>SCHEME ADMINISTRATION</i> | <i>Page 23</i> |
| 8 | <i>WAY FORWARD / RECOMMENDATIONS</i> | <i>Page 26</i> |
| 9 | <i>ANNEXES</i> | <i>Page 28</i> |
| | <i>A - Original CEPA Report (2011)</i> | |
| | <i>B - Non-domestic Business Case (2012)</i> | |
| | <i>C – Revised CEPA Report (2013)</i> | |
| | <i>D – Phase 2 Consultation Document</i> | |
| | <i>E - DSO Advice on Scheme Suspension</i> | |
| | <i>F – VFM Analysis: Non Domestic RHI Scheme</i> | |
| | <i>G – VFM Analysis: Domestic RHI Scheme</i> | |
| | <i>H – DARD Paper on Poultry Shed Heating Requirements</i> | |
| | <i>I – Non Domestic Expenditure Forecasts (Aug 2015)</i> | |

2. BACKGROUND

The Northern Ireland Renewable Heat Incentive (RHI)

- 2.1 The EU Renewable Energy Directive (2009/28/EC) set a binding target that 20% of the EU's energy consumption should come from renewable sources by 2020. The UK share of this target commits the UK to increasing the share of renewable energy to 15% by 2020 and Northern Ireland is expected to contribute to this share. The Department of Energy and Climate Change (DECC) has indicated that renewable heat levels of around 12%, coupled with 30% renewable electricity consumption are required for the UK to meet its requirements.
- 2.2 Heating energy accounts for around half of all total energy consumed within Northern Ireland with over 98% of our heating fuels coming from imported fossil fuels. Renewable heat is simply heat produced from renewable sources such as solar radiation, biomass materials, heat pumps, geothermal energy and waste materials. The Executive's 2010 Strategic Energy Framework (SEF) includes a target of 10% renewable heat by 2020 against a 2010 base of 1.7%.
- 2.3 In order to achieve the UK renewable heat target, DECC introduced a GB Renewable Heat Incentive for the non-domestic market in November 2011. Northern Ireland (NI) was not included within that scheme because of the differences in the two heat markets. In GB the natural gas market is prevalent and accounts for 68.8% of heating demand with oil only accounting for 10%. This is very different from the NI situation where refined oil products account for over 70% of the overall heat demand.
- 2.4 A separate assessment on the level of incentive (tariff) for the NI RHI was completed (**Annex A**) to inform the final business case (**Annex B**). This was approved by DfP in April 2012 and the interim RHPP (domestic) and Non Domestic RHI schemes were introduced in May and November 2012 respectively. A revised assessment was also completed in 2013 to inform the Phase 2 Review of the RHI (**Annex C**).
- 2.5 £860million was made available from central Government funding to support the introduction of a Renewable Heat Incentive (RHI) in GB over the period 2011-2015. £25million of funding was made available by HMT for a NI RHI over the same period. A further allocation of £11.6m was made available for 2015/16 in line with the Department's AME forecast submitted in November 2014. However due to a significant increase in uptake of the NI Non Domestic RHI scheme over the past 9 months, an increased 2015/16 budget requirement of £23m was submitted in June 2015 as part of a 6 year AME forecast to inform the Chancellor's July 2015 Budget. The Department therefore needs to secure DFP approval to increase expenditure under both RHI schemes.

2.6 The RHI supports the uptake of renewable heat technologies (biomass, heat pumps, solar thermal) by providing regular incentive payments over the lifetime of the technology for actual heat energy generated. The level of tariff is dependent on the size and type of technology and is calculated to cover capital costs, operating costs and non-financial 'hassle' costs over the lifetime of the technology. To date, the NI RHI schemes have increased renewable heating to around 3½% and the Executive's interim target of 4% is expected to be achieved before the end of 2015. The RHI is expected to continue to increase the level of renewable heat in line with the longer term targets set by the EU and by the Executive.

Previous DFP Approval (Non Domestic RHI Scheme)

2.7 The interim domestic Renewable Heat Premium Payment (RHPP) and the Non Domestic RHI schemes were introduced in May and November 2012 respectively. The full Domestic RHI Scheme was introduced in December 2014 to replace the RHPP. The proposed tariffs for the Non Domestic RHI and RHPP schemes were developed on behalf of DETI through an assessment carried out by Ricardo-AEA (**Annex A**). This assessment informed the business case for both schemes (**Annex B**). This was approved by DFP in April 2012 on the basis that:

- *Whilst the scheme is envisaged to be open to new installations until 2020, approval is given for the period 1 July 2012 to 31 March 2015, representing the period for which HMT funding has been secured. Any decision to continue the scheme beyond 2015 would require further/separate DFP approval;*
- *As outlined in Section 7.53 of the Business Case, arrangements are put in place for scheduled reviews to allow the progress of the scheme to be monitored, assessed and if necessary, changes implemented. It is noted that the first review is scheduled to start in 2014 and that the reviews will be carried out by DETI.*

2.8 With low levels of uptake and under spends with both RHI schemes, the Department undertook a Phase 2 Review of the RHI in 2013 to improve scheme performance. This included proposals to:

- extend the Non Domestic scheme to further renewable heating technologies;
- introduce a full Domestic RHI Scheme with annual tariff payments (to replace the RHPP scheme);
- introduce biomass sustainability and emission standards; and
- introduce annual cost control measures.

The proposals were subject to public consultation in October 2013 (**Annex D**) and informed by a further detailed assessment carried out by Ricardo-AEA (**Annex C**).

2.9 Following the public consultation, the Department prioritised implementation of the domestic scheme over the non domestic phase 2 proposals. This involved securing EU State Aid and DFP approval and putting in the place the necessary Domestic RHI legislation.

Need for further DFP Approval (Non Domestic RHI Scheme)

2.10 Regrettably, with the focus on implementing the domestic scheme, the need to secure further DFP approval to continue the Non Domestic RHI scheme beyond 31 March 2015 was overlooked and not sought. DETI Energy officials had wrongly assumed that like the domestic scheme, approval for the Non Domestic RHI scheme had been secured until scheme closure in March 2020. Given this position on approvals for the non domestic scheme, the Department has been urgently assessing options to prevent ongoing, irregular funding. This concerns committed expenditure for new non domestic applications approved from 1 April 2015. Committed expenditure (over 20 years) for applications approved prior to 1 April 2015 is covered by the original Business Case approval in 2012.

2.11 Unfortunately any room for manoeuvre is limited. The basis for the scheme is statutory and it is not possible to cease, suspend or otherwise delay applications. This has been confirmed by DSO (**Annex E**). Effecting legislative change requires affirmative resolution of the NI Assembly and will take at least 3 months to complete. The Department is urgently taking work forward legislative proposals to reduce tariffs for new biomass installations (which make up 97% of all applications). This is covered in more detail in Section 5.

2.12 The Department is seeking DFP approval to regularise the position in relation to expenditure under the Non Domestic RHI scheme (both RHI payments and administration costs) both retrospectively from 1 April 2015 and prospectively to 30 September 2016 on the basis of the scheme's continuous and continuing provision of value for money which is assessed in Section 3. DFP approval is also sought for increased expenditure under both RHI schemes in light of increased uptake and committed expenditure over the past 9 months.

2.13 Before seeking further DFP approval for a longer scheme extension up to 2020, the Department will complete a review of the non domestic RHI to ensure effective controls are put in place to manage future expenditure. More information on this is covered in Section 4.

3. VALUE FOR MONEY (VFM) ASSESSMENT

VFM Assessment - Non Domestic RHI Expenditure up to 31 March 2015

- 3.1 A cost benefit analysis of the renewable heat incentive was undertaken in the original business case for the scheme by the consultants CEPA and Ricardo-AEA (**Annex A**). They developed an economic model which assessed the expected uptake of renewable heat together with the displacement of oil and gas that this implied. Carbon and oil savings were calculated with carbon savings being monetised. The analysis found that the NPV for the scheme was £-242m assessed against a do nothing approach.
- 3.2 CEPA and Ricardo-AEA also undertook an assessment of the development of Phase 2 of the Renewable Heat Incentive in 2013 (**Annex C**) which included development of the Domestic RHI Scheme and a number of new technologies/tariffs for the non domestic scheme. Quantifiable benefits identified again related to carbon emissions which were valued using DECC's methodology. Quantifiable costs are made up of the subsidy payments plus an allowance for administration costs. The consultants' conclusion was that none of the options had a positive NPV purely on a quantitative basis. They did conclude that the net effect of renewable heat on employment would be positive but did not attempt to quantify this. While concluding that the costs appear to outweigh the benefits for all options they calculated the cost-effectiveness of the options.
- 3.3 It was concluded that introducing a seven year tariff for the Domestic RHI together with a number of new non domestic tariffs / technologies (e.g. CHP, District Heating, large biomass, etc) was the most cost-effective option. The full Domestic RHI Scheme was introduced in December 2015. Some of the Phase 2 non domestic proposals are to be taken forward in 2016. These are covered in Section 6.

VFM Assessment – Non Domestic RHI Expenditure from 1 April 2015

- 3.4 To assess the Non Domestic RHI scheme's continuous and continuing provision of value for money in achieving the Executive's sustainable energy objectives, we have calculated the costs and benefits of new installations accredited onto the scheme since March 2015. The costs of the scheme relate to the actual payments made or anticipated to be made for the projects assisted. The benefits relate to the carbon savings using the DECC methodology as before. For the first time we have attempted to quantify the employment benefits.
- 3.5 Estimated annual RHI payments have been calculated by taking the estimated monthly payment for each individual application and factoring up to an annual basis. Three months of actual data from April to June 2015 was used. This was doubled to give an estimate of scheme expenditure for the six month period from March to September 2015. Tariff reductions are proposed from November 2015. Total committed annual expenditure for the six months of new applications is estimated to be £7.16m. This expenditure is then forecast to be paid for 20 years. The benefits of the carbon savings

were calculated using DECC's central forecast of carbon values for appraisal in the non-traded sector. These carbon values were applied to the total estimated tonnes of carbon equivalent saved by the RHI to get an annual cost saving. The total costs and carbon benefits for the six months of applications provide a net present cost of £56.79m over 20 years.

- 3.6 The previous consultants' studies did mention positive employment benefits but did not attempt to quantify them. In a separate piece of analysis for DETI in relation to the costs and benefits of the Executive's 40% renewable electricity target, consultants Ricardo-AEA estimated the job-years created by different renewable technologies and the gross value added to the NI economy that this employment would bring. We have used the same methodology to estimate the benefits of the RHI scheme to NI. Using the estimate of 74.5 job-years per MW of biomass installed and an average NI GVA per job of £51,092, it is estimated that the six month tranche of RHI installations generates an annual benefit of £5.1m¹. This figure takes account of likely displacement of jobs from the home heating oil business. DETI analysis has shown that GVA in the heating oil business is typically 5% of turnover in Northern Ireland. We have estimated the volume of heating oil displaced based on the CO2 savings identified and estimated the turnover displaced, this represents by using GCC's long term average cost of NI heating oil. The calculations show an annual GVA displacement from the home heating oil sector of £333k due to this six month tranche of RHI support
- 3.7 The overall NPV of the six months of Non Domestic RHI support, taking into account the subsidy costs together with the environmental and employment benefits, (including displacement offset), is **£1.85m**. An assessment was also completed on the same 6 months of data to demonstrate how the scheme's value for money improves after the Department's proposed tariff changes are made. The NPV increases to **£41.3m** once the changes are applied. The two assessments are summarised in the table below and detailed in **Annex F**.

| Cost / Benefit Description | Current Tariffs | Proposed Tariffs |
|---|-----------------|------------------|
| Cost of Non Domestic RHI for projects Apr-Sept 15 | (150.38) | (73.87) |
| Carbon reduction benefits (£m) | 50.22 | 50.22 |
| Estimated Jobs GVA (£m) | 107.16 | 107.16 |
| Net Cost-Benefit (£m) | 7.00 | 83.5 |
| NPV (£m) | 1.85 | 41.3 |

¹ Source of figures: 'Ricardo AEA review of the Costs and Benefits of the Northern Ireland Executive's 40% Renewable Electricity Target'- Report for DETI, May 2015. With 74.5 job-years per MW, biomass is one of the highest energy employers. For example, Solar PV is estimated to create 16.7 job-years per MW. The higher biomass jobs figure is likely to be explained by ongoing cultivation of fuel and greater O&M needs. Ricardo has calculated the GVA figures based on NI average GVA published by NISRA. Ricardo's GVA estimate aligns with the estimate for Northern Ireland by the Centre for Economics and Business Research Ltd in their June 2010 report on "The economic value of the woodfuel industry to the UK economy by 2020" for the Forestry Commission.

- 3.8 Previous studies have shown that the RHI has a net present cost to the economy and the most cost-effective tariff scheme was chosen for both sectors (Non Domestic / Domestic) to attempt to meet the 10% target for renewable heat delivered in 2020. The analysis for the six months tranche of assistance also shows a negative NPV. However when the employment benefits are quantified the CBA becomes positive.
- 3.9 It was always anticipated that the RHI scheme would have to be 'pump primed' and have higher tariffs in the early years to generate sufficient uptake. As uptake levels grow and more businesses switch to renewable heating, it was expected that the capital and running costs of these technologies would reduce and that tariffs would be reduced accordingly. Although the NPV is relatively small at £1.85m, the higher tariffs have been needed to generate the current levels of uptake. Because of this, the Department can now reduce tariffs (and improve the NPV) going forward but still hopefully maintain uptake.

The Department seeks DFP approval to regularise the position in relation to non domestic RHI scheme expenditure (both RHI payments and administration costs) both retrospectively from 1 April 2015 and prospectively to 30 September 2016 on the basis that:

- **the scheme's continuous and continuing provision of value for money has been demonstrated; and**
- **the Department will complete a review of the scheme to ensure effective controls are put in place to manage future expenditure.**

VFM Assessment – Domestic RHI Expenditure to date

- 3.10 The 2013 economic assessment for Phase 2 of the RHI (**Annex C**) concluded that introducing a seven year tariff for the Domestic RHI together with a number of new non domestic tariffs / technologies (e.g. CHP, District Heating, large biomass, etc) was the most cost-effective option. The business case for the Domestic RHI Scheme was approved by DFP in September 2014 and the scheme introduced in December 2015. However, in light of experience with administering the Domestic RHI Scheme over the last 9 months, the Department's forecast of scheme expenditure has increased. The Department is therefore seeking DFP approval to increase Domestic RHI Scheme Expenditure.
- 3.11 To assess the Domestic RHI scheme's continuous and continuing provision of value for money we have calculated the costs and benefits of installations accredited onto the new scheme since it was introduced. The costs of the scheme relate to the actual upfront payments made together with committed future expenditure associated with the 7 years of annual tariff payments. The benefits include the monetary CO2 savings together with job creation. The same methodology was applied to calculate job benefits

associated with biomass installations (section 3.6 above). No job benefits were included for either heat pump or solar thermal installations. Although it is expected that both renewable technologies would create added job benefits and improve the NPV. The overall NPV of the first 9 months of the Domestic RHI scheme, taking into account the subsidy costs together with the environmental and employment benefits (including displacement offset), is **£5.96m**. The analysis is summarised in the table below and detailed in **Annex G**.

| Cost / Benefit Description | Total (£m) |
|---|-------------------|
| Cost of Dom RHI for approvals (Dec 14 – Sep 15) | (4.87) |
| Carbon reduction benefits | 3.93 |
| Estimated Jobs GVA (for Biomass only) | 15.56 |
| Net Cost-Benefit | 14.62 |
| NPV (£m) | 5.96 |

The Department seeks DFP approval to increase Domestic RHI Scheme Expenditure for the 5 year (2015/21) approval period to the levels in Table 8.6 on the basis that the scheme's continuous and continuing provision of value for money has been demonstrated.

4. SCHEME PERFORMANCE AND AFFORDABILITY

Scheme Performance

- 4.1 Both RHI schemes are demand led. It is therefore difficult to predict and manage future uptake and expenditure. For this reason HMT agreed to fund the RHI through Annual Managed Expenditure (AME). £25m of AME was initially allocated to the NI RHI for the 4 year 2011-15 period. This initial allocation was based on the Barnett's formula with NI receiving 2.98% of the DECC allocation of £860m.
- 4.2 A delay in securing EU State Aid approval meant that the non domestic RHI scheme wasn't introduced until November 2012. This delay together with low levels of initial uptake generated an under spend of around £14m during the first 4 years. This is much needed investment that the NI economy has effectively lost out on, particularly given our current economic climate. The Department's focus over the past 12 months has therefore been on trying to improve the performance of the RHI to achieve the Executive's PfG target of 4% renewable heat in 2015 and ensure that the renewable heating sector and the wider NI economy benefits from this investment. This included introducing the full Domestic RHI Scheme in December 2014 and completing an extensive advertising campaign during 2014/15.
- 4.3 Table 4.3 shows how the Non Domestic RHI has performed over its first 4 years in terms of application numbers, expenditure and the amount of renewable heat incentivised. Despite a sustained reduction in oil prices, the Department has successfully increased scheme uptake over the last 12 months.

| Year | Average Application Nos | | Committed RHI Expenditure | | | Incentivised Renewable Heat (GWhr) | | |
|--------------------------|-------------------------|--------|--|--------------------------|----------------------|------------------------------------|-------|---------------------------|
| | Monthly | Annual | Commitment Monthly Expenditure (at year start) | Average Monthly Increase | Financial Year Total | Annual Increase | Total | % of total NI Heat Demand |
| 2012/13* | 3 | 9 | £0 | £6k | £19k | 3.5 | 3 | 2.04%** |
| 2013/14 | 10 | 119 | £19k | £21k | £650k | 46.1 | 50 | 2.29% |
| 2014/15 | 36 | 435 | £267k | £75k | £6.5m | 168.7 | 218 | 3.30% |
| 2015/16** (Apr-Sep) | 53 | 318 | £1.3m | £110k | £21.3m | 123.3 | 342 | 4.04% |
| 2015/16**** (Oct-Mar) | 40 | 240 | | £83k | | 93.1 | 435 | 4.60% |

*Based on only 3 months in 2012/13.

**Includes base levels of 300GWh (1.7%) in 2010 and 33GWh incentivised through Domestic RHI / RHPP by 25/7/15.

***Based on actual application numbers from April to Aug.

****Estimated figures for quarters 3 & 4 reflect proposed tariff changes in Autumn 2015.

4.4 The total number of renewable heating installations under the scheme has increased from 263 to 800 during the last 12 months². Over 50 applications are currently being received every month. If these uptake levels are retained, the PfG 4% target will be achieved before the end of the calendar year. This recent increase in applications has been driven by a move in the NI poultry sector away from LPG to biomass heating systems for its broiler houses. Table 4.4 shows the technology mix of applications received to date.

| Technology | Banding | Tariff / kwh | Applications |
|-----------------------------------|------------|--------------|--------------|
| Ground Source Heat Pump | < 20 kw | 9.0p | 3 (0.37%) |
| | 20 – 99 kw | 4.6p | 3 (0.37%) |
| | > 100 kw | 1.3p | 0 |
| Solar Thermal | < 200 kw | 9.1p | 3 (0.37%) |
| Biomass | < 20 kw | 6.7p | 3 (0.37%) |
| | 21 – 99 kw | 6.4p | 775 (96.9%) |
| | > 100 kw | 1.5p | 13 (1.6%) |
| Biomethane Combustion & Injection | All sizes | 3.3p | 0 |
| Total | | | 800 |

4.5 Biomass heating systems in the 21-99 kw banding make up 775 (or 97%) of all applications received to date. Most of these current biomass applications are for 99kw installations for the poultry sector. Conversion to biomass heating³ not only provides the NI poultry industry with a cost effective, low carbon alternative to liquid petroleum gas (LPG), but more importantly keeps chicken litter drier, reducing ammonia levels, boosting bird growth and improving bird welfare.

4.6 The Non Domestic RHI scheme clearly has an important role to play in the future performance of the poultry industry which forms an essential part of the NI economy in terms of jobs and investment. However, it is important that the Non Domestic RHI scheme remains affordable and provides the right level of incentive. It is also important that an appropriate mix of renewable heating technologies is incentivised for security of supply purposes. With only nine (1.1%) applications received for technologies other than biomass, there is clearly a need to try and increase uptake of the other technologies. Section 6 outlines the Department's Phase 2 proposals for the Non Domestic RHI Scheme which include introducing a number of new technologies and tariffs. Section 5 sets out the Department's proposals to reduce incentives for new biomass installations and for controlling future expenditure through tariff digression/reduction.

Scheme Affordability

4.7 The recent increase in uptake has seen committed monthly non domestic RHI expenditure rise by over £1m over the last 12 months. Forecast expenditure for both

² Based on the period 1/9/14 – 31/8/15

³ Based on Ofgem figures at 27/8/15.

RHI schemes in 2015/16 is now over £23m. This is nearly twice the Department's previous AME 2015/16 forecast (made in November 2014). However with previous under spends total scheme expenditure during the 2011 to 2016 period is still expected to be within the 5 year AME allocation of £37.8m (£25m + £12.8m).

- 4.8 The initial 4 year AME allocation of £25m (£2m/£4m/£7m/£12m) was profiled to reach £12m by 2014/15. The original 2012 business case (**Annex B**) assumed that the 10% renewable heat target could be achieved by 2020 by continuing to increase the annual allocation by £5m to reach a maximum of £42m in 2020/21. However, the revised CEPA / Ricardo-AEA assessment completed in 2013 (**Annex C**) concluded that the 1,000 GWh of additional renewable needed to achieve the 10% target in 2020 could not be achieved within a £42m constraint in 2020/21.
- 4.9 To achieve 1,000 GWh within these assumed allocations, the average heat costs (tariffs) for both RHI schemes would have to be 4.2 p/KWh or less for all technologies. Experience with both the GB and NI RHI schemes has shown that rates of 4.2p/KWh or less would not provide the investment returns necessary to attract investors into a new industry and generate sufficient levels of uptake to meet UK and EU targets. Apart from the sharp increase in biomass applications over the last 12 months, uptake of the Non Domestic RHI scheme for other technologies has been low even with rates significantly higher than 4.2p/KWh. Low oil prices have clearly impacted on uptake. A fine balance therefore exists between providing an incentive/tariff that is high enough to attract applications and uptake but is low enough to be affordable and provide value for money. Section 3 provides an assessment of the scheme's continuous and continuing provision of value for money.
- 4.10 In light of the recent increase in scheme uptake and expenditure, a revised AME forecast was submitted to DFP in June 2015 to inform the Chancellor's July 2015 budget. Table 4.10 compares this recent forecast against the profile approved by DFP as part of the Domestic RHI business case in September 2014. It also includes a profile based on the Barnett's consequential (2.98%) of DECC's most recent forecasts for the GB RHI.

| Forecast | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | Total |
|--|-----------|------------|------------|------------|------------|------------|-------------|
| Domestic Capital | 1,140,000 | 1,002,500 | 2,385,000 | 4,285,000 | 4,710,000 | 4,710,000 | 18,232,500 |
| Domestic Resource | 245,085 | 1,727,035 | 2,561,363 | 4,263,763 | 6,554,163 | 8,872,563 | 24,223,972 |
| Non Domestic Resource | 6,540,280 | 20,735,029 | 25,809,062 | 32,109,062 | 38,769,062 | 42,339,062 | 166,301,557 |
| June 2015 AME Forecast | 7,925,365 | 23,464,564 | 30,755,425 | 40,657,825 | 50,033,225 | 55,921,625 | 208,758,029 |
| Included in Domestic RHI Business Case | 6,500,000 | 9,500,000 | 13,500,000 | 18,500,000 | 24,500,000 | 31,000,000 | 103,500,000 |
| Barnett's % of GB RHI Forecast | 6,496,400 | 13,976,200 | 19,966,000 | 26,283,600 | 36,236,800 | 49,170,000 | 152,129,000 |

- 4.11 The June 2015 forecast factors in the Department's proposed legislation to reduce non domestic RHI incentives for biomass from the autumn 2015 and assumes that new application numbers and associated expenditure will reduce as a result. The Total forecast expenditure for the 6 years is now over twice that included in the Domestic RHI business case last year. This is attributed to the unprecedented increase in non domestic applications and committed monthly payments over the last 12 months. Just over 200 non domestic applications were received between November 2012 and 30 June 2014. In the last 14 months a further 600 applications have been received.
- 4.12 Forecast expenditure is also significantly higher than the DECC based figure of £65.9m. This highlights the need for future AME allocations for the NI RHI to be determined by need and not constrained by DECC's forecasts/profile through the Barnett's formula. Despite the difference in populations, application numbers for the NI RHI scheme are currently running at 6% of the GB scheme - over twice the Barnett's percentage of 2.98%.
- 4.13 As highlighted in Section 2, the GB RHI and NI RHI are different schemes targeting significantly different heating markets with oil accounting for 70% of the NI heating market (unlike GB where natural gas is prevalent). Traditionally oil is more expensive than gas so there should be more scope for incentivising NI households and businesses to switch to renewable heating technologies. The rural nature of NI also makes it more suitable for renewable technologies such as biomass and Combined Heat and Power (CHP). In addition, the poultry sector in NI, currently the largest convert to renewable heating (biomass), with 800 broiler houses is four times the size of that in England (with 200 houses). Moy Park's current expansion will see the number of NI poultry houses (and biomass applications) increase even further.

Need For Review of RHI Scheme(s)

- 4.14 Table 4.15 provides an estimated projection of the levels of renewable heat that might be incentivised through the Non Domestic RHI scheme and afforded within the most recent expenditure forecast after changes are made to the biomass tariff in the autumn. It assumes a reduction in biomass applications after these changes but doesn't factor in any increases in uptake or expenditure associated with the Phase 2 proposals for the scheme. These are set out in Section 6.
- 4.15 Even with the Department's increased expenditure forecast, it estimated that 8% renewable heat can be achieved by 2020. In the longer term, oil prices are expected to increase again which will in theory make the current RHI tariffs more attractive and possibly enable them to be reduced to deliver increased uptake without increasing scheme expenditure. However, this is unlikely to be enough to achieve the NI Executive's current 10% target. Achieving 8% renewable heat from a 2010 baseline of 1.7% on the other hand would still be a significant achievement.

| Year | Ave Applications | | Committed ND RHI Expenditure | | | Incentivised Renewable Heat (GWhr) | | |
|--|------------------|--------|------------------------------------|--------------------------|----------------------|------------------------------------|---------------|---------------------------|
| | Monthly | Annual | Monthly Commitment (at year start) | Average Monthly Increase | Financial Year Total | Annual Increase | Running Total | % of total NI Heat Demand |
| 2015/16 | 46.5 | 558 | £1,160,148 | £76,282 | £21,071,364 | 216.4 | 435 | 4.60% |
| 2016/17 | 30 | 360 | £2,075,532 | £32,220 | £27,419,544 | 139.6 | 574 | 5.43% |
| 2017/18 | 20 | 240 | £2,462,172 | £21,480 | £31,221,504 | 93.1 | 667 | 5.99% |
| 2018/19 | 15 | 180 | £2,719,932 | £16,110 | £33,895,764 | 69.8 | 737 | 6.41% |
| 2019/20 | 10 | 120 | £2,913,252 | £10,740 | £35,796,744 | 46.5 | 784 | 6.69% |
| 2020/21 | N/A | N/A | £3,042,132 | £0 | £36,505,584 | N/A | 784 | 6.69% |
| Estimated Domestic RHI Contribution (2015-2020) | | | | | | 167 | 951 | 7.69% |
| Estimated NIRO (CHP) Contribution (2010-2020) | | | | | | 50 | 1,001 | 7.99% |

*Includes base levels of 300GWh (or 1.7%) in 2010 and 33GWh of heat already incentivised through Domestic RHI / RHPP

4.16 The estimated projection in Table 4.15 shows that achieving a 10% renewable target by 2020 may not be possible without a significant increase in expenditure. The Department's Phase 2 RHI proposals are aimed at improving scheme uptake and increasing the number of renewable heating technologies. Section 6 sets out the Phase 2 proposals for the Non Domestic Scheme which include:

- introducing a number of new tariffs and technologies including Combined Heat and Power (CHP) and Air Source Heat Pumps;
- increasing the tariffs for poor performing technologies such as biogas injection/combustion to stimulate interest; and
- introducing a system of annual cost control (including the ability to adjust tariffs in year without legislation).

4.17 Even with the Phase 2 proposals, it will clearly be a challenge to achieve 10% renewable heat within the current AME forecast. It is likely that higher tariffs and increased expenditure will be needed to deliver the necessary levels of uptake. However, this cannot be assessed until the Phase 2 proposals are fully implemented. A more detailed review of the RHI therefore needs to be completed to assess the levels of renewable heat currently in place and how much additional heat can realistically be incentivised within the current forecast.

4.18 The DETI Minister and NI Executive will then have to either agree a reduced 2020 RHI target (possibly 8%) or make a case to HMT / DECC for increased funding for the NI RHI. The Department's ongoing review of the Strategic Energy Framework (SEF) potentially provides an opportunity for the RHI target to be revised and included in the NI Executive's next Programme for Government (PfG).

5. BUDGET MANAGEMENT / COST CONTROL

Background

- 5.1 The need for additional cost control measures has arisen primarily as a result of high uptake of non domestic biomass from the poultry industry over the past 12 months which has seen committed monthly payments rise to over £1.5m. In addition to average application numbers increasing from under 30 to over 50/month, more significant is the increase in average payment. The poultry industry requires constant utilisation of its heating, which results in much longer operating hours than other sectors and therefore attracts much higher RHI payments.
- 5.2 The Department currently forecasts £23m of expenditure for both RHI schemes in 2015/16. This is almost twice the previous forecast made in November 2014 which had been based on historic application and payment levels. The Non Domestic RHI Scheme's continuous and continuing value for money is demonstrated in Section 3. However, the recent increase in biomass applications demonstrates that the tariffs now need reduced to reflect a drop in technology costs. However, making changes to tariffs requires legislation which can take up to 6 months to complete depending on the complexity.
- 5.3 To address this recent surge in applications and committed expenditure, the Department is currently drafting legislation to reduce biomass tariffs for future applicants. The final policy for these changes has been approved by the Minister and ETI Committee and can be viewed on the DETI website via the link in the footnote below⁴. Subject to Assembly clearance, it is now hoped these initial changes can be implemented in November 2015. In the longer term, the Department also plans to introduce an annual system of digression where tariffs will automatically change if in-year expenditure or application triggers are reached.

Current Incentives (Rate of Return) for Biomass

- 5.4 Since 2012, the Non Domestic RHI scheme has received 800 applications. Of these, the vast majority (791) are for biomass technology and most of these are for 99kW boilers - mostly in the poultry sector. To inform the tariff changes, the Department asked the Department of Agriculture and Rural Development (DARD) to complete an assessment of the heating needs of a typical poultry house. This is provided at **Annex H**.
- 5.5 The original biomass tariffs were based on providing a Rate of Return of 12% where the initial capital outlay for installing the renewable heating system would be paid back within 7-8 years. The DARD report shows that 388,000kWh of biomass heat is the upper limit of the expected annual heat requirement for a typical poultry shed. Taking the 99kW boiler as the main provider of heat in most situations and 90% efficiency, this

⁴ http://www.detini.gov.uk/final_policy_paper_on_rhi_proposals__september_2015_.pdf

equates to some 4,355 annual hours of operation (388000 / (99x0.9)). The DARD report shows that a maximum incentive of 1.5p/kWh is now required over a comparable LPG heating system to cover the difference in fuel and running costs.

If fuel/running costs (1.5p/kWh) are deducted from the current tariff of 6.4p/kWh, this leaves a tariff of 4.9p/kWh for determining the Rate of Return. If we assume 90% boiler efficiency the maximum estimated annual payment for a typical poultry house is:-

$$388,000 \times 90\% \times 0.049 = \pounds 17,111$$

- 5.6 The capital cost of a typical 99kW biomass heating system is £50,000. The current RHI tariffs are therefore currently delivering payback in around 3 years (or 33%). However, it must be emphasised that the Rate of Return for other sectors with different boiler sizes or lower operating hours will be much lower. For example, the Rate of Return for a 99kW boiler with 2,000 annual hours (typical for other sectors) is just under 6 years (or 17%). Given that the expected payback for capital investments of this nature would be 7 – 8 years (or 12%), the position above reflects the reduction over time in biomass technology costs. This situation plus the issue of affordability going forward requires the biomass RHI tariffs to be reduced whilst still maintaining a sufficient incentive to ensure uptake of the technology.

Proposed Changes to Biomass Tariff

- 5.7 The current tariff banding, (20-99kW), has resulted in a large number of applications for 99kW boilers. It is proposed to widen this banding up to 199kW (as is the position in GB), to encourage larger more efficient installations.
- 5.8 A two tier tariff system will also be introduced. The standard tariff will apply to the first 1314 peak hours (15% of total possible hours). This is in line with the position introduced by DECC for the GB scheme. Hours over and above these peak hours will be paid at the reduced tariff rate of 1.5p/kWh. The rationale for the introduction of the tiered tariff is that the RHI uplift for the peak hours is towards the capital repayment, whilst the 1.5p/kWh is towards running costs.
- 5.9 Using the example as quoted above the revised annual figures would be:-

$$\text{Tier 1: } 1314 \times 99 \times 90\% \times 0.049 = \pounds 5,737 \text{ (contribution towards return on capital)}$$

$$\text{Tier 2: } 4,355 \times 99 \times 90\% \times 0.015 = \pounds 5,820 \text{ (contribution towards running costs)}$$

$$\text{Total Annual Payment} = \pounds 11,557$$

This example shows that capital payback (at £5,737/yr) would be achieved in 8.7 years (or 11.5%). The Rate of Return will be the same for all boilers of the same size if the operating hours are 1314 or higher.

5.10 Evidence from the poultry industry would suggest that 99kW biomass boilers don't meet all the heating requirements of a poultry house during certain stages of chicken development or during periods of colder weather. LPG is used to meet the additional heating requirements during these periods. Extending the 6.4p/kWh tariff to biomass plants up to 199kW in size is therefore likely to incentivise the poultry industry to install boilers significantly larger than 99kW to meet all its heating needs and remove the need for LPG. Using 388,000 kWh as the maximum heat requirement of a typical poultry house and assuming 90% boiler efficiency, the annual incentives for a 150kW and 199 kW are shown below:-

| Boiler Size | 150 kW | 199 kW |
|---|--|--|
| Assumed Capital Cost | £75,000 | £90,000 |
| Annual Operating Hours | $388,000 / (150 \times 90\%) = 2,874$ hours | $388,000 / (199 \times 90\%) = 2,166$ hours |
| Tier 1 Payment (capital return) | $1314 \times 150 \times 90\% \times 0.049 = £8,692$ | $1314 \times 199 \times 90\% \times 0.049 = £11,531$ |
| Rate of Return | 11.6% (8.6 years) | 12.8% (7.8 years) |
| Tier 2 Payment (towards running costs) | $(2874-1314) \times 150 \times 90\% \times 0.015 = £3,159$ | $(2166-1314) \times 199 \times 90\% \times 0.015 = £2,289$ |
| Total Annual Payment | £11,851 | £13,820 |

5.11 The proposals to extend the 6.4p/kWh biomass tariff banding up to and including 199 kW boilers and to introduce a tiered tariff of 1.5p/kWh will provide a reduced Rate of Return of between 11.6% (8.6 years) and 12.8% for new applications from the poultry industry depending on boiler size. This would bring the Non Domestic RHI tariffs back into line with the 12% Rate of Return included in the EU State Aid approval.

5.12 The introduction of the tiered tariff will reduce the risk of 'gaming' and installations being operated over and above the required kilowatt hours just to generate RHI income. However, the Department also proposes to introduce an annual cap on eligible kilowatt hours above which no further incentives will be paid. DARD has determined the maximum annual heat requirement for a typical poultry house to be 388,000 kWh.

5.13 Allowing for 12,000 kWh of additional heat for exceptionally cold years, the Department proposes to introduce a cap of 400,000 kWh (or 2,233 hours for 199kW boiler). As shown below, the maximum possible annual payment under this cap would be £14,001.

Tier 1: $1314 \times 199 \times 90\% \times 0.049 = £11,531$

Tier 2: $(2233-1314) \times 199 \times 90\% \times 0.015 = £2,470$ (costs)

Total Annual Payment = £14,001

Need for More Flexible RHI Expenditure Controls

- 5.14 One of the biggest challenges with forecasting future Non Domestic RHI scheme expenditure is that uptake levels and individual payments fluctuate month by month. Estimated quarterly payments for accredited heating installations must be accrued until such time as the individual businesses submit their meter readings online to Ofgem. This can take many months. There can also be quite a variation on the payment amount depending on the type of business and of course the weather. This is what happened with the large increase in biomass applications from the poultry industry. Forecast payments for new applications had been based on the average operating hours of previously accredited installations which had typically been around 2000 hours / year generating a payment of around £12,700. The poultry installations subsequently proved to have average operating hours of over 4000 and annual payments of up to £30,000.
- 5.15 Similar variations can arise when forecasting increased Non Domestic RHI expenditure for new applications. The current forecast assumes £100k of additional monthly expenditure based on receiving 50 applications. If more or less applications are received in any given month, this can have a significant impact on financial year expenditure particularly if it occurs early in the year. For example, if expenditure associated with new applications proves to be £150k (i.e. £50k more) in April, this increases the annual expenditure by £600k (i.e. 12 x £50k). Tariff changes can also generate significant over/under spends. If new tariffs are too low, poor uptake will lead to under spends. If tariffs are too high, there could be over spends.
- 5.16 To provide assurance for potential investors, the RHI tariff changes are set out in legislation. This means that tariff changes can take 6 months or more to implement whilst ongoing over/under spends will continue to grow. Drafting and preparing legislation on the other hand requires a significant resource so any decisions around tariff changes must be based on robust evidence and not on one or two months of high applications which could prove to be a blip. A balance therefore needs struck between having the flexibility to change tariffs quickly but still encourage investment in renewable heating technologies. Investment decisions for larger renewable heating installations (>200kW) are often taken over a year before the installation is completed, by which time tariffs could have changed.

Proposals for Automatic Tariff Digression

- 5.17 DECC have introduced a system of automatic tariff digression for the GB domestic and non domestic RHI schemes where scheme expenditure is reviewed every 3 months and if budgetary triggers are breached for individual technologies, tariffs are automatically reduced by a certain percentage. The digression triggers and reduction (%s) are set out in the legislation. The GB non domestic scheme also includes a system of advanced preliminary accreditation where tariffs can be guaranteed for large scale installations that

have completed a preliminary accreditation process with Ofgem. This ensures that the digression system doesn't prevent such installations coming forward.

- 5.18 To provide much more flexible in-year budgetary controls, the Department plans to introduce a system of automatic tariff digression for both RHI schemes as part of the Phase 2 proposals in 2016 where tariffs will automatically be changed to address low or high levels of uptake. Unlike GB, the NI Non Domestic RHI scheme has had very limited uptake from technologies other than biomass so introducing individual budgetary triggers for each technology is unlikely to be appropriate. A quarterly trigger based on additional overall scheme expenditure or applications might be more appropriate. However, this will be examined as part of the RHI review later this year and any proposals will be put out to public consultation. Advanced preliminary accreditation for large scale installations will also have to be considered.
- 5.19 In order for a system of automatic tariff digression to work effectively, the Department will need to set clear budgetary constraints for both RHI schemes which will inform the triggers for reduction. Therefore, clarity is needed around future RHI allocations before such a system can be implemented. The Department plans to consult on the digression proposals in the autumn so budget clarification will be needed before then. These AME allocations might also need to be included in the scheme legislation.
- 5.20 All the difficulties around Non Domestic RHI forecasting and cost control are why DECC produce 3 different forecasts (low / medium / high) for the GB RHI scheme. The Domestic RHI scheme on the other hand is much easier to predict with fixed upfront payments and annual payments determined by the Energy Performance Certificate (EPC) for the property. The domestic scheme also includes an annual payment cap of £2,500 per household. However, the Domestic RHI Scheme currently only accounts for around 13% of total RHI expenditure.
- 5.21 To manage the difficulties around forecasting non domestic expenditure, rather than seeking approval for a specific expenditure profile which will no doubt continue to increase or reduce to reflect in year changes to scheme uptake, it would be much more practical to forecast an expenditure range like DECC based on the future cost of incentivising renewable heat. Even with DECC's system of automatic tariff digression in GB, there can still potentially be 4 months of over spend before any tariffs can be reduced which could still generate a significant annual overspend. Similarly, a drop in scheme demand after a tariff reduction could generate under spends.
- 5.22 If DFP approval for the Non domestic RHI scheme could be provided for a future expenditure range rather than a fixed profile, a future system of automatic digression could be deployed to ensure expenditure stays within the range. Experience in GB suggests that monthly application numbers and new expenditure can significantly increase/decrease month by month. As an illustration Table 5.22 provides an example of a possible expenditure range for the non domestic scheme. It includes three different

forecasts of the expenditure needed to achieve the 10% target based on incentivising new installations at average rates of 4p/KWh, 2½ p/KWh and 1½ p/KWh. The Department's June 2015 Non Domestic RHI expenditure forecast falls in between the low and medium range.

| 2015/16 | £21,071,364 | £21,071,364 | £21,071,364 | 180.0 | 435 | 4.60%* |
|----------------|-------------|-------------|-------------|-------|--------------|---------------|
| 2016/17 | £25,881,384 | £27,343,884 | £28,806,384 | 170.0 | 615 | 5.67% |
| 2017/18 | £27,681,384 | £31,843,884 | £36,006,384 | 180.0 | 795 | 6.75% |
| 2018/19 | £29,427,217 | £36,208,467 | £42,506,717 | 170.0 | 965 | 7.77% |
| 2019/20 | £31,073,051 | £40,323,051 | £47,773,051 | 160.0 | 1,125 | 8.73% |
| 2020/21 | £31,806,384 | £42,156,384 | £52,506,384 | 167 | 1,292 | 9.73% |
| | | | | 150 | 1,342 | 10.03% |

5.23 If expenditure increases towards the high profile, quarterly digression can be used to bring the profile back towards the middle range. Similarly, low levels of uptake push scheme expenditure towards the low profile, tariffs could be increased for poorly performing technologies. The Department would continue to submit RHI AME forecasts within this range as part of the in year monitoring rounds.

The Department seeks DFP agreement to:

- the proposed changes to the biomass RHI tariff to be implemented in Nov 2015; and
- develop a future system of tariff digression for the RHI scheme(s) based on a forecast expenditure range as part of a RHI Review over the next 12 months.

6. PHASE 2 PROPOSALS FOR NON DOMESTIC RHI

6.1 In July 2013 the Department consulted on proposals for Phase 2 of the NI RHI. A copy of the Consultation Document is attached (**Annex D**). This included extending the RHI to the domestic sector, increasing the list of eligible technologies in the non domestic scheme, introducing biomass sustainability and emissions standards and introducing an annual system of cost control (as set out in Section 4). The Phase 2 proposals were informed by a detailed assessment completed by Consultants CEPA and Ricardo-AEA (**Annex C**). The full Domestic RHI Scheme was introduced in December 2014 but the other phase 2 proposals have yet to be taken forward. The Department plans to introduce some of the phase 2 proposals for the Non Domestic RHI scheme during the next 12 months subject to EU State Aid approval and funding availability. These are summarised below.

Proposal - Biomass and Bioliquid Combined Heat & Power (CHP)

6.2 Biomass and bioliquid CHP is currently incentivised under the Northern Ireland Renewables Obligation (NIRO) with an additional 0.5 Renewable Obligation Certificate (ROC) uplift. From October 2015 the 0.5 ROC uplift will be withdrawn and CHP projects accredited after this date would be eligible for the relevant electricity only ROC level together with the appropriate RHI tariff. This position is largely consistent with GB

6.3 In developing an appropriate CHP tariff under the non domestic RHI, an investment lifetime of 10 years and a plant lifetime of 20 years has been assumed. A tariff of 3.5p/kWh for new biomass and bioliquids CHP systems is proposed. A second tariff will also be introduced for existing fossil fuel CHP systems that wish to convert to renewable CHP. For existing CHP fossil fuel sites converting to renewable fuelled CHP the proposed tariff is 1.7p/kWh. The Department expects heat from CHP sites to provide a significant contribution towards the development of the renewable heat market and the achievement of the renewable heat target. The new CHP tariff(s) will be introduced in November 2015 to coincide with the change in the NIRO ROC regime.

Proposal – Large Biomass (over 1MW)

6.4 Biomass installations over 1MW were not included in the ND RHI in 2012. Evidence available at the time suggested that these types of installations were already cost-effective over the 20 year time period. Whilst it was accepted that a biomass installation over 1MW size was considerably more expensive than an equivalent oil system in terms of capital outlay, the differential in assumed fuel price outweighed the capital costs, given the fuel intensity of these systems, therefore rendering a tariff unnecessary. However, this position was reassessed as part of phase 2 and the revised assumptions have led to a proposed tariff of 0.6p/kWh for 20 years.

Proposal – Air Source Heat Pumps (ASHP)

- 6.5 Air source heat pumps were initially excluded from the Non Domestic RHI due to a lack of detailed evidence on the costs and performance of the technology and issues surrounding the accurate measurement of heat output. Air to water heat pumps have the potential to displace existing fossil fuel heating systems by providing buildings with space heating and hot water heating by utilizing heat from the outside air transferring this directly to a liquid. These systems are often used alongside under-floor heating but can also integrate with conventional radiator systems. The Department has assessed the costs of these systems and developed a proposed tariff of 2.5 pence per kWh that would be available for systems less than 100kW_{th} in size. A larger banding for this technology may be considered in due course.

Proposal – Deep Geothermal

- 6.6 In developing support or incentive measures for deep geothermal, DETI considered two potential options. The first of which was the introduction of a specific tariff for deep geothermal energy. To design the tariff the counterfactual position was re-assessed in line with evidence from stakeholders and experience of recent geothermal developments, this involved new assumptions relating to the likelihood of a geothermal energy developer selling heat to a third party rather than taking the heat to individual consumers. The proposed tariff for deep geothermal heating is 3.7 pence per kWh for a maximum of 20 years.
- 6.7 A second option considered for deep geothermal was to provide support on a competitive basis, whereby potential developers would submit proposals to DETI on a case-by-case basis and DETI would award support, either on the basis of capital grant or a set incentive level, depending on the financial need of the project. However, there are currently no plans to proceed with this option.

Proposal – Bioliquids (Heat Only)

- 6.8 As well as considering supporting bioliquids boilers in the domestic sector and bioliquids CHP in the non-domestic sector, DETI also proposes to introduce support for bioliquids boilers (heat only) under the non-domestic RHI. Bioliquids have been incentivised under the NIRO for renewable electricity generation for sometime and DETI is aware that such bioliquids could also have the potential to contribute to renewable heating targets. Two tariffs are proposed depending on the scale of the boiler in place, under 100kW_{th} the proposed tariff is 2.6 pence kWh and above 100kW_{th} a tariff of 2.1 pence per kWh is proposed. No tariff above 1MW_{th} is proposed as it is assumed that projects of this scale would be CHP systems and could therefore avail of those relevant tariffs. DETI will, however, consider extending the cap on

support for heat only bioliquids to beyond 1MW_{th} if there is sufficient evidence those projects could be developed in Northern Ireland.

Proposal – District Heating

- 6.9 A 2010 study in the development of the Northern Ireland renewable heat market demonstrated that 31 per cent of Northern Ireland’s heat demand lies in areas that could be suitable for district or community heating schemes, where one heat source supplies heating for a number of different buildings. These projects often have additional capital costs because of the need for pipe work to transport heat from the heat source to the buildings connected to the network.
- 6.10 As part of this second phase of the RHI, DETI has considered whether renewable district heating required a specific ‘uplift’ tariff under the RHI to account for the additional costs incurred. A tariff range for the uplift of 4p/kWh to 14p/kWh was developed, highlighting the differences in the scenarios and the variables within each potential district heating. At this stage, DETI are considering introducing an uplift tariff of 7p/kWh for community heating or district heating schemes. This would apply to the first 1314 peak load hours, after which the tariff would reduce to the standard biomass tariff.

Proposal – Increased Tariff for Biomethane Injection

- 6.11 Currently biomethane injection is incentivised at a tariff of 3.2 pence and there has been no uptake of projects since the RHI was introduced in November 2012. This suggests that the current rate is not sufficient to stimulate growth in this area. Although not included in the phase 2 consultation evidence has come forward from the sector to suggest that an increased incentive such as that in the GB RHI is required to “**kick start**” projects here and anecdotal evidence would suggest that there are a number of projects that are ready to go if the right incentive was in place. The proposal therefore is to increase the tariff for biomethane to the GB tiered⁵ tariff limits to test the readiness of the market.
- Tier 1 first 40,000 MWh 6.52 pence
 - Tier 2 next 40,000 MWh 3.83 pence
 - Tier 3 remaining MWh 2.95 pence

⁵ GB figures quoted were introduced on 1 October 2015. More information on GB RHI tariffs can be found at <https://www.ofgem.gov.uk/environmental-programmes/non-domestic-renewable-heat-incentive-rhi/tariffs-apply-non-domestic-rhi-great-britain>.

6.12 The Department plans to consult on this proposal as it was not part of the original Phase 2 Consultation in 2013.

DRAFT

7. NON DOMESTIC RHI SCHEME ADMINISTRATION

- 7.1 Under Section 114 of the Energy Act 2011⁶, the Department can directly administer the RHI or outsource this function to either NIAUR⁷ or Ofgem⁸. The Domestic RHI scheme is currently administered inhouse within the Department's Energy Division.
- 7.2 The Non Domestic RHI on the other hand is administered by Ofgem which has effectively administered the scheme since 2012. Ofgem has considerable experience in managing large scale renewable energy grant schemes and in addition to the NI Non Domestic RHI currently administers: the Renewable Obligation in GB and the NIRO; the Feed-in-tariff in GB; and the GB commercial and domestic RHI schemes. An Administration Agreement is in place between the Department and Ofgem.

Value for Money

- 7.3 The Domestic RHI scheme calculates annual tariff payments based on a property's heating requirements set out in its Energy Performance Certificate (EPC), only a percentage of properties need to be checked for audit purposes. The Non Domestic RHI Scheme on the other hand requires that all installations to be metered and payments are calculated accordingly. Neither the Department nor NIAUR have the resource or expertise available to effectively carry out these functions. To outsource the scheme's administration to another private or public sector organisation (other than Ofgem or NIAUR) would require primary legislation which could take up to 12 months to put in place.
- 7.4 In addition, Ofgem operates an online application and metering facility where owners of accredited plants record their quarterly metered readings. Developing a similar web based IT system specifically for the NI Non Domestic RHI scheme wouldn't be a cost effective use of public funding.
- 7.5 The Department is charged 3% of Ofgem's total administration costs for the GB and NI non domestic schemes. This is despite the fact that NI application numbers are currently running at 6% of the GB total. Any GB specific costs (legal, IT, etc) are removed before the NI costs are calculated. Similarly, any NI specific costs are added at the end and not charged to DECC for the GB scheme.
- 7.6 In 2015/16, Ofgem is expected to process over £23m of RHI payments for the NI scheme at a cost of £239k (or 1.1%). Administration costs for government grant schemes are typically between 8-10% of total grant expenditure. The Department therefore benefits from the economies of scale of being treated as a small addition to the much larger GB Scheme.
- 7.7 Similarly, the Department also benefits from administrative changes already made by Ofgem for the GB Scheme. Whenever DECC make changes to the GB Scheme such as

⁶ <http://www.legislation.gov.uk/ukpga/2011/16/contents/enacted>

⁷ Northern Ireland Authority for Utility Regulation

⁸ Office of Gas and Electricity Markets

tariff changes, new technologies, etc, Ofgem have to upgrade their IT systems and processes. They charge DECC development costs for this work. Once these changes are made for the GB scheme, similar changes can be introduced for the NI scheme for much less cost. For example, to implement the administrative changes (IT, staff, etc) needed for the Phase 2 proposals set out in Section 5, Ofgem's development costs will be between £80k - £100k. DECC paid over £300k for similar changes for the GB scheme.

Future Administration Costs

7.8 It is proposed that Ofgem are given continued responsibility for the administration of the NI Non Domestic RHI. Ofgem were identified for this role because of their experience in effectively and efficiently developing and administering other government environmental programmes, including the GB RHI and the Northern Ireland Renewables Obligation, (NIRO). Ofgem would continue to administer the NI Non Domestic RHI alongside the GB RHI, and thereby provide significant savings to DETI. Ofgem's actual administration costs for the NI RHI scheme will continue to be based on 3% of the actual costs for administering both GB and NI schemes. An estimate of Ofgem's annual administration costs for the next 5 years is set out in Table 7.8.

| Year | Forecast of Total GB/NI Scheme Costs (£) | NI Annual Administration Costs @ 3% of GB/NI Total (£) | Additional NI Specific Costs (£) | | Total NI Costs | |
|--------------|--|--|----------------------------------|---------------------------|------------------|----------------|
| | | | Admin ⁹ | Development ¹⁰ | (£) | (% of RHI Exp) |
| 2015/16 | 7,300,000 | 218,700 | 5,350 | 15,000 | 239,050 | 1.1% |
| 2016/17 | 9,735,921 | 292,107 | 30,000 | 100,000 | 422,107 | 1.5% |
| 2017/18 | 13,897,931 | 416,980 | 30,000 | - | 446,980 | 1.4% |
| 2018/19 | 14,564,850 | 436,989 | 30,000 | 100,000 | 566,989 | 1.7% |
| 2019/20 | 14,840,815 | 445,269 | 30,000 | - | 475,269 | 1.3% |
| 2020/21 | 14,983,831 | 449,560 | 30,000 | - | 479,560 | 1.3% |
| Total | 75,323,348 | 2,259,605 | 155,350 | 215,000 | 2,629,955 | |

7.9 Total administration costs for the 6 year 2015-2021 period are estimated to be **£2.63m** and to remain at between 1 and 2% of forecast annual RHI expenditure. This includes £215k of development costs to allow for future changes to the scheme including the Phase 2 proposals and tariff digression. £155k / year of NI specific administration costs

⁹ The NI RHI scheme has specific administration costs associated with legal advice, additional audit checks (where requested) and NI specific changes.

¹⁰ Development costs relate to IT and system changes needed to implement any NI changes such as tariff changes, tariff digression and new technologies, etc

are also included to cover legal advice, additional audit checks and specific changes for the NI scheme.

The Department is seeking DFP approval to continue using Ofgem to administer the Non Domestic RHI Scheme for the period 1 April 2015 to 31 March 2021 on the basis that the NI administration costs will continue to be based on 3% of total administration costs for both the GB and NI Non Domestic RHI Schemes .

DRAFT

8. WAY FORWARD

Non Domestic RHI Scheme Approval

8.1 The Department seeks DFP approval to regularise the position in relation to Non Domestic RHI scheme expenditure (both RHI payments and administration costs) both retrospectively from 1 April 2015 and prospectively to 30 September 2016 on the basis that:

- the scheme's continuous and continuing provision of value for money has been demonstrated (Section 3); and
- the Department will introduce legislation to reduce incentives for new biomass installations from November 2015.

8.2 To inform this Business Case, the Department completed revised forecasts of Non Domestic Scheme expenditure for previous commitments (pre April 2015) and new commitments from April 2015 to September 2016. These are included at **Annex I** and summarised in Table 8.2 below. Total estimated scheme expenditure (20 years) for new commitments from 1 April 2015 to 30 September 2016 is **£307m**.

| Table 8.2 – Non Domestic RHI Expenditure (for commitments up to 30 Sep 2016) £,000 | | | | | | | | |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|
| Non Domestic Forecast | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 6 Year Total | 20 Year Total |
| Previous Commitments (Nov12 – March15) | 13,216,394 | 12,802,536 | 12,802,536 | 12,802,536 | 12,802,536 | 12,802,536 | 77,229,074 | 256,464,578 |
| New Commitments (Apr15-Sept16) | 7,430,139 | 14,972,978 | 15,377,468 | 15,377,468 | 15,377,468 | 15,377,468 | 83,912,989 | 306,881,080 |
| Revised AME Forecast (Aug15) | 20,646,533 | 27,775,514 | 28,180,004 | 28,180,004 | 28,180,004 | 28,180,004 | 161,142,063 | 563,345,658 |

8.3 Subject to DFP approval to continue the scheme, the Department will:

- Develop and consult on proposals for an automatic system of tariff digression for both RHI schemes based on an expenditure forecast range (Low, Med, High);
- Implement the Phase 2 Non Domestic RHI proposals in Section 6 including the digression proposals for both RHI schemes;
- Complete a detailed review of the RHI to assess the levels of renewable heat currently in place and how much additional heat can realistically be incentivised within the current forecast. The NI Executive will then have to either agree a

reduced 2020 RHI target or a case will have made to HMT / DECC for increased funding for the NI RHI; and

(iv) Subject to this Review / Decision, the Department will approach DFP for further scheme approval beyond 30 September 2016.

8.4 Non Domestic RHI payments will need to continue to be processed and audit requirements implemented even if the scheme closes to new applications from 30 September 2015. DFP approval is therefore sought to continue to use Ofgem to administer the Non Domestic RHI Scheme for the period 1 April 2015 to 31 March 2021. This is on the basis that the NI administration costs will continue to be based on 3% of total administration costs for both the GB and NI non domestic RHI Schemes (as set out in Section 7).

Domestic RHI Expenditure

8.5 DFP approved the Domestic RHI Scheme in September 2014 based on a total RHI expenditure profile of £103m for the 2014/15 – 2019/20 period. This was based on the Department's forecast of expenditure in early 2014 when uptake of both the Non Domestic RHI and RHPP scheme was low. This forecast is included in Table 8.5 below.

| Forecast | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | Total |
|-----------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| Domestic Capital | 1,140,000 | 900,000 | 900,000 | 900,000 | 900,000 | 900,000 | 5,640,000 |
| Domestic Resource | 1,220,128 | 1,192,188 | 1,573,788 | 1,955,388 | 2,336,988 | 2,718,588 | 10,997,068 |
| Non Domestic Resource | 4,136,383 | 7,380,192 | 11,028,192 | 15,735,192 | 21,258,192 | 27,723,192 | 87,261,343 |
| Total | 6,496,511 | 9,472,380 | 13,501,980 | 18,590,580 | 24,495,180 | 31,341,780 | 103,898,411 |

8.6 In light of experience with administering the Domestic RHI Scheme since its launch in December 2014, the Department's forecast of scheme expenditure has increased. The Department is therefore seeking DFP approval to increase Domestic RHI Scheme Expenditure for the 5 year (2015/21) approval period to the levels in Table 8.6 below. These are based on the Department's June 2015 AME forecast. The Domestic RHI Scheme's continuing provision of value for money has been demonstrated in Section 3.

| Forecast | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | Total |
|---------------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|
| Domestic Capital | 1,377,000 | 2,881,500 | 2,881,500 | 4,207,500 | 4,207,500 | 15,555,000 |
| Domestic Resource | 1,737,300 | 2,902,456 | 4,989,244 | 7,450,499 | 9,936,367 | 27,015,866 |
| Total Domestic RHI | 3,114,300 | 5,783,956 | 7,870,744 | 11,657,999 | 14,143,867 | 42,570,866 |

ANNEXES

- A. *Original CEPA Report (2011)* [DT1/15/0147730]
- B. *Non-domestic Business Case (2012)* [DT1/15/0147732]
- C. *Revised CEPA Report (2013)* [DT1/15/0147736]
- D. *Phase 2 Consultation Document* [DT1/15/0147773]
- E. *DSO Advice on Scheme Suspension* [DT1/15/0147740]
- F. *VFM Analysis: Non Domestic RHI Scheme* [DT1/15/0147720]
- G. *VFM Analysis: Domestic RHI Scheme* [DT1/15/0147725]
- H. *DARD Paper on Poultry Shed Lighting Requirements* [DT1/15/0147750]
- I. *Non Domestic Expenditure Forecasts (Aug 2015)* [DT1/15/0139328]