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Cc: [Wightman, Stuart](#); ["Nadia Carpenter"](#)
Subject: NI RHI Phase 2 - Policy Review templates
Date: 26 February 2015 09:49:00
Attachments: [Non domestic phase 2 policy review template - Extension of 6.3 pence biomass tariff rate. \(additional to consultation\).DOCX](#)
[Non domestic phase 2 policy development template - Challenge Fund Alternative.DOCX](#)
[Non domestic phase 2 policy development template - District Heating.DOCX](#)
[Non domestic phase 2 policy development template - Large Solar.DOCX](#)
[Non domestic phase 2 policy development template - Bioliquids \(Heat only\).DOCX](#)
[Non domestic phase 2 policy development template - Deep Geothermal.DOCX](#)
[Non domestic phase 2 policy development template - Large Biogas over 200kWh and Landfill gas.DOCX](#)
[Non domestic phase 2 policy development template - Air Source Heat Pumps.DOCX](#)
[Non domestic phase 2 policy development template - biomass direct air heating.DOCX](#)
[Non- Domestic Phase 2 policy development template- Biomass and Bioliquid Combined Heat and Power.DOCX](#)
[Non domestic phase 2 policy development template - Large Biomass over 1MW.DOCX](#)

Atika

As discussed in our telecom yesterday afternoon I am forwarding to you a number of template documents which set out the DETI proposals for amendment to technologies and tariffs under our phase 2 review of the NI RHI arising from the 2013 consultation. At this stage we would welcome initial comments from Ofgem which we can factor into our ongoing consideration and ultimate agreement on the way forward with our Minister.

Over the coming days I will also draft a project plan/timeline document for the proposed changes. There are also a number of other non technology based proposals around setting standards, improving performance and cost control for which templates are under development and we will share these with you in due course.

Many thanks

Regards

Seamus

Seamus Hughes

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PROPOSAL**EXTENSION OF BIOMASS 6.3 PENCE TARIFF RATE UP TO 200kW****RATIONALE**

Although not part of the consultation it is now proposed to extend the current 20 - 99kW 6.3 pence per kW tariff for biomass installations up to 200kW. This is in response to representation from Ofgem and from stakeholders in the intervening period since the consultation including feedback from the CAFRE event at Greenmount on 28 October 2014. The extension of the tariff would broadly bring the NIRHI into line with the GB scheme for small and medium biomass, although the GB scheme does have a tiered system in operation which we are not proposing to introduce in Northern Ireland.

A qualifying system can be made up of a single boiler or multiple boilers. It is the overall capacity of the plant that determines the tariff. The original policy intent was for larger plants (including plants made up of multiple boilers) to receive lower incentives. However, it is clear that Ofgem has been receiving multiple 99kW RHI applications for single sites rather than one application for a single larger capacity plant. As at 26 January 178, (over half of the total), of the approved applications were of 99kW capacity. The multiple applications each qualify for the higher 6.3p / KWh tariff. The proposal to extend the 6.3p/KWh tariff up to and including 199 KW should help to incentivise the installation of larger capacity plants in line with the original policy intent and reduce multiple RHI applications for the same site.

Because the industry was already receiving the 6.3 p/KW tariff via multiple 99KW applications, increasing this tariff banding to cover plants up to and including 199KW should not increase RHI payments. There are currently no accredited RHI installations with a capacity of over 99KW and less than 200KW so there shouldn't be any need for retrospective tariff payments.

The majority of RHI applications are for installations below 200kW capacity. **Not sure this is relevant!!**

The proposal will also encourage the development of small (district heating) domestic / non-domestic heat networks.

A proposal to extend support for large biomass over 1MW was included as part of the formal consultation.

CONSULTATION RESPONSES

- Feedback to RHI presentations at events such the CAFRE on-farm renewable energy event is in support of extending the 6.3 pence tariff rate.
- Ofgem has highlighted the issue of multiple 99KW applications for single sites in the course of its application processing.
- Informal communication with the industry has demonstrated their support for the proposal.

DISCUSSION

- ✓ Discussed at a meeting on 28 January 2015.
- ✓ Even though this wasn't covered in the consultation the proposal can only be viewed as beneficial to both customers and DETI.
- ✓ This proposal will encourage small heat networks,(district heating).
- ✓ Agreed that proposal should proceed as party of RHI Phase2.
- ✓

Ofgem COMMENT

RECOMMENDATION

LEGISLATIVE CHANGES NEEDED

Final policy agreed

Signed:-

Date:-

PROPOSAL CHALLENGE FUND ALTERNATIVE
RATIONALE <p>There are a number of technologies where DETI has proposed introducing a RHI tariff whilst also suggesting the possibility of an alternative method of support via a competitively awarded challenge fund. Technologies where a challenge fund could be considered, instead of a RHI tariff, would be large biomass (over 1MW_{th}), deep geothermal or district heating schemes. The reason why a challenge fund scheme could be considered in place of a RHI tariff is because the numbers of potential schemes are small and the capital costs may be barrier to deployment. The purpose of the challenge fund would be to deliver a small number of exemplar projects and to reduce the barrier that projects face in terms of up front capital</p>
CONSULTATION RESPONSES <ul style="list-style-type: none"> • Some comments that geothermal and district heating could avail of this option.
DISCUSSION <ul style="list-style-type: none"> ✓ Current budgetary pressures would rule out the option of challenge fund support for renewable heat incentives. ✓ OFMDFM/SIB proposed HEAT scheme includes provision for low cost interest loans for renewable heating and district heating schemes. ✓ It is agreed that there is currently no merit in pursuing a challenge fund.
Ofgem COMMENT
RECOMMENDATION
LEGISLATIVE CHANGES NEEDED

Final policy agreed

Signed:

Date:

PROPOSAL INTRODUCE A TARIFF OF 7 PENCE PER Kw FOR NEW DISTRICT HEATING SYSTEMS OF 200kW AND ABOVE

RATIONALE

Article 14 of the Energy Efficiency Directive promotes district heating as a more efficient way of heating multiple properties. It is also suitable for “pay as you go” applications and could be used for meeting the heating needs of low income households.

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. However, District Heating 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.

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. The final proposal was to introduce an uplift tariff of 7p/kWh for new community heating or district heating schemes.

CONSULTATION RESPONSES

- A lot of comments / interest.
- Agreement that uplift is required and happiness at figure set.
- Agreement that it should be for larger systems and the definitions must be appropriate, (important we consider appropriate parameters to prevent uplift being taken by very small schemes, (two homes beside each other), needs some thought.
- Comment that the uplifts should apply to all renewable technologies as well as conversions.

DISCUSSION

- ✓ The Heat Network (Metering and Billing)Regulations 2014 defines district heating as,
- ✓ **“District heat means the distribution of thermal energy in the form of steam, hot water or chilled liquids from a central source of production through a network to multiple buildings or sites for the use of space or process heating, cooling or hot water”**
- ✓ A network should have a minimum of two buildings and one final customers in addition to the heat supplier.
- ✓ Evidence has shown that large district heating proposals are not coming forward under the existing incentives.
- ✓ Smaller district heating systems, (under 200kW), will be incentivised under the proposed extension of the 6.3 pence tariff.
- ✓ GB has taken the challenge fund approach with district heating, however, our engagement with the industry suggests that the proposed 7 pence tariff would stimulate more growth in this area. Evidence from previous District Heating trials/pilots

would indicate that ongoing support (through tariff payments) rather than upfront capital is needed to make such schemes successful.

Ofgem COMMENT

RECOMMENDATION

LEGISLATIVE CHANGES NEEDED

Final policy agreed

Signed:

Date:

PROPOSAL NOT TO INTRODUCE A TARIFF FOR LARGE SOLAR
RATIONALE DETI considered the need for incentive support for solar thermal installations over 200kW in size. Experience in the existing UK market would suggest that there is currently no demand for solar thermal installations over 200kW _{th} . In the GB RHI there has been a small number of solar thermal installations, all of small capacity. In addition, to date no solar thermal installations have been accredited under the Northern Ireland scheme. DETI has therefore concluded that a tariff for this category is not appropriate until examples in the 50-200kW _{th} category arise.
CONSULTATION RESPONSES <ul style="list-style-type: none"> • None received,(check)
DISCUSSION <p>✓ Agreed that there is no current need to introduce a tariff for large solar.</p>
Ofgem COMMENT
RECOMMENDATION
LEGISLATIVE CHANGES NEEDED

Final policy agreed

Signed:

Date:

PROPOSAL TO INTRODUCE A TARIFF FOR BIOLIQUIDS (HEAT ONLY)
RATIONALE 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.
CONSULTATION RESPONSES <ul style="list-style-type: none"> • General agreement; however there should be no cap at 1MW.
DISCUSSION <ul style="list-style-type: none"> ✓ Since a positive, (albeit limited), response was received to the proposal through the consultation it is agreed to introduce the proposed tariffs. ✓ No tariff is proposed for systems over 1MW. ✓ It is hoped that these new tariffs will help to incentivise bioliquid heating systems.
Ofgem COMMENT
RECOMMENDATION
LEGISLATIVE CHANGES NEEDED

Final policy agreed

Signed:

Date:

<p>PROPOSAL TO INTRODUCE A TARIFF FOR DEEP GEOTHERMAL</p>
<p>RATIONALE</p> <p>Under Phase 1 of the RHI deep geothermal installations were eligible through the tariffs set for large ground source heat pumps. At the time of the July 2011 consultation, DETI sought evidence on the potential deployment of deep geothermal energy in Northern Ireland and the existing barriers both financial and non-financial. Early analysis work demonstrated that a tariff range between 1.6p-4.6p could be appropriate depending on the assumptions on the heat being displaced. It was agreed however that further analysis was required and specific support for deep geothermal would be included as part of Phase 2.</p> <p>In developing support or incentive for deep geothermal, DETI considered two potential options. The first 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 or ESCO, rather than taking the heat to individual consumers. This proposed tariff is 3.7 pence per kWh for a maximum of 20 years. The second option is 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.</p> <p>DETI's preferred approach is the proposed RHI tariff however views were sought on the second option of a challenge fund. For systems to be classed as deep geothermal the energy must be located and extracted at least 500 metres beneath the surface of solid earth.</p>
<p>CONSULTATION RESPONSES</p> <ul style="list-style-type: none"> • Generally supportive, however geothermal companies continue to argue for a higher tariff, 5 pence rather than the proposed 3.7 pence. • Some discussion on case by case support, however this wouldn't be welcomed by the Geothermal industry.
<p>DISCUSSION</p> <ul style="list-style-type: none"> • There is no evidence to suggest that the current Ground Source Heat Pump tariff is preventing schemes coming forward. • However, there have been recent calls from the industry and through debate at the Assembly to promote deep geothermal technology and provide parity with the GB scheme.
<p>Ofgem COMMENT</p>
<p>RECOMMENDATION To introduce the proposed tariff of 3.7 pence.</p>
<p>LEGISLATIVE CHANGES NEEDED</p>

Final policy agreed

Signed:

Date:

<p>PROPOSAL NOT TO INTRODUCE A TARIFF FOR LARGE BIOGAS OVER 200kWh AND LANDFILL GAS</p>
<p>RATIONALE DETI has assessed the need for and potential of support for renewable heat generation from large biogas over 200kW_{th} and from heat recovery from landfill gas. Biogas combustion is currently supported under the RHI under 200kW_{th} but only in circumstances where the plant is not accredited under the NIRO and in receipt of ROC support. Given the very limited potential to contribute to targets, the risk that artificial heat loads could be created to claim RHI and the diminishing nature of landfill meaning that it would need to be replaced within a short period of time, DETI does not propose to incentivise heat recovery from landfill under the RHI.</p>
<p>CONSULTATION RESPONSES</p> <ul style="list-style-type: none"> • No responses received.
<p>DISCUSSION</p> <ul style="list-style-type: none"> • Through discussion with stakeholders there is no obvious demand to introduce a large biogas tariff. • However, discussions have indicated the need to review the existing tariff for biomethane injection. • This is now included as a separate proposal.
<p>Ofgem COMMENT N/A</p>
<p>RECOMMENDATION Not to introduce a tariff for large biogas.</p>
<p>LEGISLATIVE CHANGES NEEDED N/A</p>

Final policy agreed

Signed:

Date:

PROPOSAL**PROPOSED TARIFFS FOR AIR SOURCE HEAT PUMPS (AIR TO AIR & AIR TO WATER)****RATIONALE**

Air source heat pumps were excluded from phase 1 of the RHI due to a lack of detailed evidence on the costs and performance of the technology and issues around the accurate measurement of the heat output. DETI included proposals in its consultation to introduce support for both air to air, (AAHP), and air to water, AWHP). For AAHP, where heat from air outside is transferred through a heat pump via a liquid and used to produce warm air that is circulated within a building to provide space heating a tariff of 5.2 pence per kWh is proposed for systems less than 100kWh in size. DETI wishes to limit support for these technologies at this stage to smaller systems so that the market can be tested and the technology can be rolled out in a staged manner.

AWHP's have the potential to displace existing fossil fuel heating systems by providing buildings with space heating and hot water heating by utilising 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. DETI has assessed the cost of these systems and developed a proposed tariff of 2.5 pence per kWh that would be available for systems less than 100kWh in size. Similarly to AAHP a larger banding for this technology may be considered in due course dependent on evidence gathered and through actual deployment of technologies under the RHI.

CONSULTATION RESPONSES

- Only a few comments, all in general agreement.
- Air to water heat pumps widely accepted, air to air less so.
- Feeling that SPF of 2.5 is too low and should be raised to 2.9.

DISCUSSION**Air to Air**

- ✓ All technologies supported under the RHI must have installed a class 2 meter and air to air heat pumps are unable to meet this criterion.
- ✓ Because of this metering difficulty it is not proposed to include this technology at this time.

Air to Water

- ✓ Looking at the success of the domestic RHPP/RHI scheme where 147 air to water heat pumps or 12% of installations demonstrates a demand for this technology.
- ✓ Therefore it is agreed to introduce the proposed tariff for the non-domestic RHI.

A SPF of 2.5 will be applied, as used in the domestic scheme.

Ofgem COMMENT

RECOMMENDATION

LEGISLATIVE CHANGES NEEDED

Final policy agreed

Signed:

Date:

<p>PROPOSAL TO INTRODUCE A TARIFF FOR BIOMASS DIRECT AIR HEATING</p>
<p>RATIONALE</p> <p>Currently the RHI only supports biomass heating whereby the boiler produces heat that is transferred via a delivery of liquid or steam to provide central heating, hot water heating or process heating. DETI is proposing to introduce support for technologies where there is no heat delivery liquid and air is warmed through the combustion of biomass – examples of this type of heat use could be found in agriculture for grain drying or other industrial or commercial drying and curing processes. Two separate tariffs are proposed for this technology, the first will cover smaller installations of less than 100kWh in size and is proposed to be 5.1 pence per kWh. The second tariff will cover larger technologies over 100kWh but less than 1000kWh and this is proposed to be 1.4 pence per kWh. No tariff is proposed over 1000kWh in size at this stage.</p>
<p>CONSULTATION RESPONSES</p> <ul style="list-style-type: none"> • Only a few comments, general welcome but agreement that measuring heat is problematic.
<p>DISCUSSION</p> <ul style="list-style-type: none"> • Currently there is no evidence to suggest an imminent need for this tariff. • Concerns remain around how to meter. • There is no tariff for this technology in the GB RHI. • The proposal will be deferred to a later phase.
<p>Ofgem COMMENT N/A</p>
<p>RECOMMENDATION Not to introduce a tariff at this stage.</p>
<p>LEGISLATIVE CHANGES NEEDED N/A</p>

Final policy agreed

Signed:

Date:

PROPOSAL**BIOMASS AND BIOLIQUID – COMBINED HEAT AND POWER****RATIONALE**

Biomass and bioliquid CHP is currently incentivised under the NIRO, with good quality CHP that is accredited under the CHPQA in receipt of an additional 0.5 ROC uplift. From October 2015 the 0.5 ROC uplift will be withdrawn – good quality 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 the GB position, however given the fact that DETI has not previously indicated a potential CHP RHI tariff an additional grace period for installations has been allowed rather than adopting the GB timescales of April 2015.

In developing an appropriate CHP tariff under the RHI DETI has assumed an investment lifetime of 10 years and a plant lifetime of 20 years. A discount rate of 12% has been used and the revenue from ROC's electricity is included and factored into the analysis. A counterfactual position of natural gas has been used based on analysis that new CHP sites in 2020 are likely to have access to natural gas as a fuel. Therefore DETI is proposing a tariff rate of 3.5p/kWh for new biomass and bioliquid systems.

In addition to the tariff for new CHP systems, DETI proposes to introduce a second tariff for existing fossil fuel CHP systems that wish to convert to renewable CHP. The tariff for conversion sites has been developed in the same way as the new build CHP tariff, however with the different assumptions on capex. For converting CHP sites the proposed tariff is 1.7p/kWh.

To receive the RHI the accredited station must be certified under CHPQA. DETI expects heat from renewable CHP sites to provide a significant contribution towards the development of the renewable heat market and the achievement of the renewable heat target. It is estimated that over 500GWh per annum will be in place through CHP by 2020, over a third of the renewable heat target.

CONSULTATION RESPONSES

- General agreement with the proposals
- Phoenix expressed concern that two separate tariffs will increase the risk of gas CHP converting to renewables, but the opposite is true as one tariff would be 3.5 pence and therefore conversion would be more attractive.
- Nvisa made lots of comments that will need to be considered in drafting legislation, will also need to work with DECC on issues such as co-firing.

DISCUSSION

- Public consultation responses are supportive of the proposed tariff.
- Subsequent engagement with the industry would indicate significant interest in this tariff.
- Large CHP plants have a significant role to play in meeting the RHI targets.

Ofgem COMMENT

RECOMMENDATION To proceed with the introduction of this new technology and tariff.

LEGISLATIVE CHANGES NEEDED

Final policy agreed

Signed:

Date:

PROPOSAL**LARGE BIOMASS (OVER 1MW) NEW TARIFF OF 0.6 PENCE PER kW****RATIONALE**

Biomass installations over 1MW were not eligible for support under the first phase of the Northern Ireland RHI. The reason for this was that evidence available at the time demonstrated that these types of installations, for the most part, 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 the corresponding 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. In fact, when calculating a tariff for this band a negative tariff was generated. However, this was reassessed and the revised assumptions, (detailed in the consultation paper), has led to a tariff being set for large biomass installations above 1MW size against a counterfactual position of wood pellets replacing oil. The proposed tariff is 0.6p kW for 20 years. This proposed tariff is linked to RPI, similar to all other tariffs.

CONSULTATION RESPONSES

- Respondents welcomed the support but many felt it was too low, (GB 2 pence), though no evidence was provided on increase.
- Some felt support should be capped at 5MW and Invista thought a coal counterfactual should be used.
- General agreement that large biomass is vital for the target and wider market and therefore tariff needs to be appropriate.
- One respondent asked that a 7 year tariff be developed for large biomass.

DISCUSSION

- ✓ Content to proceed with proposal of 0.6 pence tariff.
- ✓ This will encourage large biomass installations which are vital for meeting our targets.
- ✓ We are aware of a number of large installations which could potentially make use of the scheme.
- ✓ In considering the cost implications of a typical 1MW industrial plant running for 80% of the time the cost would be:-

$24 \times 7 \times 356 \times 0.8 \times 1000 \times 0.006 = \text{£}294,336$ per annum with a heat output of 49.056GWh

- ✓ Although this cost seems high to achieve the same heat output using say 99kW boilers on the 6.3 pence tariff would cost £3.9m per annum, i.e around one tenth of the cost.
- ✓ The above illustration demonstrates that larger plants represent better value for money.
- ✓ At this juncture there is no evidence to suggest that there won't be enough money in the RHI fund to provide this support.

Ofgem COMMENT
RECOMMENDATION
LEGISLATIVE CHANGES NEEDED

Final policy agreed

Signed:

Date: