

Minister for your consideration and if content signature please

**DFE-29542**

- i) Consider the overview of the CEPA economic appraisal and the options developed;
- ii) Indicate your preferred option for incentivisation ie either a Challenge Fund or RHI;
- iii) Consider the issues identified approach outlined in paras 30 and 33 ;
- iv) Agree that a consultation paper is now developed for your consideration; and
- v) Approve and sign the impact assessment at Annex A, to support the amendment to the 2011 Energy Bill.

**From: Fiona Hepper  
Energy Division**

**Date: 8 June 2011**

**To: 1. Andrew Crawford  
2. Arlene Foster MLA**

*AR 14/6*  
*A 14/6*

**DETI SUB 1053/2011**

**ECONOMIC APPRAISAL ON RENEWABLE HEAT INCENTIVE FOR NORTHERN IRELAND**

**Issue:** To inform you of the conclusions of the economic appraisal on a Renewable Heat Incentive (RHI) for Northern Ireland.

**Timing:** Immediate: your view is required in order that the consultation document can be finalised for issue.

**PfG implications:** Not applicable

**Need for referral to the Executive:** Any future renewable heat strategy will require Executive approval in due course.

**Presentational Issues:** Not applicable.

**Freedom of Information:** This submission is exempt under Section 35 of the Freedom of Information Act.

**Financial Implications:** HMT has advised that £25m of AME is available over the spending period should Northern Ireland choose to introduce a RHI.

**Legislation Implications:** Energy Division is currently working with colleagues in the Department of Energy and Climate Change (DECC) in London to extend renewable heating powers to Northern Ireland.

**PSA/PfG Implications:** None at present, but it is likely that new PSA targets in relation to renewable heat will have to be developed.

**Statutory Equality Obligations:** Not applicable

**Recommendation:** That you consider the findings and options of the economic appraisal detailed below and agree on the most appropriate option for Northern Ireland.

As this is a complicated issue, a meeting to discuss has been set up for noon, Monday 13<sup>th</sup> June.

## Background

You will be aware that a study into the potential development of the renewable heat market in Northern Ireland was completed in June 2010. The study concluded that achieving a 10% renewable heat share by 2020 was possible, but required significant government intervention.

3. The study also advised that long term support, both in terms of policy support and financial incentives, was needed to grow the renewable heat market. In September 2010, you announced that DETI would seek to develop a Renewable Heat Incentive (RHI) for Northern Ireland to assist in achieving the target of 10% renewable heat by 2020.
4. Her Majesty's Treasury (HMT) has provided £25m of AME funding for a Northern Ireland RHI. This funding is spread over the spending period between 2011-2015, with £2million in the first year, followed by £4million and £7million, with £12million available in the final year. Discussions with DECC regarding funding post 2015 have revealed the following : DECC see no difficulties re funding going forward as both DECC and HMT regard RHI as a priority, flag-ship policy; plus, HMT fully recognise that the scheme will be open until 2020 and that significant funding post 2015 will be required.

It is also the case that DETI received a pro-rata allocation of the UK RHI funding for the period up to 2015, and HMT are aware that our scheme will complement DECC's, will therefore also require funding in the next spending review and we need our portion of the 'UK pot'.

*What are the chances?  
What med up the pot?*

## Economic Appraisal of a Northern Ireland RHI

5. In February 2011, Cambridge Economic Policy Associates (CEPA), in conjunction with AEA Technologies, were commissioned to undertake an economical appraisal on the feasibility of a Northern Ireland RHI. A final draft of this economic appraisal was received on 31 May 2011. There are a number of issues that need to be addressed before the report can be finalised.

6. The economic appraisal has considered various options for incentivising the local renewable heat market, and has advised on appropriate tariff levels. It has also considered the costs/benefits and the impact of each of the options.

## Options considered

7. CEPA and AEA initially considered a long list of high-level options which were developed in conjunction with Energy Division. These options included specific targeted support for the heavy industrial sector, the roll-out of capital grants, adopting the GB RHI scheme, the introduction of a Renewable Heat Obligation, the introduction of a NI RHI scheme, as well as others. From this long list of options five options were taken forward for further consideration;
- Do Nothing
  - A renewable heat challenge fund
  - 50% capital grant
  - Joining in with the GB RHI scheme
  - A specifically tailored NI RHI scheme
8. Under each of these scenarios various funding options were considered, within the £25m funding envelop. These were:
- No funding post 2015;
  - Funding of £12m per annum (total) post 2015 until 2020; and
  - Funding of an additional £5m (i.e. £17m in 2016, £22m in 2017, £27m in 2018 etc) post 2015 until 2020 (this is the level of funding is based on the GB impact assessment for the RHI on expected funding levels for the GB scheme post 2015).
9. The funding options detailed in ii) and iii) would allow any NI RHI scheme to remain open to new installations until 2020, as is the case in the GB scheme. If no additional funding was to be available post 2015 it is questionable whether a RHI scheme would be feasible as it would need to close to new applications in March 2015. If a RHI is the preferred option, during the consultation period we will need further engagement with DFP, DECC and HMT to copper fasten the funding position – even though **HMT has already indicated that adequate budget cover would be available to ensure existing financial commitments would be honoured and that those within the NI scheme by 2015 would receive the full 20 year tariffs.**
10. It should be noted that preliminary modelling, within the economic appraisal, would suggest that none of the options above, in themselves, will deliver the target of 10% renewable heat by 2020. (This is also true of the GB RHI, which DECC expect will deliver 10% as against a 12% target). There will therefore be a need for supporting policies that will assist in increasing the uptake of incentive measures and ensuring that levels of renewable heat are maximised. These include;
- Maximising indigenous biomass supply; ? – Not cost effective?
  - Communications and education;
  - Increased energy efficiency;
  - Building standards for new builds;
  - Renewable heat within public estate;
  - Increasing skills; and
  - Planning issues.

11. There may be merit in establishing a cross-departmental group to consider some of these issues.
12. The options considered in the economic appraisal were;

**a. Do Nothing**

13. As in all economic appraisals the 'do nothing' option was assessed. It was determined that under this option there would be limited deployment of renewable heat, the amount of which would largely be dependent on fossil fuel prices and the understanding of renewable alternatives. It was estimated that by 2020 renewable heat would account for around 4.8% of heating demand if no financial support was available. This is well short of the 10% target set.
14. 'Do nothing' option is not deemed as a viable option for a number of reasons. Firstly, the target set in the Strategic Energy Framework (SEF) for renewable heat would not be met and the funding provided by HMT would not be used. Secondly, the Northern Ireland renewable heat market would be distinctly disadvantaged in comparison to Great Britain and there would be a potential loss of skills and expertise to the Great Britain market. Finally, there would be widespread criticism of the Department if no action was taken, especially given previous commitments on the issue.

**b. Renewable Heat Challenge Fund**

15. A 'Renewable Heat Challenge Fund' would be a capital grant with the grants being awarded on a competitive basis, rather than 'first come first served'. In this scenario interested parties would be invited to apply for funding and would provide information on the intended installation, expected heat output and required funding (there would be a maximum allowed grant based on % of total cost). Applications would then be ranked based on the cost-effective renewable heat output and grants awarded according to rank. This process would be repeated on either a bi-annual or annual basis.
16. If no funding is guaranteed post 2015, a capital grant system would be preferable to a RHI scheme. A challenge fund grant scheme would ensure that the most cost-effective installations were supported and that the £25m was utilised to good effect. Under this option around 5.6% renewable heat could be delivered by 2015 when the existing funding is due to end. The challenge fund could continue post 2015 if funding was available and could possibly achieve over 7.5-8.75% renewable heat by 2020 depending on funding levels.
17. There are several issues to consider under the challenge fund option. The scheme would need to be administered either by the Department or a contracted third party organisation and therefore could result in additional resource pressures or governance issues. It could also be potentially complicated and would require applicants to have an understanding of their heat demands and most appropriate technology requirements. There would also be a danger that only certain technologies, which ranked highly on the scoring matrix, would be incentivised, namely air source heat pumps or biomass boilers; this could be controlled by the Department in designing the scheme. However, this would not support the development of a more diverse market

and could have a negative impact on technologies that require more support, eg solar thermal.

18. The final issue with a 'challenge fund' is that it is in essence a capital grant system and does not provide long term stable support. Previous experience shows that grant schemes tend to lead to the market ramping up but then failing once the funding ends. It is also not certain that such a fund would be in the spirit of the terms under which HMT is providing the funding. The experience of the NIRO for renewable electricity, which provides long term stable support, is a more favourable approach.

### c. Capital grant funding

19. CEPA also considered a straight forward administratively awarded capital grant system. In comparison to the competitively awarded challenge fund this would be undertaken on a 'first come first served' basis, similar to the *Reconnect* programme. The option considered by CEPA would be a 50% grant to cover the capital costs of various renewable heat installations. Under this scheme 5.35% renewable heat could be delivered by 2015. No projections were made to 2020 as CEPA advised that if additional funding was available post 2015 it would be more effectively used in the challenge fund format.

20. If a grant scheme is the preferred option then a challenge fund scheme would be the preferred option and would ensure deliver more cost effective renewable heat. Lessons learned from the *Reconnect* scheme would support CEPA's view that a competitively awarded grant can be more cost-effective and targeted than an administratively awarded grant.

### d. The Great Britain Renewable Heat Incentive

21. CEPA also assessed the appropriateness of joining in with the existing GB RHI. There are many positives for doing so, including the consistency of approach with GB, savings in the cost of administrating an NI scheme, and the potential speed with which a scheme could be implemented.

22. However, CEPA has concluded that, given the differences between the GB and Northern Ireland heat markets implementing the GB RHI as it is currently devised and using the proposed GB tariffs in Northern Ireland would not be appropriate. The major issue that would arise would be that customers could be potentially over-incentivised and inefficient technologies supported; there would also be an unintended negative impact on the gas market. The GB tariff levels are largely based on the assumption of a household or business switching from gas to renewables. Whereas, given the prevalence of oil in Northern Ireland, tariff levels for a Northern Ireland scheme would need to be set on the assumption of moving from oil to renewables. If GB tariff levels were implemented there would potentially be an incentive for existing gas customers to switch to renewables and not just those using oil. Under statute, DETI has an obligation to develop and maintain an efficient gas industry and therefore it is important to develop tariff levels that make it attractive for oil customers to switch but not necessarily existing gas users.

**e. A Northern Ireland Renewable Heat Incentive**

23. CEPA has developed and assessed an appropriate RHI for the Northern Ireland. The tariff levels have been developed to encourage the movement of existing oil users to renewable heat, whilst protecting (to a degree) the existing gas market.

24. The NI RHI option is the preferred approach and offers the highest potential renewable heat output at the best value. It also would incentivise a wide range of technologies and provide investors with long-term support. Whilst it would only be open to non-domestic market, in the first instance, it would eventually be open to all consumers and therefore provide greater accessibility.

25. Preliminary tariffs are shown below, in comparison to the GB proposed levels (all tariffs are for 20 years and in pence per kWh). Column 1 details the tariffs set within the latest DECC publication and will apply to all non-domestic buildings in GB; Column 2 are tariffs developed by CEPA using the same methodology as DECC and are based on existing Northern Ireland energy costs; and Column 3 are tariffs set by CEPA which take into account the limited funding that is available.

	Column 1 GB RHI Consultation	Column 2 NI Levels – DECC methodology	Column 3 NI levels – Alternative methodology
<i>Air source heat pumps</i> ASHP – all levels	-	-	-
Biogas Injection – all	6.5	2.9	2.2
Biomass boilers - small	7.6 (1.9 after a certain level)	4.0	1.8
Biomass boilers – medium	4.7 (1.9 after a certain level)	1.4	1.4
Biomass boilers – large	2.6	-	-
<i>ground source</i> GSHP – small	4.3	3.8	4.1
GSHP – medium	3.0	1.8	1.0
Biofuels – small	-	1.0	1.5
Biofuels – medium	-	-	-
Biofuels – large	-	-	-
Solar thermal – small <i>(look)</i>	8.5	17.0	8.5
Solar thermal - large	8.5	-	-

26. The purpose of the RHI (in GB and NI) is to incentivise people to move from carbon-based heating to renewable energy sources. The 'cost' of the carbon fuel is therefore important and differs in the GB and NI markets. The tariffs for the Northern Ireland scheme are therefore lower as they are based on moving people from a more expensive fuel source, therefore the required incentive to move is deemed to be lower. In addition, the tariffs are based on an oil counterfactual, increasing the tariff levels could lead to consumers currently on gas switching to renewable heat, this would **not** be desirable as it could lead to long term price increases in gas distribution charges. The two NI options refer to tariffs developed using the DECC methodology for the GB scheme and an alternative set of tariffs developed using a different methodology. These tariffs are indicative and subject to further analysis and development.

27. Similar to the GB scheme, the NI RHI would be made available to the non-domestic market in April 2012, with the domestic market introduced in October 2012. The reason for this is difficulties in assessing and monitoring heat demand in domestic dwellings. DECC has recently gone to tender for an economic appraisal of phase 2 of the GB RHI which will consider incentives for the domestic market. In our consultation document a commitment to consider this issue and introduce the RHI to the domestic market as soon as possible, and in line with GB, could be included.
28. Some specific issues to be considered under a potential Northern Ireland scheme are;
- i) **Solar thermal:** Solar thermal is an expensive technology, this is primarily due to the fact that it can not meet space heating requirements. Whilst solar thermal will provide around 50% of yearly hot water requirements there still remains the need to retain a primary heat source such as gas, oil or renewables. To incentivise this technology using the same rationale as the other tariff levels there would be a danger of over-incentivisation and given the limited funding available this could divert funding from other more economical technologies. To this end, CEPA would recommend not including solar thermal within the RHI. This, however, could be open to criticism especially in light of solar thermal being a well-known and well established technology. Consideration could therefore be given to setting a tariff for solar thermal with a much lower rate of return, similar to the approach taken in GB, this would mean providing a rate of 8.5p per kWh.
  - ii) **Use of biofuels** – the GB scheme does not include biofuels. However CEPA do recommend their inclusion given the high use of oil in Northern Ireland and the many circumstances where neither renewables nor gas may be an alternative.
  - iii) **Support for anaerobic digestion** – given the increased support for AD under the NIRO, it is proposed not to support any heat generated from this technology, as to do so would amount to double incentivisation. RHI support could be made available for heat only AD plants that would not receive NIRO support. However given the level of support under the NIRO it is unlikely any heat only AD plants will be developed.
  - iv) **Support for the heavy industrial sector** – CEPA recommend that the heavy industrial sector (17 sites accounting for 22% of heat demand) is not supported under the RHI. This is because in some cases renewable heat technologies would already be cost-effective by 2020 and in other scenarios switching to renewable heat may badly affect the current gas network as well as its future development. As detailed later in the submission, there may be merit in supporting some heavy industrial sites and introducing different eligibility requirements, outside of the mainstream NI RHI.

### Possible Approach

29. In considering the economic appraisal, previous analysis, funding profile and the overarching policy objectives for renewable heat, I wish to get your view on the proposed design of an incentive scheme for Northern Ireland.

30. CEPA made two recommendations which are dependent on the funding profile;

- a. If there is to be no funding guaranteed post 2015 then a grant funding scheme should be implemented. This scheme should be in the form of a competitively awarded challenge fund; or
- b. If there is confidence that additional funding can be provided by DECC/HMT post 2015 then a NI RHI should be introduced based on tariff levels set out in the table above. The GB RHI scheme is open to 2020 and DECC/HMT have stated that additional funding will be available in the next spending period.

31. If your preferred approach is a Northern Ireland RHI, the scheme would have a number of elements;

- i) **A Northern Ireland RHI to be in place by 1 April 2012** and open to all non-domestic customers (excluding the large industrial sector). The domestic sector is not due to be eligible for the GB RHI until October 2012, the delay relates to issues to do with monitoring heat use and is timed to coincide with the introduction of the Green New Deal in Great Britain. If the issues surrounding estimating heat usage in domestic dwellings can be resolved before April 2012 the NI scheme could be open to all at its introduction, however no firm commitment can be made.
- ii) **Should the Heavy Industrial sector be eligible for incentives?** As outlined in para 28, CEPA has recommended excluding the heavy industrial sector from any incentive scheme due to the fact that in some cases renewable heat could already be cost effective and there may also be an impact on the gas network if large industrial sites switched to renewable heat. An alternative option to total exclusion would be to have an additional layer of eligibility for industrial sites wishing to avail of RHI support, with permission needing to be sought and gained from the Department in advance of sites seeking accreditation from Ofgem. This additional eligibility requirement would focus on the economic benefit of incentives (i.e. is financial support necessary or is renewable heat already cost-effective) and the potential impact on the gas industry (i.e. sites on or viable for gas could be excluded). This proposal would ensure that appropriate heavy industrial sites are incentivised whilst those that are already economically viable or would negatively impact on the existing or future gas network could be excluded.
- iii) **Should interim grant support be made available for the domestic sector until April 2012?** Under the funding arrangements from HMT, £2m is available for renewable heat support this financial year, this money must be used for renewable heat and not administration costs. Therefore, in order for this funding to be utilised I would propose that grant support is made available for renewable heat installations in the domestic sector. This scheme would be similar to the 'renewable heat premium payments' proposed by DECC for the domestic sector.
- iv) **Call for evidence on the costs of and the barriers to the deployment of deep geothermal energy.** Under the renewable heat consultation I would propose including a call for evidence on geothermal energy to better understand how this technology might be best incentivised. Geothermal energy could be



deemed eligible for support under the GSHP tariffs in the NI RHI however because of the scale of geothermal projects this may be an inappropriate level of support. A call for evidence could inform a specific tariff level to be included from April 2013.

- v) **Establishment of a renewable heat strategy group.** As demonstrated, none of the options identified, at this stage, will provide 10% renewable heat by 2020. It was always the case that the development of the renewable heat market would require a cross-departmental approach, with the £25m incentive scheme DETI's contribution to the market. I would therefore propose the establishment of renewable heat group, to act as a sub group to SEIDWG, Membership might include;

- DARD: biomass sustainability and agricultural uptake
- DFP: building regulations, public procurement and the public estate
- DEL: renewable energy skills
- DOE: carbon savings and planning
- DSD: domestic energy efficiency and fuel poverty
- OFMDFM: linkages to the Sustainable Development Plan
- Invest NI: opportunities for business and 'green jobs'

32. As you will be aware, an overarching concern whilst developing an appropriate incentive scheme has been the potential impact on the gas network, both the existing market and any future extension. The issue is that if existing gas customers or potential future customers (within the existing network) switch to renewables there could be an impact on gas distribution costs and prices. In considering the future extension, if large industrial and commercial loads in Cookstown, Dungannon, Omagh, Enniskillen etc switched to renewable heat then the economic case for extension would be weakened.

33. CEPA has considered this issue extensively and concluded that the impact on the gas market, both existing and future, to 2020 would be minimal. Analysis within the economic model would suggest that 266 small commercial properties, which might have taken up gas, will switch to renewable heat under a RHI. There should not be many circumstances where existing gas customers switch to renewable heat as the tariffs have been designed based on an oil counterfactual and therefore there would be no economic benefit for a gas customer switching to renewable heat. However, the only way to completely prevent this scenario would be to deem all existing gas customers as ineligible for RHI payments.

34. I would welcome your initial thoughts on the proposed approach, specifically;
- i) Should Energy Division develop proposals for a Challenge Fund Scheme or a NI RHI?
  - ii) How should the heavy industrial sector be treated under any incentive scheme?
  - iii) Should any specific eligibility requirements be included in an incentive scheme to protect the gas market?
  - iv) Should Energy Division develop proposals to utilise the funding for this year (£2m) in a grant scheme for the domestic sector?
  - v) Are you content for a call for evidence on the costs and barriers to deep geothermal energy be included in any future consultation?

## Next Steps

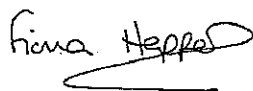
35. Following your consideration of this submission, I will finalise the proposed consultation document and provide a more detailed overview of the scheme. In order to begin a public consultation in July 2011, you will need this by **16 June 2011**. In this submission there will also be letters to Ministerial Colleagues and the ETI Committee; plus, the ETI Committee is expecting a written briefing on this issue on 30 June 2011.
36. I would also propose speaking with DFP colleagues to understand when DFP approval will be required to implement the proposed scheme. This may be more appropriate following the consultation so a final scheme can be submitted for DFP approval rather than a draft scheme which is subject to change.
37. You will be aware that Energy Division officials have been liaising with DECC colleagues in order to secure an amendment to the 2011 Energy Bill to provide DETI with powers to introduce a RHI. This is progressing well and we are also preparing a timetable for subordinate legislation. As part of the DECC amendment, an impact assessment has been produced by Energy Division and cleared by Departmental Economists. DECC officials have requested that this is formally signed off by you; therefore I have attached this at **Annex A** (attached separately) for your clearance and signature. This will be placed on the Departmental website.

## Recommendation

38. It is recommended that you;

- i) Consider the overview of the CEPA economic appraisal and the options developed;
- ii) Indicate your preferred option for incentivisation ie either a Challenge Fund or RHI;
- iii) Consider the issues identified approach outlined in paras 30 and 33 ;
- iv) Agree that a consultation paper is now developed for your consideration; and
- v) Approve and sign the impact assessment at **Annex A**, to support the amendment to the 2011 Energy Bill.

39. I am conscious that this is a lengthy and complicated submission and have secured a meeting in your diary (noon, 13<sup>th</sup> June) to discuss.



**FIONA HEPPER**  
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