

From: [Connolly, Samuel](#)
To: [McConville, Carmel](#)
Subject: FW: Business Case - Economic Appraisal of a NI RHI
Date: 04 January 2011 10:42:13
Attachments: [Revised Business Case - December 2010.DOC](#)
[Revised Business Case - December 2010.tr5](#)

Carmel,

Can you please review this and we can discuss later on today.

thanks

Samuel Connolly

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

From: Hutchinson, Peter
Sent: 31 December 2010 09:33
To: Connolly, Samuel
Cc: Clydesdale, Alison
Subject: Business Case - Economic Appraisal of a NI RHI

Sam,

Please see attached revised business case for the Economic Appraisal of a NI RHI.

In advance of this being submitted to DFP Supply for approval DETI Economists must also consider and approve. I know that you commented on the draft Terms of Reference but can not remember if you officially saw/commented on the initial business case.

I would be grateful if you, and appropriate colleagues, could consider the attached business case and advise on whether or not you are content. This business case has been approved by Fiona Hepper and is currently with David Sterling before going to the Minister for consideration.

Grateful for a response asap.

Happy to discuss.

Thanks,

Peter

Peter Hutchinson

Sustainable Energy

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BUSINESS CASE FOR PROPOSAL TO ENGAGE A CONSULTANT

Project Title: ECONOMIC APPRAISAL OF A NORTHERN IRELAND
RENEWABLE HEAT INCENTIVE

Prepared By: PETER HUTCHINSON _____ **Date:** 10th November 2010

and

revised 17 December 2010

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Approved By: FIONA HEPPEL
(Director of DETI Energy Division)

Signed: _____ **Date:** _____

Section 1: NEED FOR THE ASSIGNMENT

Background - Purpose of the assignment

- 1.1 This paper is prepared in line with the DFP Guidance for the use of external consultants (22 December 2009).
- 1.2 The purpose of this assignment is to appoint external consultants to carry out an economic appraisal for a Northern Ireland Renewable Heat Incentive ¹(RHI). This is a specialist one off task that requires the advice of specialist heat economists – these skills are not available within DETI. Consideration will also be given to the alternative methods of support to ensure that the heat market is encouraged in the most cost-effective way possible.

Strategic / policy context

- 1.3 In December 2009, DETI appointed AECOM Ltd and Pöyry Energy Consulting to carry out a significant piece of research into the nature of the heat market heat, the current levels of renewable energy, the potential development of the market and potential support measures to assist the reaching of a 10% renewable heat target.

¹ An RHI is an incentive scheme that will reward those who install eligible renewable heat technology with a set tariff to be paid over a number of years, the level of tariff and length of payment is determined by the size and type of technology involved. The tariffs are set in order to cover the capital, operating and other non-financial costs of installing such technologies.

- 1.4 This followed the Department of Energy and Climate Change (DECC) announcement in July 2009 that it intended to introduce a RHI to support the deployment of renewable heat technologies. Details on the design, implementation, tariff levels and eligibility were later consulted on in February 2010.
- 1.5 The RHI is the main UK policy driver to satisfy obligations under the EU Renewable Energy Directive and to support the achievement of their renewable heat target of 12% by 2020, and as such Northern Ireland is expected to contribute to this target.
- 1.6 The RHI, as it stands, only applies to England, Scotland and Wales and not Northern Ireland. The significant differences between the heat markets here and Great Britain meant that a separate assessment on the nature and growth potential of the Northern Ireland market was needed.

What is the need for the assignment?

- 1.7 The report produced by AECOM and Pöyry showed that whilst the current level of renewable heat in Northern Ireland is relatively low (1.7%) that there was potential to develop the market by using technologies such as biomass, biogas, biofuels, heat pumps, deep geothermal etc. The report demonstrated that 10% renewable heat by 2020 was achievable, however substantial Government support, in terms of policy and financial incentives, would be required. The research also highlighted that the GB RHI, as it stood, could be ineffective in Northern Ireland as it did not take account of the specific elements of the heat market here and **therefore to effectively incentivise the local market a Northern Ireland RHI should be developed.**
- 1.8 The DETI Minister, Arlene Foster MLA, made a statement to this effect on 20th September 2010, committing to developing and implementing a Northern Ireland RHI, should it prove economically viable to do so. In addition, a target of 10% renewable heat by 2020 was formally adopted by the Northern Ireland Executive as part of the DETI Strategic Energy Framework.
- 1.9 Following the Chancellor of the Exchequer's statement on the Spending Review in October 2010, that £860m of funding will be available for the RHI over the spending review period, the Chief Secretary to the Treasury informed the First and deputy First Minister that £25m of this (£2m/£4m/£7m/£12) would be available for a Northern Ireland RHI over the spending period.
- 1.10 Therefore, DETI now wishes to appoint a service provider to undertake an independent economic appraisal of a Northern Ireland specific renewable heat

incentive. This is essential to ensure that the most cost effective structure of a RHI is implemented in Northern Ireland.

- 1.11 It has been demonstrated that a Northern Ireland RHI, developed with the local heat market specifically in mind, has the potential to support the deployment of renewable heat and assist in reaching the Executive endorsed target of 10% renewable heat by 2020. In order for the RHI to be designed and implemented it is necessary to carry out an Economic Appraisal to determine the most cost-effective structure for the scheme. This work will assess the RHI in comparison to other support measures, will develop possible scenarios for tariff levels, advise on the potential uptake and overall cost of a scheme and allow for a decision to be taken on the future design.
- 1.12 As detailed at para 1.9, HMT has indicated that funding will be available to Northern Ireland for a RHI, should one be developed. Without this piece of work it will not be possible to design such a scheme and would result in this funding being lost.

What is the scope of the assignment, i.e. tasks anticipated to provide desired outcomes?

- 1.13 This assignment will determine the need for a RHI in Northern Ireland, will outline the objectives for introducing such a scheme, advise on possible structures of a RHI and assess the cost/benefit. The assignment will also involve considering a range of methods for developing the heat market, either through the RHI structure or other means. This will ensure that the most cost-effective method of developing renewable heat is implemented.

Timing of assignment – when is the information required and is there any possibility of deferring the assignment?

- 1.14 There is no possibility in deferring this assignment. DECC intend to roll-out a RHI in GB from June 2011, by deferring this project there would be a significant delay in rolling out similar policy in Northern Ireland and therefore disadvantaging the renewable heat market here. Further to this HMT has indicated that funding for a Northern Ireland RHI is available from 2011/12, delaying this project would also lead to this money being unspent.
- 1.15 Following the completion of this assignment there will be a need for Executive approval, public consultation and development of legislation, therefore the Economic Appraisal must be completed as soon as possible. This will allow the Minister to

make a final decision on renewable heat policy and enable a Northern Ireland RHI to be rolled out as close to June 2011 as possible.

Description of previous similar consultancy assignments, including an analysis of past expenditures (corresponding evaluations must be appended)

- 1.16 No economic appraisals of a Northern Ireland RHI have previously been undertaken. A post project evaluation (PPE) of the report into the potential for deployment of renewable heat (AECOM Ltd / Pöyry Energy Consulting 2010) is attached at **Appendix I**.

Section 2: BENEFITS AND THEIR TIMING

What are the projected outputs from the assignment?

- 2.1 The immediate output of the external consultancy exercise is the completed economic appraisal with the necessary level of independence and within the required short timescale.

What are the expected benefits to be delivered from the assignment and give an indication of when they are likely to accrue?

- 2.2 The immediate benefits of the consultancy appointment are the independent assessment of the need for Government support in the renewable heat market, the associated benefits and a detailed economic appraisal of implementing support mechanisms (namely a RHI). This approach will ensure that future policy decisions in respect of supporting the renewable heat market will be based on firm evidence with the expected costs and benefits known in advance. The immediate benefits will accrue initially from 2012 onwards as the number of installations begin to increase.
- 2.3 The long term benefit of undertaking this piece of work will be the development of the renewable heat industry in Northern Ireland. By increasing the uptake of renewable heat in Northern Ireland there are opportunities to reduce Northern Ireland's dependence on fossil fuels and therefore increasing fuel security and cutting carbon emissions. The development of the renewable heat industry also presents significant opportunities for 'green jobs' in the period 2012-2014 and beyond.

What are the implications of the assignment not going ahead?

- 2.4 If this work did not go ahead then decisions on the future shape of a policy to incentivise renewable heat in Northern Ireland would either be taken without a firm evidence base or not taken at all.
- 2.5 If a RHI went ahead without economic analysis then the most cost effective method may not be implemented and the tariff levels initiated may not be the most appropriate for Northern Ireland. This could lead to a costly, ineffective system which would not support the achievement of the 10% target.
- 2.6 If no decision on supporting renewable heat was taken then there would be significant criticism on the Department for renegeing on previous statements. Further to this the Executive endorsed 10% would not be achieved and the funding allocated to Northern Ireland for this scheme would be lost.

Section 3: ASSESSMENT OF ALTERNATIVES OPTIONS

- 3.1 A number of alternative options to external consultancy have been considered;

i) Option 1 – Do nothing

Doing nothing would result in the Department making a non-evidence based decision in regards to supporting and developing the renewable heat market. This could result in an ineffective and costly option being employed or no decision on heat incentivisation being taken at all and therefore would have a detrimental impact on the Northern Ireland renewable heat market.

ii) Option 2 – Complete the analysis in-house

The necessary resources and technical expertise do not currently exist in-house in Energy Division as specialist heat economist input is required.

iii) Option 3 – Partial completion of assignment using in-house resources

The necessary resources and technical expertise to develop appropriate support mechanisms for renewable heat and to advise on the potential cost / benefit do not currently exist in-house. In-house economists will be utilised in

the quality assuring of the work by consultants, however they do not have the necessary technical experience in renewable heat to undertake this task.

iv) Option 4 – Short/Medium term secondment of industry experts

Whilst the secondment of industry experts would provide the necessary technical expertise the resources do not exist within energy division to either manage this secondment on a day-to-day basis or to house the seconded experts.

v) Option 5 – Use of External consultants

This is our preferred approach. This will ensure the appropriate level of expertise is available for this project and that it can be completed in a timely and cost-effective manner. This approach would also ensure that the assessment is independent and the conclusions based on economic analysis and evidence.

Section 4: EXPECTED DELIVERABLES

Please provide details on the deliverables expected from consultancy. If available, a copy of the draft terms of reference for the proposed consultancy should be attached.

- 4.1 The successful consultant will be expected to undertake an independent economic appraisal of a Northern Ireland specific renewable heat incentive. The Economic Appraisal will make recommendations, based on evidence gathered and the analysis carried out, on the most cost effective structure of a Northern Ireland RHI to increase the level of renewable heat to 2020. The economic appraisal will be carried out using the 10 steps outlined within the Northern Ireland Guide to Expenditure Appraisal and Evaluation (NIGEAE) guidelines.
- 4.2 A copy of the terms of reference for the proposed consultancy is attached at **Appendix II.**
-

Section 5: SKILLS TRANSFER***Outline the potential for skills transfer***

- 5.1 This piece of work requires a combination of both economic and energy, specifically renewable heat, expertise to understand the current heat market in terms of supply and demand and to assess the effectiveness and cost of the various support measures that will be considered. This expertise will be required to analyse the market and provide the evidence base for a way forward on an appropriate financial support mechanism for renewable heat.

What arrangements have been put into place to facilitate the transfer of skills from the consultants to departmental staff to the extent that this is a benefit of the consultancy?

- 5.2 Throughout the project there will be some opportunity for skills transfer to Departmental staff, specifically in relation to energy economics and the cost/benefit of the various options considered. This knowledge and understanding will increase through close contact with the appointed consultants and can be maintained following the successful completion of the project.

When is it anticipated that knowledge and skills delivered by the consultancy will be transferred to internal staff?

- 5.3 Knowledge and skills delivered by the consultancy will be transferred to internal staff throughout the project through meetings and discussions about the elements of the project. This will be increased further on delivery of the draft report through the process of quality assurance. The final report will assist in in-house knowledge and support the development of a RHI and renewable heat route map.

What are the implications of skills transfer for future consultancy support?

- 5.4 Due to the highly technical nature of renewable heat, specifically the economics surrounding the various technologies, the skills transfer involved in the project will not mean that future consultancy won't be required. However, the transfer of skills, knowledge and understanding during this assignment will ensure that this work can be developed further in-house and that any future consultancy will be monitored and quality assured by knowledgeable and experienced staff.
-

Section 6: PROPOSED DIVISION OF WORK

What in-house support will be given to the consultants e.g. technical/specialist inputs, accommodation, photocopying and typing services etc?

- 6.1 The external consultants will be required to provide the delivery of specific objectives as described in the terms of reference within the tender documentation.
- 6.2 In-house staff will be used to manage the delivery of the project, assisting consultants with minor queries if appropriate and providing the consultants with full and supporting background documentation to give contextual awareness of renewable heat in Northern Ireland. It is estimated that 2-3 meetings will be held with G7/DP throughout the project. The Departmental economists will provide a quality assurance check before the EA is signed off.

Provide indicative estimates of the number of consultancy days by consultancy grade.

- 6.3 The assignment is estimated to take up to 85 consultancy days as follows:-
- Principal Consultant – 15 to 20
 - Senior Consultant – 10 to 15
 - Principal Economist – 15 to 20
 - Technical Consultant – 15 to 20
 - Economist / Researcher – up to 10

Provide indicative estimates of the expected number of in-house staff days by staff grade.

- 6.4 The assignment is estimated to take up to 20 in-house staff days, estimated at 10 days at DP, 5 days at G7 and 5 days at Deputy Economist.

Section 7: EXPECTED COSTS OF THE ASSIGNMENT***External Consultancy Costs***

7.1 ~~It had initially been~~ ~~It is~~ expected that the external consultancy costs for this project ~~would be in the region of~~ ^{Sensitive commercial} ~~_____~~ ~~This analysis was based on costs of other~~

economic appraisals carried out. However, following a competitive tender process four tenders were received at the following costs:

- ~~£ [Sensitive commercial information]~~ (AECOM Ltd, partnering with Pöyry Energy Consulting)
- ~~£ [Sensitive commercial information]~~ (Europe Economics, partnering with Cyril Sweett and Scott Wilson)
- ~~£ [Sensitive commercial information]~~ (Cambridge Economic Policy Associates, partnering with AEA)
- ~~£ [Sensitive commercial information]~~ (Element Energy, partnering with Cambridge Econometrics)

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7.2 The evaluation panel met to assess the four tenders and marked each bid on the basis of methodology, contract management and resource allocation. These marks were then added to the marks allocated for cost with the result as follows:

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- 72.2, Cambridge Economic Policy Associates, partnering with AEA
- 63.2, Europe Economics, partnering with Cyril Sweett and Scott Wilson
- 61, Element Energy, partnering with Cambridge Econometrics
- 53.9, AECOM Ltd, partnering with Pöyry Energy Consulting

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7.3 Therefore, Cambridge Economic Policy Associates (CEPA), partnering with AEA, was provisionally awarded the contract at a cost of ~~£ [Sensitive commercial information]~~. There is no time to retender for this piece of work as not proceeding would leave the Northern Ireland renewable heat market disadvantaged in comparison to GB and create further uncertainty within the market. Further to this, HMT has allocated £2m of funding for a Northern Ireland RHI in 2011/2012, to ensure this money is utilised this economic appraisal must proceed with further delay.

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7.17.4 ~~will be in the region of £40,000.~~ Budget is available from the Energy Division Budget and the ERDF Competitiveness Programme.

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In-House Costs

7.27.5 The in-house cost of 3 meetings, ~~and~~ reading time and project management (detailed at para 6.4) for a G7, DP and Deputy Economist is in the region of ~~£ [Sensitive commercial information]~~.

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Section 8: PROJECT MANAGEMENT / PERFORMANCE REVIEW ARRANGEMENTS

What are the proposed project management arrangements, including details of monitoring officers, draft reports, Steering Groups etc?

- 8.1 The project will be managed by Sustainable Energy Branch with the successful consultants expected to liaise closely with the Head of Branch and Deputy Principal on a regular basis. A Deputy Economist will also provide support throughout the project, specifically quality assuring the work of the consultants.

Proposed arrangements for on-going monitoring of consultancy performance and expected deliverables. The project managers should ensure that appropriate mechanisms are in place for influencing performance at interim stages.

- 8.2 Regular meetings will take place throughout the project with the consultants obliged to submit regular update reports (at agreed intervals) to enable the review of progress. A draft report will be required by 18 February 2011 with a final report due by 28 February 2011.

Identify person/persons responsible for managing/delivering skills transfer.

- 8.3 The progress of the assignment will be monitored closely by the Deputy Principal to ensure that the project is completed on time and within budget.

What are the performance review arrangements for the assignment, e.g. the quality assurance employed from Departmental specialists?

- 8.4 Payment will only be on completion of a satisfactory EA, which has been approved by dept economists.

Skills transfer should be pro-actively managed and monitored like any other consultancy benefit.

- 8.5 The appointed consultants will be expected to attend project management meetings, provide regular update reports and be contactable throughout the contract. Consultants will be expected to explain the analysis carried out and the evidence gathered so skills and knowledge will be transferred.

Section 9: IMPLEMENTATION AND EVALUATION PLAN

How will the results of the consultancy be implemented?

- 9.1 The results of this consultancy will be to provide an evidence base on the economics of a RHI in NI. This information will be used to advise the Minister in advance of a final policy decision in respect of a RHI rollout.

Proposed arrangements for evaluating the outputs delivered by the consultancy assignment. This should include information on who is the responsible officer for ensuring the evaluation takes place and also information on when it is proposed to carry out the evaluation. Whilst ideally the evaluation should be independent of the project promoters, in most instances, evaluations should be carried out by internal resources, i.e. in-house staff or internal consultancy.

- 9.2 Following the completion of this assignment a Post Project Evaluation on the work of the consultants will be carried out by Energy Division, to be completed within 6 months of the satisfactory conclusion of the project.
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Appendix I

POST PROJECT EVALUATION

Title of Consultancy Assignment:	ASSESSMENT OF THE POTENTIAL FOR DEVELOPMENT OF RENEWABLE HEAT IN NORTHERN IRELAND		
Name of Consultant Appointed:	AECOM Ltd and Pöyry Energy Consulting		
Cost of Consultancy:	Sensitive commercial information redacted by the RHI Inquiry		
Prepared By:	Peter Hutchinson	Approved By:	F. Heppel
Signed:		Signed:	
Date:	8 November 2010	Date:	8 Nov. 2010

Section 1: Background

Provide a brief description of the assignment including:

- **What was the purpose of the assignment?**

The assignment was expected to cover the following:

- a. undertake an independent assessment to identify and quantify the current scale, future sustainable growth potential and optimum size and scale of the renewable heat sector in Northern Ireland. The successful consultant will be required to provide a statistical evidence base to verify their findings;
- b. make recommendations as to the options for encouraging the deployment of renewable heat technologies in Northern Ireland. The successful consultants must examine the appropriateness of a RHI for NI and will be expected to provide an analysis of the needs or otherwise for any short term incentive that may be required in the absence of anticipated legislation for a RHI in NI in the short term; and
- c. make recommendations for an appropriate evidence-based renewable heat target and to consider how this target might impact on existing energy markets in NI.

- **What was the need for the assignment?**

Following developments in renewable heat policy in both the EU and Great Britain, namely the renewable energy directive and the introduction of the Renewable Heat Incentive (RHI)

respectively, DETI commissioned a piece of research in order to gather up to date information on Northern Ireland heat market and assess the potential for developing renewable heat.

This piece of research was essential to provide the evidence required to inform future policy development in this area and to establish how the renewable heat sector in Northern Ireland could be most effectively supported and developed. With the introduction of binding EU targets in respect of renewable heat (the UK is expected to that 15% of its energy consumption, including heat, comes from renewable sources by 2020, Northern Ireland is expected to contribute to this target) and the introduction of the RHI in Great Britain but not in Northern Ireland, evidence needed to be gathered to inform future policy decisions so the market here would not be disadvantaged.

- **Who was the appointed consultant and when were they appointed?**

AECOM Ltd and Pöyry Energy Consulting were appointed in December 2009 following a competitive tender.

Section 2: Assessment of Costs

This section should provide a comparison of the actual costs of the external consultancy with the agreed contract value.

Where the variation between contract value and actual costs is greater than 10%, an explanation for the variation must be provided [Note where actual costs exceed the cost approved by DFP by more than 10%, then DFP must be informed].

Expected Cost	Sensitive commercial information redacted by the RHI Inquiry	Actual Cost	Sensitive commercial information redacted by the RHI Inquiry
Percentage variation between expected cost and actual cost.			
			0%
Explanation of variation in costs		n/a	

Section 3: Assessment of Deliverables

This section should provide detail on what was delivered by the consultants. The extent to which projected deliverables, as outlined in the Terms of Reference, were met by the consultants, and the quality should be assessed.

The project deliverables, as specified in the Terms of Reference, were as follows;

- i. To provide up to date and accurate statistics on the current heat and renewable heat usage in Northern Ireland.
- ii. To produce a base heat map for Northern Ireland in a Geographic Information Systems format that identifies, as a minimum, high-level heat users and their location; highlights heat demand and resource in NI; and identifies locations which offer the best potential for developing renewable heat technologies.
- iii. To benchmark Northern Ireland's renewable heat potential against Renewable Heat markets in GB, RoI and at least 2 other European regions.
- iv. To consider and present options on how the Renewable Heat market in Northern Ireland could be encouraged / incentivised.
- v. To make an evidence based assessment of the need for an interim measure in Northern Ireland to stimulate the Renewable Heat market in light of the introduction of the Renewable Heat Incentive in Great Britain, and present options for any short term incentivisation.

- vi. To make projections as to evidence-based target for renewable heat to 2020 for Northern Ireland, setting out clearly the potential impact of any target on other existing energy markets (i.e electricity, gas, coal and oil).

On the whole the deliverables as outlined in the ToR were met, quality was consistently good throughout with minimal supervision required. ✓

The terms of reference stipulated that the successful consultant would provide a draft report for consideration by Sustainable Energy Branch (SEB) followed by submission of a final report. These reports were delivered to agreed timescales and to a good standard. Some changes were required but these were incorporated into the final report. AECOM and Pöyry both worked closely with SEB staff, providing regular updates on their research throughout the contract and were also available to answer questions or discuss certain issues further. ✓

The final report is a substantial piece of research and includes detailed analysis of the current status of both the heat and renewable heat markets in Northern Ireland. It provides information on Northern Ireland's position in comparison to other EU states and regions and presents various evidence based options on how the market could be developed. Recommendations are made about how DETI should proceed with this policy area and how a 10% target of renewable heat by 2020 could be achieved. GIS maps have also been provided for DETI's use. ✓

The consultants demonstrated throughout an in-depth knowledge of renewable heat, and wider issues that would affect the rollout of heat policies. ✓

Section 4: Assessment of Benefits

This section should provide detail on the benefits provided by the consultancy assignment. For example:

- **Were the deliverables achieved within the timescale specified in the contract?**

The deliverables of the project, as detailed in the terms of reference, were achieved with the final report covering all aspects required in great detail. This work has informed decisions take on renewable heat policy as it was intended. There was some delay in completing the project. ✓

- **Reasons for any delays and the impact on expected benefits should be explained.**

The project was delivered with some delay, largely due to a delayed start and the amount of data collection that was required. Timescales were revised following discussions between SEB and the consultants. This had limited impact and the final report is of a good standard with excellent detail. ✓

- **Was the consultancy assignment used for the purpose originally intended?**

The consultancy assignment was used for the purpose originally intended. ✓

- **How were the outputs delivered by the assignment used?**

The project provided a detailed analysis of the current status of the renewable heat market, the potential for growth and the possible support measures (both policy and financial) that would be required. The report has informed decisions on future renewable heat policy, detailed in a statement by the Minister on 20th September 2010. The Executive Summary of the report was also circulated to interested parties and placed on the DETI website for information. ✓

SEB now plan to carry out a short piece of economic work aimed at developing a RHI specifically for Northern Ireland, as advised in the report. This work will assess the cost/benefit of such a policy to ensure that it is the most appropriate scheme for Northern Ireland and so that funding secured will be sufficient for the expected demand. ✓

Section 5: Division of Work

This section should provide details of the division of work between in-house staff and the consultants. Evidence should be provided of whether the in-house assistance provided matched what was in the business case.

The business case for this assignment stated that a project steering group would be set up to monitor progress of the consultants and that this group would include representatives from the public sector, private sector, academia and others. This group was established in January 2010 and chaired by Jenny Pyper, Head of Energy Division. Project Steering Group meetings were held on 19 January 2010, 11 March 2010 and 26 April with members of the PSC invited to comment on progress, advise on work areas and quality assure findings. ✓

In addition, the business case stated that there would be regular meetings between the consultants and officials from SEB (G7/DP) and update reports would be submitted at agreed intervals. ✓

An inception meeting between SEB and AECOM and Pöyry was held on 1 December 2009 to discuss the project and the expectations and deliverables. Further meetings were held throughout the project, as well as continual communication via telephone and email. Regular update reports were submitted during the data gathering element of the assignment, with a draft outline report and final draft submitted and considered in advance of a final draft being agreed. ✓

Section 6: Skills Transfer

- *What mechanisms were put in place to allow the transfer of skills and knowledge to happen?*

As a result of the close contact with AECOM and Pöyry throughout the project staff in SEB have a significantly increased understanding of the heat market in Northern Ireland and a better knowledge of the various renewable heat technologies and the economics in comparison to existing fossil fuels. Skills transfer was largely through learning and development gained on a day to day basis working with the AECOM / Pöyry team. ✓

- *Assess the extent to which transfer of skill and knowledge to in-house staff has taken place and what impact has this had on in-house capability?*

This knowledge has been very useful in developing policy options to support the Northern Ireland market and has informed this policy area's work plan for the next 12-18 months. ✓

- *Has the need for future consultancy support diminished as a result of skills transfer?*

Despite the increased understanding there will still be a need to employ experienced energy economists to carry out an economic appraisal of a renewable heat incentive because of the level of technical expertise required. ✓

Section 7: Assessment of Project Management Arrangements

This section should provide an assessment of the project management arrangements. For example:

- *Were the monitoring arrangements put in place to manage the consultant's satisfactory?*

From the outset of the project it was agreed that regular detailed update reports would be provided by the consultant, specifically in terms of progress of data collection, and that informal contact in the form of phone calls and email would be expected. This system worked well and SEB were kept informed of progress, advised of difficulties and were able to offer appropriate support and advice as appropriate. AECOM and Pöyry were also able to advise of development in renewable heat policy in GB which benefited the project as a whole.

- *Was there an opportunity to influence performance interim stages?*

There were opportunities to influence performance at interim stages, and this was utilized most between the draft and final report stages.

- *Was the project managed effectively?*

There were no issues with project management – appropriate levels of staff from AECOM and Pöyry were made available to work on the project and good contingency arrangements were in place where required. The project was managed effectively by AECOM.

✓

Section 8: Conclusions and Recommendations

Conclusions

Provide a summary of what value was added by this assignment and assess whether, on balance, value for money was achieved.

The assignment provided SEB with a sound evidence base to make policy decisions on renewable heat, namely an appropriate target for 2020 and a view on how this could be achieved. It also provided up to date accurate information on the heat and renewable heat markets in Northern Ireland for the first time. The final report is a detailed document which will be of significant value to SEB as this work progresses and policy is developed and legislation drafted.

The assignment was viewed as the first step in the development of the local renewable heat market, by developing this sector there are significant opportunities to reduce carbon emissions, increase fuel security and realize the potential for new 'green jobs'.

✓

On balance Value for Money was achieved.

Recommendations

Provide a summary of the lessons learnt and provide details on how these will be disseminated within the Department/Agency.

The report allowed the adoption of a 10% target for renewable heat in the Strategic Energy Framework which has been agreed by the Executive as part of Northern Ireland's vision for energy policy.

One lesson learnt from this assignment is that in future more time is required for an assignment that requires so much data collection. The use of a Project Steering Group to manage the process was also useful and worked well.

This PPE will be circulated to energy division to highlight the lessons learned.



Appendix II

**DETI - ECONOMIC APPRAISAL OF A NORTHERN IRELAND
RENEWABLE HEAT INCENTIVE****General**

1. The Department of Enterprise Trade and Investment (DETI) is responsible for the development and maintenance of an appropriate legislative and policy framework for energy in Northern Ireland and recently published the Strategic Framework for Northern Ireland to cover the next 5-10 year period. The vision is for a competitive, sustainable, reliable energy market at the minimum cost necessary. Four key policy goals have been identified to support this vision as follows
 - Competitiveness
 - Security of Supply
 - Infrastructure
 - Sustainability

2. The EU Renewable Energy Directive (2009/28/EC), published in the Official Journal of the European Union on 5 June 2009, requires that member states ensure that 15% of their energy consumption comes from renewable sources by 2020. This requirement extends beyond electricity to heating and cooling and to transport. In line with this, DETI has committed in the recently published Strategic Energy Framework 2010, to achieving a renewable heat target of 10% by 2020.

3. DETI now wishes to appoint a service provider to undertake an independent economic appraisal of the level of support that could be introduced through a Renewable Heat Incentive (RHI) to encourage the roll-out of renewable heat technologies in Northern Ireland and support

this 10% target to 2020. The DETI Minister has already indicated that a Northern Ireland RHI will be implemented if it is economically viable. The budget allocation for an RHI in Northern Ireland is £25m from 2011/12 – 2014/15. This funding has been provided by HM Treasury and is only available to Northern Ireland for a RHI. This is to ensure that Northern Ireland is not disadvantaged compared to the rest of the UK. This economic appraisal needs to therefore identify the most cost effective option for implementing the RHI policy.

Background

4. In light of the obligations within the EU Renewable Energy Directive, developments in renewable heat policy in Europe and the proposed introduction of the RHI in GB, DETI commissioned a comprehensive study into renewable heat in Northern Ireland. The purpose of this study was to establish up to date and accurate statistics on the current heat and renewable heat usage in NI; benchmark the potential for renewable heat in NI against renewable heat markets in GB, ROI and Europe; present options on how the renewable heat market in NI could be encouraged; and make projections for an evidence based renewable heat target to 2020. **A copy of the study is available on request.**
5. Heat demand in Northern Ireland has been estimated at 17.4 TWh, of this 1.7% currently comes from renewable sources. The majority of heat use in Northern Ireland is in the domestic sector, at 61% of the total heat demand or 10,644 GWh. This is followed by the large industrial sector at 22%, the commercial sector at 12% and finally the public sector at 4%.
6. This study has concluded that a realistic and achievable target for renewable heat is 10% by 2020. The reaching of this target would contribute to requirements placed on the United Kingdom under the Renewable Energy Directive as well as supporting wider energy policy goals of increased fuel security, reduced carbon emissions and developing opportunities for 'green' jobs.

Achieving a 10% target

7. The recently completed study includes a number of possible policy / support options available to DETI in order to assist increasing the level of renewable heat currently deployed in Northern Ireland.

- **The development and implementation of a specific Renewable Heat Incentive (RHI) for Northern Ireland.** The GB RHI, as it stands, appears to be inefficient for Northern Ireland, by over-incentivising some technologies and not encouraging the most cost-effective options (background information on the GB RHI is available at **Annex A**). DETI now wishes to develop a specific RHI model for Northern Ireland.
- **Targeted support for the heavy industrial sector.** In Northern Ireland 17 heavy industrial sites account for 22% of the total heat demand, with 2 sites on their own accounting for around 15% of total heat demand, therefore there is considerable potential in supporting the reaching of the 10% target through renewable heat in this sector. A support mechanism for this sector could be rolled out in conjunction with a NI RHI or independently.
- **Development of biogas.** There is considerable theoretical potential for the development of biogas schemes in Northern Ireland. The generation of biogas for injection into the gas grid appears to be the most resource and cost efficient means of generating renewable heat. An assessment needs to be taken on whether or not this technology could be incentivised through an RHI model.
- **New builds.** The level of renewable heat in new developments between 2010-2020 could potentially represent (assuming high levels of energy efficiency and use of low carbon rather than renewable fuels) up to 4.9% if all heat was met by renewable technologies. The level to

which renewable technologies in the new build sector could contribute to supporting the 10% target will need to be assessed.

Purpose of this assignment

8. DETI now wishes to appoint a service provider to undertake an independent economic appraisal of a Northern Ireland specific renewable heat incentive. The economic appraisal must establish SMART objectives and should identify any constraints to the project. **The economic appraisal must be carried out using the 10 steps outlined within the Northern Ireland Guide to Expenditure Appraisal and Evaluation (NIGEAE) guidelines (<http://www.dfpni.gov.uk/eag>).**

Contract Requirements

9. The key objectives of this assignment will include but should not be limited to the following;
 - **Identify the strategic context within which this policy sits, specifically identifying the particular EU, UK and NI policy that is relevant.**
 - **Determine the need for Government intervention in the renewable heat industry in Northern Ireland;**
 - Explain the legal requirement of the EU Renewable Energy Directive.
 - Detail of measures employed in GB, RoI and the EU to support the development of renewable heat.
 - Assess the specific market failure for renewable heat in Northern Ireland.
 - Assess the demand and potential for growth in the renewable heat market.
 - Assess the impact of doing nothing.

- **Outline the objectives of Government's support of the renewable heat industry and the associated benefits in particular;**
 - Assess the potential associated benefits to the wider economy.
 - Outline how the widespread implementation of renewable heat technologies could impact on fuel poverty (positively and negatively).
 - Detail the associated carbon savings in reaching 10% renewable heat.
 - Identify key technologies and likely % contribution to the 10% target.

- **Identify a full list of potential options for future delivery of a Northern Ireland Renewable Heat Incentive.**

- **Provide a detailed analysis of the economic cost/benefit of implementing a renewable heat incentive in domestic, non-domestic and the large industrial sector in NI, in particular;**
 - An assessment of appropriate tariff levels (pence per kwh) and lengths (number of years), with consideration given to the need for different categorisation.
 - An assessment of the potential uptake of the RHI over its lifetime, the associated cost and the impact on the levels of renewable heat. This assessment should include consideration of a number of agreed variables.

- **Identify and quantify the monetary costs and benefits for each option to include;**
 - Each option should be fully costed and the financial payback of each technology should be assessed.
 - Identify any potential additionality, deadweight and displacement impacts.

- Present a recommended approach based on cost / benefit analysis
- **Assess and identify the potential risks in delivery in a future support scheme, to include consideration of;**
 - Potential low uptake.
 - Inadequate levels of support.
 - Impact of the extension of the gas network.
 - Impact of constraints of biomass.
 - Increase / decrease in energy costs.
- **Outline the non-monetary costs and benefits of delivering a RHI support scheme and increasing renewable heat levels to 10% by 2020, in particular but not limited to;**
 - Potential development of the renewable heat industry and 'green jobs'.
 - Carbon savings.
 - Impact that a renewable heat incentive may have on alternative industries e.g. oil/gas
- **Calculate net present values and assess uncertainty, to include;**
 - A summary of all the cost information required above.
 - Sensitivity analysis of key assumptions.
- **Make recommendations, based on the evidence gathered and the economic analysis carried out, on the most cost effective structure of a Northern Ireland RHI to increase the level of renewable heat to 10%.**

Project Management and Timetable

10. The Project will be managed by DETI Sustainable Energy Branch in conjunction with DETI Economics Branch and the consultant will be asked

to liaise closely and submit regular reports (frequency of written reports and meetings to be agreed) to enable the review of progress.

11. It is anticipated that the successful service provider consultant will be available to commence work **w/c 13 December 2010** and provide a draft report by **18 February 2011**, with a final report available by **28 February 2011**.

Project Output

12. Draft and final reports to be available electronically and in hard copy (4 hard copies of the final report required).

Monitoring and Evaluation

13. The economic appraisal will be monitored by Sustainable Energy Branch in conjunction with DETI economics branch. The project will be evaluated within 3 months of completion.

Project Funding and Payment

14. The economic appraisal will be funded from the EU Competitiveness Programme and as such the final report will have to meet the publicity requirements of the programme.
15. Payment will be made in full, on satisfactory completion, production and acceptance by DETI, of the work undertaken.

Intellectual property

16. Any tender received by the Department shall remain the intellectual property of the tenderer. Once commissioned, however, all documents/results will become the property of the Department to be used as the Department see fit.

Additional Information

17. A short bibliography has been provided at **Annex B** to enable consultants to familiarise themselves with the issues and existing research/studies, but it is expected that the consultants will draw on a wider bibliography in relation to heat, renewable heat and methods of incentivisation.

Equality considerations

18. DETI is committed to achieving a successful economy in Northern Ireland which will provide equal opportunities for all. To this end, Section 75 of the Northern Ireland Act 1998 sets out a number of obligations relating to the nine 'Section 75' categories as follows:-
 - Religious belief;
 - Political opinion;
 - Racial group;
 - Gender;
 - Marital status;
 - Age;
 - Persons with disability
 - Persons with dependents; and
 - Sexual orientation.
19. DETI as a recognised public authority has an obligation under Section 75 as detailed in its Equality Scheme which can be accessed on the Department's website at [www.detini.gov.uk/Equality scheme](http://www.detini.gov.uk/Equality%20scheme) .
20. The study must therefore consider equality aspects relating to the nine 'Section 75' categories by considering available data, identifying any adverse impacts that may be present and proposing alternative

measures/policies which might better achieve the promotion of equality of opportunity.

21. The evaluation must also consider the accessibility of the Strategy for all in line with the Disability Discrimination Act 1995.

Annex A

Great Britain Renewable Heat Incentive (RHI)

The Department of Energy and Climate Change (DECC) published a consultation in February 2010 detailing plans to implement a Renewable Heat Incentive (RHI) in Great Britain from April 2011. This incentive will be open to individuals, community groups and businesses and is intended to increase the uptake of technologies such as air source and ground source heat pumps, biomass boilers, solar thermal etc.

The RHI is intended to lead to a significant increase in the level of renewable heat at the domestic, commercial and industrial scale and it is estimated that this could save up to 60 million tonnes of carbon (MtCO₂) by 2020. The RHI will operate across England, Scotland and Wales, bridging the financial gap between the cost of conventional and renewable heat systems at all scales.

The key features of the RHI, as it stands, are as follows;

- The scheme should support a range of technologies, including air, water and ground-source heat pumps (and other geothermal energy), solar thermal, biomass boilers, renewable combined heat and power, use of biogas and bioliquids and the injection of biomethane into the natural gas grid.
- RHI payments to be claimed by, and paid to, the owner of the equipment.
- In small and medium-sized installations, both installers and equipment to be certified under the Microgeneration Certification Scheme (MCS) or equivalent standard.

- Payments will be paid over a number of years; annually for installations below 45 kW and quarterly for those above this level; subject to conditions such as continuing to operate and maintain the equipment.
- Tariff levels have been calculated to bridge the financial gap between the cost of conventional and renewable heat systems at all scales, with additional compensation for certain technologies for an element of the non-financial cost (e.g. the inconvenience of digging up a garden to install a ground-source heat pump). Tariff levels are proposed to provide a rate of return of 12% on the additional capital cost of renewables, with a lower rate of return of 6% given to solar thermal.
- Payments to be calculated on the annual amount of heat output, expressed in kilowatt hours (kWh). At the small and medium scale, the amount of heat generated by the equipment is proposed to be estimated (or “deemed”) when installed in most cases.
- For large installations and process-heating, heat output will be metered, and the total annual support calculated from the actual energy generated, multiplied by the tariff level.
- The RHI will remain open to new projects until at least 2020. Its design and tariff levels will be reviewed from time to time for new projects, so as to adapt to changes in technology costs and other circumstances.
- Installations completed after 15 July 2009, but before the start of the RHI, will benefit from the scheme as if they had been installed on the date of its introduction.
- Ofgem will administer the RHI, making incentive payments to recipients and taking responsibility for auditing and enforcing the scheme.

- The Energy Act 2008 provides the statutory powers for a renewable heat incentive scheme to be introduced across England, Wales and Scotland. The detailed legal framework will be set out in secondary legislation.
- Further information, including a full list of tariffs for the RHI, can be found at <http://www.decc.gov.uk/en/content/cms/consultations/rhi/rhi.aspx>

Annex B

Bibliography

- The Strategic Energy Framework for Northern Ireland 2010
<http://www.detini.gov.uk>
- An Assessment of the Potential Development of Renewable Heat in Northern Ireland: <http://www.detini.gov.uk>
- Renewable Heat Incentive: Consultation on the proposed RHI financial support scheme
http://www.decc.gov.uk/assets/decc/Consultations/RHI/1_20100204094844_e_@@_ConsultationonRenewableHeatIncentive.pdf
- The UK Renewable Energy Strategy (July 2009)
http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/res/res.aspx
- The UK Supply Curve for Renewable Heat, a study for the Department of Energy and Climate Change (July 2009)
http://www.nera.com/image/PUB_Renewable_Heat_July2009.pdf
- Directive 2009/28/EC of the European Parliament and of the Council (23 April 2009) on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF>
- The Consultation on a Bioenergy Action Plan for Northern Ireland 2009-2014
<http://www.detini.gov.uk/cgi-bin/downdoc?id=4672>