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Subject: HP TRIM Records
Date: 23 July 2015 10:46:30
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Shane,

Last week we discussed the analysis I was doing in relation to the RHI. I have subsequently talked with Cheryl regarding previous analysis of GVA associated with job creation in other studies.

Stuart has asked me to send you this note on the analysis together with the associated spreadsheet.

Happy to discuss

Alan

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Record Number:DT1/15/0122098
Title:RHI – Value for money assessment

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Record Number:DT1/15/0122099
Title:RHI NPV analysis

Renewable Heat Incentive – Value for money assessment

A cost benefit analysis of the renewable heat incentive was undertaken in the original business case for the scheme by the consultants CEPA and AEA. They developed an economic model which assessed the expected uptake of renewable heat together with the displacement of oil and gas that this implied. Carbon and oil savings were calculated with carbon savings being monetised.

The analysis found that the NPV for the scheme was £-242m assessed against a do nothing approach.

CEPA and Ricardo AEA also undertook an assessment of the development of Phase II of the Renewable Heat Incentive. Quantifiable benefits identified again related to carbon emissions which were valued using DECC's methodology. Quantifiable costs are made up of the subsidy payments plus an allowance for administration costs. The consultants' conclusion was that none of the options had a positive NPV purely on a quantitative basis. They did conclude that the net effect of renewable heat on employment would be positive but did not attempt to quantify this. While concluding that the costs appear to outweigh the benefits for all options they calculated the cost-effectiveness of the options. It was concluded that the seven year tariff was the most cost-effective option and this was carried forward into the scheme adopted by DETI.

Cost Benefit analysis of ongoing scheme for six months since March 2015

We have calculated the costs and benefits of the scheme since March 2015. The costs of the scheme relate to the actual payments made or anticipated to be made for the projects assisted. The benefits relate to the carbon savings using the DECC methodology as before. For the first time we have attempted to quantify the employment benefits.

Estimated annual RHI payments have been calculated by taking the estimated monthly payment for each individual application and factoring up to an annual basis. Three months of actual data was used. This was doubled to estimate the costs of running the scheme for the applicants in the six month period March – September 2015. Total annual costs, or DETI payments, for the six months tranche of applicants is estimated to be £7.64m. These annual costs are forecast to be paid for 20 years.

The benefits of the carbon savings were calculated using DECC's central forecast of carbon values for appraisal in the non-traded sector. These carbon values were applied to the total estimated tonnes of carbon equivalent saved by the RHI to get an annual cost saving.

Taking the costs and carbon benefits would result in the scheme for the six months of applications having a net present cost of £56.79m.

The previous consultants' studies did mention positive employment benefits but did not attempt to quantify them. In a separate piece of analysis for DETI in relation to the costs and benefits of the Executive's 40% renewable electricity target, consultants Ricardo AEA estimated the job-years created by different renewable technologies and the gross value added to the NI economy that this

employment would bring. We have used the same methodology to estimate the benefits of the RHI scheme to NI.

Using the estimate of 74.5 job-years per MW of biomass installed and an average GVA per job of £51,092, it is estimated that the six month tranche RHI results in an annual benefit of £5.44m¹

The overall NPV of the six months tranche of RHI support, taking into account the subsidy costs together with the environmental and employment benefits is £2m. This is shown in the following table:

	Total 20 years (£m)
Cost of RHI for projects Apr Sept	-£160.53
Carbon reduction benefits (£)	£53.95
Net	-£106.58
NPV (£m)	-£56.79
Estimated Jobs GVA (£)	£114.17
Net	£7.59
NPV (£m)	£2.02

Conclusions

Previous studies have shown that the RHI has a net present cost to the economy and the most cost-effective tariff scheme was chosen to attempt to meet the target for renewable heat delivered. The analysis for the six months tranche of assistance also shows a negative NPV. However when the employment benefits are quantified the CBA becomes marginally positive. It should be noted that the estimate of employment benefits is very much reliant on assumptions taken with regard to the Northern Ireland electricity sector and further analysis would be needed to confirm these assumptions for the heat sector. Care should therefore be taken in quantifying the employment benefits however because of this degree of uncertainty and whether additionality of jobs has been fully tested. Nevertheless it can be concluded that the job creation will be positive to the economy and has the potential of making the RHI scheme positive as a whole.

¹ Source of figures: 'Ricardo AEA review of the Costs and Benefits of the Northern Ireland Executive's 40% Renewable Electricity Target'- Report for DETI, May 2015. With 74.5 job-years per MW, biomass is one of the highest energy employers. For example, Solar PV is estimated to create 16.7 job-years per MW. The higher biomass jobs figure is likely to be explained by ongoing cultivation of fuel and greater O&M needs. Ricardo has calculated the GVA figures as a weighted average of employment type associated with renewables based on economic data published by NISRA. As a sense check GVA figures used in analysis by DETI economics branch fall within Ricardo's range and imply that Ricardo's GVA figures may be conservative.