Appendix 2

Extract from Cambridge District Heat – Financial Feasibility Study

Ernst & Young

31st August 2012

2. Executive summary

Background and project definition

The Low Carbon Development Initiative ("LCDI") in conjunction with local authority partners and the European Regional Development Fund ("ERDF") are reviewing a number of options to accelerate low carbon energy infrastructure in the East of England. One option is the provision of a gas fired CHP / district heating infrastructure project in Cambridge (the "Project").

LCDI, with support from AECOM (who are acting as technical advisors), has developed two heat demand build out scenarios shown below.

- **The Base Case** (or option 1 per AECOM's report) considers heat loads from council, university and private buildings in the eastern area and the higher density western area with an energy centre located in the city centre.
- **The Variant Case** (not provided in the AECOM report) is the same as the Base Case except it has its energy centre located in west Cambridge where it would be able to connect to additional heat loads.

The primary stakeholder and potential investor is Cambridge City Council ("Council"). The University of Cambridge ("University") is also a key stakeholder and is interested in investing in the Project. Anglia Ruskin University ("ARU") and Cambridge University Colleges ("Colleges") are also stakeholders although they have indicated that they would be customers and not investors.

Heat and power offtake

A significant strength of this Project is that the majority of heat and power offtake is from the Council and University. If a Council / University joint venture ("JV") approach is taken there will be comfort as the investors will be guaranteeing a large proportion of their own heat and power demand. If either party is not in an ownership role then a long term Heat Purchase Agreement ("HPA") and Power Purchase Agreement ("PPA") will need to be agreed.

Commercial structures

This report assesses the financial viability and potential business model for the Base Case and Variant Case. Three core commercial structures (listed below) are assessed from a financial perspective, a flexibility and control perspective and a risk transfer perspective.

1. 100% council owned project
2. 100% private owned project
3. Council / University Joint Venture

Model output and returns

The below table shows revenues and costs as well as the internal rate of return ("IRR").

The Base Case scenario has a greater IRR than the Variant Case scenario. This is largely due to the fact that the additional capital expenditure of £25.3m required to locate the energy centre in west Cambridge does not result in a comparative increase in heat and electricity revenue from new customers connected.

Output	Base Case	Variant Case
Total electricity revenue over life of Project	£161.7m	£260.5m
Total heat revenue over life of Project	£109.1m	£179.6m
Total carbon price revenue	£2.2m	£3.9m
Total fuel costs over life of Project	£161.5m	£263.7m
Total other operating costs over life of Project	£26.3m	£42.9m
Pre-tax project IRR	6.8%	5.2%
Post-tax project IRR	5.3%	3.9%

Source: EY analysis

This report uses project IRR to assess the financial viability of the Base Case and Variant Case. An alternative way of assessing the financial viability would be to consider the power and heat price savings the Council (and University) could achieve. This approach works best where the interests of the investors are aligned, but is likely to be more complicated if a private sector investor was involved as a JV partner.

Conclusions

Financial modelling has shown that the Project is capable of delivering a pre-tax IRR of 6.8% and 5.2% over its 30 year life (under the Base Case and Variant Case respectively).

The level of IRR, given the project risks, is considered too low for private sector investment (who would typically expect a post-tax return in excess of 10-12%). However, the Base Case and Variant Case returns are above the Council's pre-tax hurdle rate of 4-5%, suggesting that both scenarios would be financially attractive to the Council. The Council could either fund the Project 100% or become a joint venture partner.

This report identifies the University as a possible joint venture partner. The Base Case return is just above the University's pre-tax hurdle rate of 6-8%, although the Variant Case return is below the hurdle rate. However, it is possible that the Base Case and Variant Case returns could be improved through future expansion opportunities (connecting other parts of Cambridge) and via introducing a debt instrument, such as a shareholder loan (to help accelerate the repatriation of dividends from the Project).

Next steps

This feasibility report has shown a strong case for developing the Project, however, it has also identified areas where further work is required. It is therefore recommended that a business case be commissioned, which would look at the Project in greater detail and enable a decision to be made on whether to commission the Project. Section 8.2 of this report contains a list of recommended work to be performed at business case.

District Heating Network Option 1, AECOM report