

Tender Brief: Feasibility of Biomass District Heating Schemes in a retrofit situation and in particular Hallhill Steading, Dunbar

Community Energy Scotland has been approached by several community groups hoping to take forward biomass district heating schemes in a number of household retrofit situations, one of which is Sustaining Dunbar who wants to look at developing a Biomass District Heating scheme which will supply approx 15 properties at Hallhill Steading, Dunbar.

This tender brief has essentially 2 elements to it:

- 1) The feasibility for Sustaining Dunbar to install a biomass district heating system at Hallhill Steadings.
- 2) Appraisal of biomass district heating schemes in a retrofit situation which will provide Community Energy Scotland and forthcoming community groups with information that can be used to appraise the viability of potential biomass district heating schemes in other similar situations.

Hallhill Steadings

This is a set of converted steading buildings based around a central courtyard (see attached plan). At present the properties are heated by storage heaters on an off-peak tariff. It is anticipated that the boiler and heat main would be installed by a Community owned Heat and Power company with the residents paying for the heat they use and the costs of installing a wet central heating circuit in their own home.

The required outcomes of the feasibility study are;

1. Design and costing of installation

- Sizing of system to supply the number of properties present, with capital cost of boiler, heat meter and feed system components.
- Breakdown of works and associated costs required to house the boiler and wood store.
- Existing outbuildings neighbouring the properties, currently occupied as garages have been identified as a potential site for housing the boiler and wood store.
- Breakdown of works involved and costs associated with the ground works to install the heat main running from the boiler to each of the properties.
- Estimated timescale to complete all works external to the individual properties.
- Guidance to householders on estimated costs of installing wet heating system in resident's properties.
- Identification of sources of grant funding and their requirements for eligibility.

2. To evaluate the economics of a ESCO supplying heat to the Hallhill Steadings

- Sources and supply route for wood-chips. Potential for using local sources. Would Dunbar Community Woodland be able to provide the required tonnage per year?
- Estimation of annual maintenance regime and costs involved.
- Predicted unit cost of supplied energy to the householder.

- Predicted cost of heat production per unit to the community company.
- Financial projections, profit/loss and cash flow for the community company.
- A funding options appraisal, including CES/ CCF/ bank loan/ grant combinations.
- Analysis of potential disruption to enjoyment of local environment due to operation of boiler in terms of noise / smoke nuisance, deliveries, etc.
- To appraise the different methods of customer payments for energy (e.g card payments)
- Identification of risks

Appraise the feasibility of biomass district heating schemes for pre-existing homes

Community Energy Scotland assists, non-profit distributing community organisations within Scotland to install and develop renewable energy projects to benefit their communities. Interest has grown amongst community groups in operating as a biomass heat supply company which will provide heat to local homeowners whilst reducing the Carbon footprint of their communities and generating an income for wider community benefit.

The second piece of work to be commissioned within this feasibility study is to produce basic information which will allow community groups to carry out an initial appraisal of possible retrofit biomass district heating schemes and enable them to either take their project forward with confidence or enable them to discard the project based on viability.

Critical success factors in determining the suitability of a number of houses in a retrofit biomass district heating scheme should be determined for different scales of development and approximate costs per unit of heat should be given for the system to be viable. The following scales of development ought to be considered:

- <10 housing units
- 10- 30 housing units
- 30 – 100 housing units
- >100 houses

This piece of work should explore the following issues:

- Heat demand, distances (and costs) of pipe runs, requirements for storage, plant, access existing infrastructure and system size.
- Indicative model for economic sustainability including typical economies of scale and factors affecting these.
- Level of commitment from customers and infrastructure / distribution requirements on communal land and for individual customers
- Planning considerations and legislation (i.e. possible renewable heat incentives and the effect of these)
- Approximate timescales for development

- Different options for charging for heat.
- Flexibility of biomass DHS in terms of responding to fluctuating demand
- Ongoing management and maintenance requirements.

The consultancy will be managed by Sustaining Dunbar, a community organisation with charitable status. The nominated contact person is Phillip Revell, Project Coordinator, Sustaining Dunbar, 16 Westport, Dunbar EH42 1BU (Tel: 01368 866920, Email: philip@sustainingdunbar.org).

Time scale: *(to be negotiated)*

Beginning February 2010: Study commences

End March 2010: Presentation of first draft report

End April 2010: Final report submitted

Budget:

Sustaining Dunbar is a not for profit community organisation, working within tight budgetary constraints. The foundation have a limited budget for this project and request applicants for the consultancy work bear this in mind when costing the project, whilst delivering a high quality report. It is expected quotes will be in the region of £10,000.

Proposed consultants:

The consultant should have a good general understanding of renewable energy, an awareness of the Community issues involved, and particular expertise in biomass district heating schemes.

Proposal documents:

The proposal should provide details of relevant company experience, the competency of the consultant to undertake the tasks, and also outline the curricula vitae of the personnel to be involved in the study.

You are asked to submit your response to this brief to Sustaining Dunbar by Friday 5th February 2010 and it should include the following:

- Methodologies to be employed in the study
- The cost of conducting the study, indicating fees and expenses (ex-VAT), against the person-days input from each team member.
- A study timetable.

