

## **Appendix 2 – Example costs for renewable energy project**

### **1. Installing biomass boilers**

Biomass is a renewable, low carbon fuel that is already widely available throughout the UK. Correctly managed, biomass is a sustainable fuel that can deliver a significant reduction in net carbon emissions when compared with fossil fuels. The primary focus when installing a biomass boiler should be the replacement of sites using fuel oil, and sites with large consumption of gas. One proposal could be for a biomass boiler to replace the current gas CHP in the Council's Salt Ayre leisure centre. If we assume a 650 kw boiler for the leisure centre, this could have a capital cost of £400,000 to £450,000. However, the combined savings on fuel costs and income generated through the Renewable Heat Incentive (RHI) could see a payback of 7 years. The RHI would apply for 20 years. Consultancy costs to investigate these proposals further would be approximately £7,000-10,000.

### **2. Develop a biomass supply chain**

The development of a biomass supply chain would ensure that a processing depot is closer to the biomass boilers than external suppliers can be so reducing haulage costs. The depot would secure lower cost feedstock if it can obtain wood from Councils own woodlands (and other such low cost sources). It can also underpin woodland management and provide a use for vacant land as well as stabilizing the long term costs of energy and creating local jobs.

Developing a site to process biomass would require investment in new infrastructure including a wood fuel shed and drying floor, weighbridge and handlers and loaders, with cost being approximately £292,500. The annual running costs (including feedstock, delivery, staff, etc) would be approximate £198,521 but would deliver 8,395/MWhs of wood chips to the silos. That means the unit cost of fuel becomes £23.68/MWh. (unit costs fall with higher output). This compares to the £33/MWh price that is assumed to be the open market cost. Therefore in year 1 the surplus could amount to £78,514 and payback on the £292,200 investment could be within 4 years. Consultancy costs to investigate these proposals further would be approximately £13,000.

### **3. Develop a solar farm**

A 5MW capacity system would require a 25-30 acre site and there would be no costs if the land is already in the council's ownership. Costs are approximately £1000 per kW or £1million per MW installed. The cost for a 5MW project would therefore be approximately £5million. The cost of grid connection would be approximately £250,000 and planning permission and consultancy costs of approximately £50,000. The total installed cost would therefore be approximately £5,300,000.

Lancashire would expect 850 kwh per kw peak (depending on site) so a 5 MW capacity should produce 4250 MWh of electricity on average. Using either the the Renewable Obligation Certificate (ROC) or Feed-in Tariff financial mechanisms, the system would ensure £488,750 pa. The system would therefore payback in approximately 10 years. Consultancy costs to investigate these proposals further would be approximately £20,000.

#### **4. Partnership Project**

A potential joint venture with a private sector partner to develop Council owned land could include a large-scale solar farm or a wind energy project (over 5 MW). In both examples, the Council would find it a challenge to develop such large-scale sites on its own. However, if it were to contribute the land to a deal and the contractor the expertise to construct the facility and organise the grid connection, this might be advantageous.

The reason for this is that such a facility could then be provided much more swiftly – probably within 12 months for solar PV (longer for wind) – and it would provide a good precedent to justify further investment in renewables by the Council, possibly on its own.

It is not possible to quote for the time or work required to deliver a joint venture of this type, as this will depend on the technology, the parties involved and so on. However, consultancy costs to investigate these proposals further would be approximately £5,000.