

COMMUNITY PLANNING PARTNERSHIP MEETING

4 Schools Project upgrade works

Biomass installations are designed with a top up and back facility in order to meet two criteria of building insurance and plant performance.

The Council's insurers Zurich require that biomass installations have a back-up provided to protect the building fabric should the biomass boiler break down. If the heating system is not working and there were a frost that caused multiple pipe work breaks this would damage the fabric of the building leading to high repair costs. Operationally there would be a risk that the repair work could close part or all of a school requiring additional arrangements to be put in place, potentially disrupting pupil education.

Biomass boilers work most efficiently when operating near their design capacity, therefore boilers are designed to operate below the peak load of the building. When the heat demand is above the biomass boiler capacity a top up heat is provided by a second boiler using the most efficient energy source, which is normally gas. During the summer months where heat demand is low and heat may only be required for domestic hot water, it is more efficient to provide this through the top up system rather than the biomass boiler which is less efficient in these circumstances.

The Renewable Heat Initiative (RHS) funding is set at a level where the subsidy reduces where the system is above 200Kw, therefore most medium sized installations are designed around a boiler capacity of 199Kw to maximise the subsidy.

The cost of a gas boiler to provide backup and top up for a Primary School is around £30k in the context of a typical biomass installation cost of £350k.

The 4 schools heating option appraisals were carried out based on net present value (NPV) over a 20 year period. This approach was taken to Committee by Education and approved as the method for evaluating any boiler replacement in a school. It should be noted that the 4 schools project had a fixed budget and therefore there was not the same scope simply to deliver an aspirational heating option but one that had to be affordable.

A report on heating systems was completed for Millbank to identify the potential costs of using biomass as well as a backup heating option for the 4 schools. The NPV for biomass was £428,515 and for gas £282,127. In light of these costs, Education selected gas as their preferred option. The outcome of this appraisal has altered recently with the reduction in the Renewable Heat Initiative and the falling cost of gas resulting in a more favourable outcome of gas.

There is a perception that having back up or top up with a second boiler is adding to the cost of the biomass, however this is not the case.

Following on from the Energy Consultants Report we have discussed with Education the use of Marginal Abatement Costs which plot £NPV/tonne CO₂ against annual

tCO₂ savings as a method of having a Carbon element to the evaluation of boiler replacements. They have agreed to trial the use of this on the next option appraisals we may have for boiler replacements at schools.

We have 4 option appraisals programmed for the current year.