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Subject: Costs relating to conversion from oil to biomass
Date: 26 May 2016 12:23:51
Attachments: [Costs associated with conversion from oil to biomass fuel - May 2016.DOCX](#)
Importance: High

Seamus hopefully this covers your requirements.

Cathal

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Costs associated with conversion to biomass vs. oil

Oil has traditionally been used for heating domestic properties and commercial buildings with an element of accommodation e.g. leisure centres, nursing homes, offices, hotels, factories etc and within the agri-food sector particularly for heating mushroom growing houses, glasshouses and heating for dairy unit wash water. (Poultry units have traditionally used LPG as the main source of fuel for heating).

When the cost of oil was at its height (February 2013 @ 65.3p/litre) there was a move towards conversion to biomass with wood chip around £90 per tonne and wood pellets around £165 per Tonne delivered. (Oil = 6.1p/kWh, Chip = 2.6p/kWh and Pellets = 3.4p/kWh). From October 2014 the price of oil began to fall. Currently May 2016 the situation is Oil = 2.8p/kWh, Chip = 3.1p/kWh and Pellet 3.1p/kWh (lowest available).

Currently the cost of fuel is on a par and would not encourage conversion to biomass, due to the additional costs associated with a biomass installation:

	120kW Oil boiler*	99kW Wood Pellet
Purchase Cost	Up to £3,000	Around £30,000
Average Running Cost	2.85p/kWh	4.81p/kWh
Boiler Maintenance Cost	0.04p/kWh	0.25p/kWh
Remedial repairs	negligible	0.10p/kWh

*Biomass boilers would normally be around 20% lower capacity than the oil boiler they replace due to nature of operation e.g. buffer tanks.

The difference in maintenance costs between oil and biomass is significant. An oil boiler will generally require one service per year whilst a biomass boiler will require up to four services per year based on running hours. Average cost for an oil boiler service is around £200 per year, average service cost for biomass is £1200 per year. A biomass boiler also has a significant number of moving parts (and also electronic components) which will need replacing much as you would with a car.

CAFRE experience

The CAFRE estate has three wood chip and five wood pellet boilers.

Wood Chip

Boilers were installed during 2007 (150kW) 2008 (320kW) and 2010 (300kW). After years running all boilers have required extensive remedial work, including the replacement of motors, gearboxes, augers and electronic components. Some of these repairs can be related to issues with the quality of wood chip either in relation to moisture content (too high) or quality i.e. quantity of fines or oversized particles, the remainder natural wear and tear. The cost of these repairs has run into thousands of pounds over the last four years.

Wood pellet

Boilers were installed during 2009 and 2015. Maintenance costs on the pellet boilers have been lower. The one long-term pellet boiler has given fewer problems than the chip boilers although a number of components required replacement after four years (ember bed, grate, outer ring and hood) increasing running costs.

It will be interesting to see the long-term performance of the boilers installed during 2015 in terms of maintenance and remedial work – have improvements been made over the five years since our previous boiler was installed during 2010.

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