



Cathkin Braes Golf Club: Solar and Biomass Energy

INTRODUCTION: Cathkin Braes Golf Club, founded in 1888, and later redesigned by the acclaimed James Braid, is the oldest golf course in Glasgow and the second oldest golf club in the Clyde Valley. The Course is located 5 miles to the south side of the city centre and sits 600 feet above Glasgow, resulting in some stunning panoramic views over the Campsie and the Arran Hills and the Southern Scottish Highlands.

THE CHALLENGE

Like most clubhouses, energy costs have risen dramatically in recent years. The facility was supplied with mains electricity and gas for lighting and appliances and a heating system fuelled by heating oil.

The annual budget cost for clubhouse energy was: Oil £15.5k, Gas £3.4k, Electricity £19.0k and maintenance £2.1k - Total £ 40.0k per year.

The club realised that:

- Clubhouse operating costs needed to be reduced
- The boilers were less than 60% efficient as they were over 40 years old and needed replacement
- The energy market was volatile with costs increasing
- They could benefit from government Renewable Heat Incentive scheme (RHI)
- They could reduce their carbon footprint

THE SOLUTION

Cathkin Braes, like all clubs, want to generate value for money for their membership fee and in 2013, the committee proposed the implementation of an energy management project for the long-term. The first stage to reducing overheads was to have a good understanding of current baseline resource usage through an energy audit and they implemented energy efficiency measures across the facility. This included a review of insulation in roofs and walls, lighting, double glazing and heating timers.

AT A GLANCE...

>> In 2013 the club installed solar thermal panels to heat water for the kitchen and showers. A wood pellet biomass boiler was then installed to supply energy for the central heating system.

>> The project cost £120k and annual savings including RHI will be approx. £19.45k.

>> The investment will be paid back within 7 years and the club's savings will continue into the future.

The club decided that alternative and renewable sources of energy to replace the current oil boiler and a renewal of heat generating facilities with associated control systems would not only be cheaper in the long run but would help reduce the clubs' impact on the environment and overall sustainable credentials. Some options were considered and discounted such as LPG boilers (as main energy source), new oil boilers and various other new technologies which were found to be radical, not proven or not suitable.

The club used M&S Contracts Ltd. a local Glasgow company to advise them and it was decided to go with Solar Thermal panels and a new biomass boiler to make the most of the Government Renewable Heat Incentive (RHI).

Solar Thermal Panels

The club installed 10m² of Solar Thermal Panels on a south facing part of the clubhouse roof to heat domestic hot water. The panels were not visually intrusive and were easy to install. Solar thermal is a technology that uses the power of the sun to heat water. Unlike solar Photo Voltaic systems which generate electricity, solar thermal systems only require daylight to operate and properly installed systems work all year round, even when it's cloudy.

Biomass energy

The clubhouse heating system was a large proportion of the club energy expenditure. To make a larger impact on its electricity costs the club sought a further renewable energy solution. In 2013 they appointed Hawthorn Boyle as their heating consultants and they installed 2 new 36kW wood pellet boilers from UK based Grant Engineering linked to a large, new hot water holding tank that supplied the existing space heating and hot water systems.

Wood pellets are delivered every month by tanker and the system automatically feeds into the burner when necessary. All of this is housed in a new extension outbuilding adjacent to the clubhouse which is in keeping with the architecture of the building and not visually intrusive.



Solar panels on clubhouse roof



New biomass boiler in extension



Wood pellets



OUTCOMES

Costs

Biomass boiler system installation	£ 96k
Clubhouse heating system modifications	£ 7.2k
Solar Panel system installation	£ 11.4k
Kitchen emersion heater modifications	£ 3.0k
Contingencies	£ 2.4k

Total **£ 120k**

Savings (over 20 years)

RHI incentive	£ 158.5k
Fuel savings (inc. cost of Biomass wood £9.0k pa)	£ 230.5k

Total **£ 389k (19.45k savings per year min)**

Payback period of investment **approx. 6.2 years**

WHAT THE CLUB SAID

“What may have seemed like a huge capital outlay will be paid back in just over six years, but with the incentive payments set to last for 20 years and the energy savings forever, the Club will continue to benefit well into the future.

The Club is confident it has made a wise investment and demonstrates that golf clubs can be managed sustainably providing excellent value for money for members and visitors.”

FIND OUT MORE

If your club would like to promote its business success story or require support in this area, please contact your Club Development Officer or Environment Manager Carolyn Hedley: c.hedley@scottishgolf.org

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