Case Study: Environment

Glencorse Golf Club: Biomass Energy Project

INTRODUCTION: Glencorse Golf Club is a long established Scottish parkland course near Penicuik on the outskirts of Edinburgh. The club has recently introduced a significant business change programme through modernising the club's management and business structure. They have continued to invest in club infrastructure including the addition of new green keeping facilities to ensure a safe working environment for all their employees.

THE ISSUE

In September 2014, as part of the club's business improvement programme, the multiple gas heating systems were judged to be 'not fit for purpose' being more than forty years old and around 40% efficient thus subject to potential breakdown. It was decided that the club's next financial priority would be the upgrade or replacement of these gas systems to guarantee the club's future heating and hot water requirements for a minimum of the next twenty years.

THE SOLUTION

A gas system upgrade was considered but would have cost the club in excess of £35k. Research was undertaken into alternative renewable heating systems which would reduce the club's energy bills and CO2 emissions together with attracting government financial support through the Renewable Heat Incentive (RHI).

A subcommittee was formed to investigate the efficacy and cost benefits of such systems and to invite tenders. Initially offers to tender were sent out to five specialist biomass companies including three registered with the Carbon Trust.

The club approached a Sustainability Consultant to examine the tenders in detail as there was a wide range of prices quoted, sizes of boiler recommended, groundwork requirements and boiler housing arrangements. A further contractor EcoBiomass was then approached to tender to meet the club's requirements better and a similar size installation visited.

IMPLEMENTATION

EcoBiomass, a company based in Dundee, were finally appointed and installation was completed and accredited in Jan 2015.
Key details of the solution installed were:

- Single 90kW ETA Hack P boiler (an industry recognised leading quality product) housed internally in a storeroom and all pipe work would be routed within the structure of the building without need for alterations.
- An external pellet store faced off by wood cladding would be sympathetic to the structure of our building with a minimal external footprint and with easy access for the delivery of fuel.
- System would be sufficient for the total heating and hot water requirements of the whole building including the kitchen and club stewards flat.

AT A GLANCE...

>> Glencorse Golf Club is a successful private members club, who wish to reduce their long term energy costs.

>> In 2015 the Club installed a biomass boiler to replace their inefficient gas boiler. This uses wood pellets and provides the total heating and hot water needs of the clubhouse.

>> The system cost £65k to install and will be paid back in 7 years. Cost savings after wood fuel and loan costs, with RHI payments included will save the club >£203k over the next 20 years.

>>The biomass system is carbon neutral, reducing the club's carbon footprint and impact on the environment.

SCOTTISH GOLF

- A Wi-Fi connection for remote monitoring and adjustment of the system's performance if required.
- A maintenance contract for £500 P.A., the same price as the current gas maintenance contract.
- System 'Accreditation' for RHI was undertaken by a third party specialist, employed by EcoBiomass and the cost included.
- There is a very small amount of waste and the boiler self-cleaning system provided low level maintenance.
- Noise levels within the system, feeding pellets into the boiler, are minimal and not intrusive.
- All pipes used were carbon steel and were crimped and heavily insulated.
- There is a simple to read metering system, which is used to report directly to Ofgem.

IMPACTS

The capital cost of the boiler etc. inclusive of the maintenance contract was £65,536.00. ex VAT. The loan will be paid off in 7 years.

In cash flow terms over 20 years the net gain to the club will be £203,252.00 provided gas stays at today's price. Currently the club enjoys a commercial discounted rate.

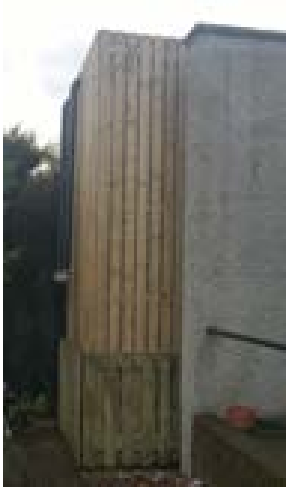
The European fuel pellet industry is very sophisticated with harvesting and planting a continuous cycle. As such the fuel is sustainable and unlikely to suffer the cost increases of unsustainable fossil fuels.

The figures are as follows:	
Gas 20 year Fuel cost:	£240,000
+ Maintenance	£10,000
Total	£250,000
Biomass 20 year Fuel cost:	£154,350
+ Maintenance	£10,000
Total	£164,350
20 year cost saving:	£ 85,650
20 year RHI Payment:	£194,038
Less 7 year loan payment:	£ 76,436
20 year net gain to club:	£ 203,252

WHAT THE CLUB SAID

"Not all the companies that tendered had a full understanding of the RHI scheme and many gave inflated estimates that did not address the club's needs. This led to significant problems"

"Our experience indicates, for any golf club, care needs to be taken when appointing a contractor and due diligence of contracts is vital to ensure maximum RHI payments and cost savings"



Biomass boiler container and pellets

FIND OUT MORE

For more detailed information about the biomass heating project at Glencorse please see the full project report at www.glencorsegoflclub.com or contact the club directly to discuss their experiences.

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