



# Crail Golfing Society: Solar and Biomass Energy

**INTRODUCTION:** Crail Golfing Society was founded in 1786 and is the seventh oldest golf club in the world. It has two courses, the Balcomie Links was formally laid out by Tom Morris and officially re-opened in 1895, and Craighead Links, opened in 1998 and designed by Gil Hanse – who designed the course for the 2016 Olympics in Brazil. The Society has a worldwide membership of over 1,400 and attracts almost 10,000 golfing visitors annually.

## THE ISSUE

The Clubhouse dates from 1903, but has been developed to provide extensive golfer changing facilities along with a busy bar and restaurant and an external professional shop. The facility was supplied with mains electricity for lighting and appliances and a heating system fuelled by heating oil.

Like most clubhouse developments, energy costs have risen dramatically in recent years and were costing the club **in excess of £40k per year**. Crail Golfing Society, like all clubs, want to generate value for money for their membership fee and in 2011, started to investigate ways to reduce energy usage and costs.

## THE SOLUTION

To make Crail Golfing Society as sustainable as possible, there is a long term strategy to provide high quality golf courses and facilities, economically for the long-term. The first stage to reducing overheads is to have a good understanding of current baseline resource usage.

### Energy efficiency audit

Following advice from Scottish Golf's former subsidiary the Scottish Golf Environment Group (SGEG), they were encouraged to get a government funded Energy Audit from the Energy Savings Trust to fully understand their current usage and identify potential areas to reduce consumption in existing building materials, heating and lighting.

### Energy efficiency measures

Following the audit the society installed extra insulation in roofs and walls, double glazing and heating timers.

This energy efficiency investment in the region of £12k will significantly help the club reduce their usage and costs. The additional insulation installed in the Maintenance sheds and Greenstaff mess room was an investment of £7k but is estimated to reduce usage by 50% in these areas. The clubhouse will also see significant reductions.

The Society wanted to go a step further and reduce what was paid for the energy. Looking into alternative and renewable sources of energy would not only be cheaper in the long run but would help reduce the clubs' impact on the environment and overall sustainable credentials.

## AT A GLANCE...

>> Following an energy audit

Crail Golfing Society made the clubhouse more energy efficient through insulation, double glazing and heating timers.

>> Solar PV Panels were installed to supplement the electricity for lighting and appliances

>> A biomass boiler was installed to provide heating and hot water.

>> The club invested a total of £133k in the project.

Ave. annual cost savings of £10.5K and RHI government incentive payment of £19k give a total £30k savings per year

## Solar Photovoltaic panels

The club's installed 30m<sup>2</sup> of Solar Photovoltaic panels on a south west facing part of the clubhouse roof to supplement the mains electricity usage for lighting and appliances. The panels were installed by Sunbeam Energy, of Tayport, so the project also supported local Scottish businesses. The panels were not visually intrusive and were easy to install.

The panels cost £3,500 and are estimated to generate 6438 kWh per year, creating a saving of £965. Combined with the 'Feed In Tariff', this equates to a payback period of 4 years.

## Biomass energy

The clubhouse heating system was a large proportion of the club energy expenditure. To make a larger impact on its costs the club sought a further renewable energy solution.

In 2013 they installed a new wood pellet burner from Scotheating linked to a large, new hot water holding tank that supplied the existing heating system. 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. Wood pellets are delivered every month by tanker and the system automatically feeds into the burner when necessary.

The club has also signed up to the Renewable Heat Incentive (RHI), a government incentive where they will get an annual payment of at least £19k for 20 years.

## OUTCOMES

The project was completed in August 2013 and there has since been a big reduction in their energy usage.

Expenditure:	(£k)
Energy Efficiency Audit	0
Efficiency Measures	
(Insulation, Double Glazing, Controls)	12
Solar PV Panels	21
Biomass Boiler	100
<b>Total capital investment:</b>	<b>133</b>

Ave annual energy cost savings after first 2 years of operation

(after cost of wood pellets)	>10.5
Renewable Heat Incentive	>19.5
<b>Total benefit per year</b>	<b>&gt;30</b>

## WHAT THE CLUB SAID

*"As we all know, energy costs are rising fast, so our savings in years to come will continue going up, helping us to reduce future rises in member subscriptions and visitor green fees," said Dr Richard Clifford, Captain of Crail Golfing Society.*

## NEXT STEPS

The Society has reduced its running costs by £30,000 a year, thanks to the combination of the lower energy costs and government incentive payments. What may have seemed like a huge capital outlay will be paid back in just over four years, but with the incentive payments set to last for 20 years and the energy savings forever, the Society will continue to benefit well into the future. The Society 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](mailto:c.hedley@scottishgolf.org)

*This case study was produced with support from*

