

# Ardoch of Gallery

## What's new in renewables?

Ardoch of Gallery  
Climate Change Focus Farm

Notes from the Discussion  
Group Meeting on 15th  
December 2016

*This was the sixth meeting of the Ardoch of Gallery focus farm discussion group, considering practical and profitable ideas to improve the farm business.*

## On farm renewables

We took a practical look at solar, wind and biomass installations at both Haughead and Blackiemuir Farms. Guest speakers Jim Campbell and John Farquhar from SAC Consulting discussed various renewable systems, the Renewable Heat Incentive (RHI) and what's changing in the renewables industry.

### Renewables at Haughead

The group met at Haughead Farm, Laurencekirk by kind permission of N J McWilliam & Co where they were shown the 60kW woodchip boiler used to heat the farmhouse and two cottages. The boiler was installed within an existing farm building with plenty of room to receive bulk chip deliveries. Chip is loaded by telehandler from the floor of the shed into a feed hopper. The boiler is fed from the hopper by auger, operated automatically to meet the requirements of the boiler. A thermal store is included within the shed and the boiler operates as required to maintain the set temperature in the thermal store. Circulation pumps feed hot water from the store to the separate heating circuits serving the farm house and the cottages. Operation of the pumps is controlled by thermostats at each heated building. SAC Consulting's Senior Renewables Consultant, John Farquhar provided an overview of the installation and answered questions from the group on technical aspects of the equipment. Host John McWilliam provided detail on the benefits such as reduced heating costs and income received through the renewable heat incentive (RHI).

The boiler adds to the farm's portfolio of renewable technologies which include a wind turbine and solar panel installation. These reduce the farms energy costs and also provide a diversified income stream from energy sales and incentive payments.



### Key points:

- Careful planning of renewable installations will pay dividends in the long run.
- For financial viability of new schemes more emphasis will be placed on the value obtained from the energy and less on incentive payments.
- Viable schemes will be those at high yielding sites, with low capital costs where on-site usage is high.
- RHI changes favour larger energy users.
- Heat pumps show better potential for small scale heat demands if properly designed.
- AD can still be viable; a consistent eligible heat demand is necessary.
- Digestate drying is no longer eligible.

## Biomass Boiler at Blackiemuir

Blackiemuir Farm has recently installed a 500 kW biomass boiler providing heat to two parallel drying floors for drying grain and wood chip. Heat is fed by underground pipe to a bulb store at the other side of the yard where it will dry bulbs. Heat is distributed by eight heat exchangers suspended from the roof which can be individually controlled to target drying air to specific areas.



## Planning your own on-farm renewables

SAC Consulting's renewable energy team leader, Jim Campbell discussed how new renewables projects were more likely to stand up where the maximum value could be obtained from the energy produced, relying less on incentive payments. Jim showed example projects for comparison under previous and current tariff rates. Under the higher feed-in tariff (FIT) payments, schemes often stood up on the value of the FITs even where all of the energy was exported to the grid. This is now less likely under the reduced payments, with savings on imported energy now playing a much more important role. New projects that are more likely to provide an acceptable return are those;

- At high yielding sites, maximising the revenue that can be obtained from a similar capital cost to a poorer yielding site.
- Sites with low capital cost; i.e. with easy access and a reasonably priced grid connection
- Where a large proportion of the energy produced will be used on site to offset imported electricity

Recent FIT changes mean tariff rates will be reduced every three months, with caps for deployment of new projects per quarter. Some technologies have already hit these caps and projects have been rolled forward, meaning a wait of up to a year for some before entry to the scheme. In future, energy storage equipment will become more viable as commercial mechanisms are put in place to make it easier for private developers to gain a consistent benefit from their deployment. This may improve the viability of renewable projects, allowing income from energy produced in excess of connection capacity or to obtain higher rates by supplying stored power at times of high demand.

## Renewable Heat Incentive (RHI)

John Farquhar shared recent updates and proposed changes to the RHI. With reduced tariffs, small scale biomass systems are less likely to be viable, although medium scale systems still presented an opportunity. The viability of large scale schemes is unchanged but only for high energy users. At a small scale, heat pumps may now offer better potential but the importance of efficient system design is critical to ensure electrical costs are kept low.

Further changes (Spring 2017) remove the banding on biomass installations with a single rate payable on all scales. This should result in schemes being sized more appropriately to meet heat demand at a site but is likely to be viable only for larger energy users. Cost of fuel will be of greater importance and home producers of fuel may be better placed under the revised scheme. AD installations can still be viable even where a proportion of crop is used but ensuring an eligible demand for the heat will be important.

There are nine climate change focus farms in Scotland.

Keep up to date with their activities at

[www.farmingforabetterclimate.org](http://www.farmingforabetterclimate.org)

Find us on Facebook or follow us on Twitter @SACFarm4Climate



Meetings are free to attend and all farmers are welcome.

For Ardoch of Gallery, contact farm facilitator David Ross in the SRUC Stonehaven Office on 01569 762 305 or [david.ross@sac.co.uk](mailto:david.ross@sac.co.uk)

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