

FFBCNews

The Farming for a Better Climate newsletter

May 2011 (No. 2)



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About the Focus Farms

With Scottish Government funding and support from NFUS, SAC are working with four 'climate change focus farmers' to look at ways to benefit the farm business and cut greenhouse gas emissions.

The focus farmers who have kindly volunteered to open their doors to others are:

- David and Morag Houstoun – **Glenkilrie** near Blairgowrie, an upland

beef and sheep unit

- Ross and Lee Paton – **Torr Farm** near Castle Douglas. Brother and sister team with an organic dairy farm in Dumfries and Galloway
- Neil and Linsey Butler - **Stewart Tower**, Stanley, Nr Perth. Dairy farm with some arable cropping alongside a farm shop and ice cream parlour.
- Robert and Jac Neill – recently welcomed to the project to represent arable interests amongst the climate change focus farms. Robert and Jac farm at **Upper Nisbet** near Jedburgh. We will hear more about Upper Nisbet in the next newsletter.

For more information on the project, the focus farmers and key action areas, take a look at www.farmingforabetterclimate.org

Update from Stewart Tower

Stewart Tower is a mixed dairy and arable farm covering 160 ha near Stanley, Perthshire, run by Neil and Linsey Butler.



As one of the climate change focus farms, Neil and Linsey are providing information for visitors to their farm shop and ice cream parlour about steps that both Stewart Tower and other farmers are taking to reduce emissions that contribute to climate change. Visitors will also be invited to attend a family farm walk later in the year to see some of the challenges

farmers have to contend with and some of the things we can do as a sector to help Scotland reach strict emission targets.



Visit Stewart Tower, keep an eye on Farming for a Better Climate events at www.sac.ac.uk/climatechange/farmingforabetterclimate/newsandevents/ or email climatechange@sac.co.uk to be kept informed of the programme of activities.

Energy auditing underway at Torr and Glenkilrie

Although carbon dioxide (CO₂) released from burning fossil fuels is regarded as a relatively small player in terms of agricultural emissions, it's a heavyweight when it comes to potential cash savings. The following outlines some of the energy saving ideas discussed at recent meetings hosted by both Torr and Glenkilrie.

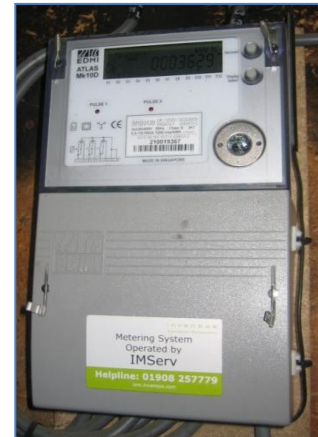
Torr Farm

SAC Engineer Adrian Jones highlighted hidden energy costs in slurry systems. Rainwater in the slurry store often goes unaccounted for, but can significantly add to energy costs. After taking into account pumping, mixing and spreading, once in the store clean rainwater can end up costing you around £0.83/1m³ in terms of energy use alone.

Adrian advised tackling the big things first but cautioned against discounting minor, seemingly insignificant changes; small savings on a daily basis will add up over the year.

Like most dairy units, Torr is a big user of electricity in the milking parlour. As a rule of thumb, 1/3 of a parlour's energy is used for heating, 1/3 for cooling and the remaining 1/3 between vacuum pumping, lighting and ancillary equipment. Ross Paton at Torr said: "We have started to keep an eye on energy and fuel use, especially after this winter where we had to heat the parlour just to stop pipes freezing."

Torr recently had a 'smart meter' installed which records energy use on a half hourly basis, allowing it to be matched with individual tasks.



SAC Consultant Jim Campbell said: "One of the

areas that's been highlighted by the energy audit at Torr is the efficiency of the milk cooling process. Retrofitting a variable speed drive to the existing milk pump could cost in the region of £2,000 but could improve the pre-cool and result in a £300 saving over the year in milk cooling costs. That's a payback within seven years and a saving on CO₂. Efficient operation of existing equipment such as ensuring a suitable flow of water through the plate cooler should always be checked prior to committing investment to new kit".

Checking thermostat settings and improving hot water tank insulation are two quick checks that all dairy farms can make that could lead to instant cost savings for very little time or outlay.

For Torr, investigation into a heat recovery unit is an area that Ross is considering to further cut electricity spend in the dairy and increase energy efficiency.



You can read more about what was discussed at this and other meetings held at Torr at

<http://www.sac.ac.uk/climatechange/farmingforabetterclimate/ccfocusfarms/ccdairy/>

Glenkilrie

As an upland beef and sheep farm, Glenkilrie does not have the same kind of daily energy demands as a dairy, but small changes to the use of lighting and fuel could still make a difference.

Benchmarking at Glenkilrie showed that electricity use was below average when compared with figures from similar units but fuel use was found to be higher than expected; this was mainly due to the size and location of the farm necessitating a fair amount of vehicle use. Jim Campbell said "keeping a note of how much fuel is used for which job could help to identify which activities use a lot of fuel on the farm. You can then look into practical ways to reduce it."

Jim also gave an overview of the scope for renewables at Glenkilrie, highlighting technologies that would and wouldn't be suitable for the farm along with potential costs and payback times. Wind energy was highlighted as a serious possibility for Glenkilrie; Neil Butler from Stewart Tower was able to give the group a valuable insight to some of the challenges of installing a wind turbine on his farm.

The group also heard from Gordon Black from BabyHydro. Gordon explained how all farmers could carry out a feasibility assessment for micro hydro on their farm.

For more information, see the Discussion Group notes from the Glenkilrie February meeting at

www.sac.ac.uk/climatechange/farmingforabetterclimate/ccfocusfarms/ccupland/ or see the later article on fuel saving tips for more on this topic.

Savings from better energy use

Around 150 farmers attended one of four energy workshops held in Ayrshire during February and March.

SAC Farm Business Services consultants Chloe Bell and Robert Ramsay, along with Climate Change Manager Rebecca Audsley, outlined a range of tried and tested steps all farmers can consider to reduce their energy spend.

Top of the list for savings on electricity bills was checking that you are on a suitable tariff. Chloe said: 'Farmers have historically been price-takers for electricity but it's actually very easy to shop around for a good deal.'

Rebecca considered why it's important to know what you are spending on electricity and fuel and link this to individual activities. Rebecca said: "Figures show that there can still be a big difference between similar farms when you calculate energy costs per head of livestock. Savings through better use of electricity in the dairy could be in the region of around £20 per cow over the year. That's potentially a £3000 annual saving across a 150 cow herd."

A good energy audit should identify how much you are spending on energy and fuel on the farm, on what activities and highlight opportunities for cost savings and potential payback periods.

Following energy buying and auditing, Robert Ramsay looked at the potential for renewables. The majority of the meeting focused on wind energy but other renewable sources shouldn't be

discounted. Robert said: “Wind power is not suited to all sites but farmers have a range of resources at their disposal to produce power. It is important to look at all the options before choosing the technology best suited to a given site.”

Some farmers at the meeting thought they could be paying more for electricity than they should be. A number have followed this up and have enquired about energy auditing for their farm.

If you are interested in attending a similar event in your area, email climatechange@sac.co.uk for more information. All events are free for farmers to attend thanks to funding from Scottish Government as part of their Advisory Activity programme.

How to do your own energy audit

You need to:

- Establish farm energy use over the year. Keep records (bills) and monitor what you use.
- Check your tariff – is it competitive?
- Match use to individual operations. For example, record vehicle use against specific tasks.
- Benchmark. How do you compare with others in terms of energy use?

For more energy audit information, the Energy Auditing Practical Guide is available at www.sac.ac.uk/climatechange/farmingforabetterclimate/fiveactions/keyaction1/

Alternatively, a free energy audit booklet and checklist is worth a look at www.calu.bangor.ac.uk/energybooklet.php.en

Greenhouse gas emissions from agricultural practices

The Scottish Government has recently estimated that greenhouse gases from agriculture and related land use make up around 20% of Scotland’s emissions.

However, agriculture can ‘sequester’ or ‘lock up’ carbon in growing plants and healthy soils on the farm, cutting down net

emissions.

In terms of routine practices on the farm, CO₂ doesn’t play the largest role. That is down to either methane (CH₄) as a direct result of livestock enteric fermentation (around 97% of methane from livestock is from burping at the front end, not the back end) or nitrous oxide (N₂O) from addition of fertilisers, soil cultivation and pasture management.



Voluntary steps to cut down greenhouse gas emissions have to be easy to integrate into current activities on the farm and be seen to be taken up by farmers to reduce the likelihood of future legislation.

Five key action areas have been identified which could reduce losses and help the farm business, saving money through improved practices and better use of inputs.

Farming for a better climate five key action areas

- Optimising energy and fuel use
- Use of on-farm renewables
- How we can ‘lock in’ carbon to soils, trees and plants
- Better use of nutrients
- Optimising livestock management

For more information on the key action areas see www.sac.ac.uk/climatechange/farmingforabetterclimate/fiveactions/.

Reduce methane losses and increase profits?

Farmers are constantly advised to improve efficiency but what exactly does that mean? That was the opening line from Jimmy Goldie, SAC Dairy Specialist and invited speaker at the latest Torr discussion group meeting.



During the morning meeting, the group considered forage quality and pasture management alongside livestock efficiencies for both dairy and beef units.

The meeting heard how we may not be able to accurately reduce methane production per cow but we can certainly tip the ratio of methane produced per kilogram of meat or litre of milk leaving the farm. Maximising production ensures the animal is efficient over its lifetime (so more meat per kg of methane lost); making better use of inputs increases profitability.

Jimmy had worked with Ross previously and had identified a number of potential changes that could tweak the current system and increase efficiency at Torr. For example, Jimmy calculated that through increasing protein in home grown feeds, Ross has reduced the need for concentrates by 50kg per cow but with no downturn in with milk yield (yields had actually increased by around 400 litres per cow).

You can read more about the meeting at <http://www.sac.ac.uk/climatechange/farmingtonforabetterclimate/ccfocusfarms/ccdairy/>

Fuel saving tips

Correct tyre pressures and a well maintained vehicle could all avoid unnecessary fuel use. But what else can you actually do to reduce diesel use?

Sinclair Simpson, SAC Farm Facilitator working alongside Stewart Tower, said "With a bit of thought and forward planning, coupled with a good working knowledge of crop variety, soil fertility and crop management systems it's possible to save around £1,500 off the fuel bill over the year". Sinclair's ideas include:

- Applying organic manures to the winter wheat crop to supply all P and K requirements. This will cut out an additional tractor pass
- Switching to grass swards of 6-8 year leys. This saves in fuel through reduced establishment costs.
- Using disease resistant spring barley varieties to cut out the need for one fungicide spray.
- Cutting spring fertiliser dressings on winter oilseed rape, winter barley and winter wheat from three to two applications.

Following sound agronomic principles, tractor use can be cut, saving fuel, time and the need for additional inputs such as fertiliser and fungicides. These steps will also help to cut CO₂ emissions from the farm into the bargain.

Farming for a Better Climate goes global

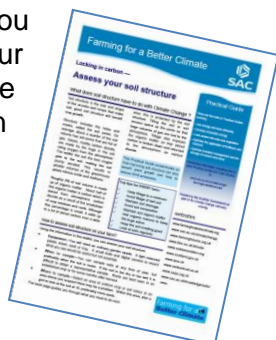
Although our main aim is to help farmers here in Scotland, we seem to have attracted a larger audience, with 'hits' to the website from over 106 different countries.



Now whether this is Scottish farmers on the move and wanting to download the occasional practical guide on their travels is hard to say, but it's nice to know our information is being so widely looked at!

New Practical Guides

Want a bit of information on the range of micro renewables that could be suitable for your farm? Have you ever wondered if your soil structure could be leading to poorer than expected yields? Is it worth beginning to actively manage that small patch of farm woodland?



The Farming for a Better Climate website hosts practical guides and farmer case studies that could help you answer some of those questions or find out more information about a particular topic. New Practical Guides include:

- Introduction to micro-renewables
- Micro-hydro
- Solar Photovoltaics (PV)
- The Feed-in Tariff (FiT) scheme
- Managing woodlands for firewood
- Locking up carbon in farm woodlands
- Assessing your soil structure
- Efficiencies on the dairy farm

It's always good to find out new ideas and see what other farmers are doing. We have two new farmer case studies:

- Torr Farm organic dairy
 - Woodlands at Mains of Thornton
- You can view and download the practical guides and farmer case studies at www.farmingforabetterclimate.org.

If there is a topic you would like to see as a practical guide or would like to volunteer as a case study, let us know - our contact details are on the back page.

Forthcoming events

Despite what you may think about climate change, there are lots of useful ideas and tips that you can pick up from attending a climate change meeting. Whether it's from the specialist speakers or from other farmers in the group, discussions and comments are usually plenty.

Topics we are planning for forthcoming discussion group farmer meetings in 2011 include:

- Sheep and pasture management
- Reducing fuel use on the farm
- Reducing energy use in the dairy
- Improving and protecting farm soils
- Farm visits to micro hydro and wind installations
- Planning nutrient applications with PLANET Scotland
- Using GPS technology in the field
- Managing farm woodlands and the Renewable Heat Incentive

Get in touch if you would like more information or to be contacted when the farm meeting



programme has been confirmed.

➤ **Stewart Tower Family Farm Walk**

Neil and Linsey Butler are hosting a number of farm walks, aimed at the whole family, for visitors to Stewart Tower. Visitors will be able to hear about some of the daily activities on the farm and what steps Neil and Linsey and the other climate change focus farms are taking to reduce greenhouse gas emissions and benefit the farm business. For notification of the next farm walk date contact climatechange@sac.co.uk or Stewart Tower on info@stewart-tower.co.uk

➤ **Soil Association Hydro Installation Event**

The Soil Association is holding a Hydro Installation event on Thursday 19th May at Fortingall, Aberfeldy. The event will give a practical overview of regulatory aspects including environmental, extraction and construction grid connection, planning finance and legal issues. Includes a visit to the 998Kw run of river Glenlyon Hydro scheme. The cost is £40+VAT. For further information call Lyn on 0131 666 0847 or email matheson@soilassociation.org

➤ All Energy Conference and Exhibition

The All Energy Conference and Exhibition 2011 takes place on May 18 and 19 this year at the Aberdeen Conference and Exhibition Centre. This is the UK's largest renewable energy show and is an excellent event for anyone considering developing a renewable energy project. Attendance is free and gives a great opportunity to learn more about renewable energy and to meet up with contacts in the renewables area (SAC will be at stand H120). There will be a conference session aimed at the farming community from 4 – 5.30pm on the Wednesday afternoon (18th) to address topical issues for farmers interested in renewable energy development. See www.all-energy.co.uk for further information.

➤ Soil Association Anaerobic Digester Event

Turrif will be the venue for the Soil Association AD event on Tuesday 14th June. Topics include an overview of AD, how it works, feedstocks, use of digestate, FITS, planning permission and connecting to the grid. The day will also include a visit to the Rennie's of Gask Farm's AD unit which uses pig slurry and abattoir waste to produce hot water, electricity, and a high nitrogen fertiliser which is used to grow their cereals which, in turn, are fed to their pigs. The cost is £40+VAT. For further information call Lyn on 0131 666 0847 or email lmatheson@soilassociation.org

Getting in touch

What would you like to see covered in future newsletters? Do you want to be part of a discussion group? Would you like to attend an event in your area? Are you already taking steps to mitigate or adapt to climate change? We would love to hear from you. You can send a general enquiry to climatechange@sac.co.uk

Alternatively, you can contact one of the team:

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Email rebecca.audsley@sac.co.uk Tel 01292 525089

- **Glenkilrie** Focus Farm SAC
Facilitator—Peter Lindsay, SAC Perth Office. Email peter.lindsay@sac.co.uk
Tel 01738 636611
- **Stewart Tower** Focus Farm SAC
Facilitator— Sinclair Simpson, SAC Perth Office. Email Sinclair.simpson@sac.co.uk Tel 01738 636611
- **Torr** Focus Farm SAC Facilitator — Gillian Reid, SAC Dumfries Office. Email Gillian.reid@sac.co.uk Tel 01387 261172
- **Upper Nisbet** Focus Farm SAC
Facilitator – Moira Gallagher, SAC St Boswells Office. Email moira.gallagher@sac.co.uk Tel 01835 823 322

In the next edition of FFBC news...

We will hear more about Upper Nisbet and plans for future meetings. We will also let you know how the family farm walks at Stewart Tower went.

We will also include examples of practical steps from the discussion group meetings and measures other farmers are putting in place to make better use of inputs and reduce greenhouse gas emissions. Let us know if there are other topics that you would like to hear about.

If you are not already on our email distribution list and would like to be notified when the next newsletter is out, email climatechange@sac.co.uk

Thanks for following the Farming for a Better Climate initiative!

