

Welcome to the Farming for a Better Climate newsletter

In this first newsletter, we hope to give you a feel for the Farming for a Better Climate (FFBC) initiative and some of the positive steps Scottish farmers are taking to combat climate change.



It will introduce you to the climate change focus farmers and some of the work underway on the farms. It will outline some possible savings for farmers in terms of energy use and consider why we should all be thinking about a carbon budget. It also includes information on forthcoming events and links to information on the Farming for a Better Climate website.

What's the Farming for a Better Climate initiative about?

Our agricultural land use is estimated to contribute around 20% to Scotland's

greenhouse gas (GHG) emissions. All sectors are coming under scrutiny to see what can be done to shrink GHG losses.

Through subtle changes in practice, farmers can help to 'lock up' a proportion of carbon within soils and vegetation.

Farming for a Better Climate, funded by Scottish Government, aims to test and identify low and no cost changes to the farm business. There's an added bonus too, as many of these measures could save money and improve business efficiency into the bargain.

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

Let us know what you think!

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 - our contact details are on the back page.

A bit about the project...

It's widely accepted that climate change is happening. For Scotland, this could mean warmer, dryer summers and milder, wetter winters. It could also bring more extreme weather events such as storms, drought and flooding (and heavy snowfall?). One of the problems is the uncertainty of these predictions, so farmers are right to begin

to consider how they can protect their business in the future and how they can play their part in reducing greenhouse gas emissions.

In light of this, the Scottish Government, working with NFUS and SAC, has funded the Farming for a Better Climate project. SAC will work with farmers across Scotland to look at some of the opportunities on farm to reduce the loss of greenhouse gases. Importantly, these changes are also focused on business benefits.

Key action areas

SAC will work with the focus farmers to demonstrate how proposed changes could make sound business sense for the farm and reduce greenhouse gas emissions.

The key action areas look at:

- optimising energy and fuel use
- use of on-farm renewables
- how we can 'lock in' carbon to soils and vegetation
- better use of nutrients
- optimising livestock management

Focus farmers

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

- David Houstoun – farms 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.

Stewart Tower will be following a slightly different programme from Glenkilrie and Torr. At Stewart Tower, the emphasis will be on promoting the positive actions farms are taking to reduce the loss of greenhouse gases.

Jim Reid at Milton of Mathers, an arable

unit growing seed potatoes, was originally one of the focus farmer team. Due to a change in business circumstances, Jim has decided to step down. However, we still have the offer of a visit to Milton of Mathers in the future, so we may yet be reporting back from Jim's farm. A replacement arable focus farmer will be announced in the New Year.



L-R: David Houstoun, Prof Bill McKelvey (SAC), Cabinet Secretary Richard Lochhead, Linsey Butler and Ross Paton

What has happened so far at Glenkilrie?

Glenkilrie is an upland beef and sheep farm near Blairgowrie, run by David and Morag Houstoun. It covers some 1000 hectares (ha), of which around 770ha is hill/rough grazing along with 27ha of forestry. The in-bye land at Glenkilrie grows grass and forage rape. The majority of the silage produced is stored in a pit with surplus grass and any 2nd cut made into big bale silage.

There are around 140 suckler cows, half spring and half autumn calving with calves sold as stores. Cattle are housed during the winter on a mixture of straw bedded and slatted courts resulting in the production of both slurry and FYM. Around 1000 ewes are divided into two flocks split between low and high ground with lambs sold finished. Sheep are kept outside all year round.

Working with Peter Lindsay from the SAC Perth Office, David and Morag have carried out a carbon budget. The carbon budget looked at a range of routine practices on the farm and calculated the greenhouse gas emissions, illustrating that Glenkilrie already compares well with other beef units. Interestingly, the carbon budget did flag up the amount of fuel used at Glenkilrie, David said, "I was staggered at how much tractor fuel we use even though contractors do a lot of the field work."



Over the next three years, David will be working with the local farming community group to improve on-farm efficiencies whilst keeping greenhouse gas losses in mind.

The first open meeting at the farm looked at livestock, with SAC Beef expert Jimmy Hyslop demonstrating condition scoring on a range of stock at Glenkilrie and the benefits of forage analysis (see next item).

The next farmer discussion group will look at energy use at Glenkilrie and the potential for renewables, with speakers covering on-farm options for small scale wind and micro hydro, both of which could bring additional income to the business through reduced electricity bills and feed in tariffs, plus a reduction in carbon emissions through cutting demand for grid electricity.

When talking about the project as a whole, David said, "I was slightly concerned initially that because the project was about climate change it would be complicated,

but in fact most of the targets are things I want to do anyway. The approach will be a lot more practical than I thought."

How can forage analysis reduce greenhouse gas emissions?

It's all about efficiency; making best use of inputs to the farm business in relation to how much product you sell, according to Jimmy Hyslop, Beef Specialist with SAC.

At an introductory farm meeting at Glenkilrie, Jimmy put pen to paper to demonstrate how much extra in terms of feed it could be costing you by not knowing the quality of your silage.

Peter Lindsay, SAC Farm Facilitator took this step further and invited farmers to assess four silage samples and rate them from good to poor, with surprisingly mixed results.



You can read more about the meeting at www.sac.ac.uk/climatechange/farmingforabetterclimate/ccfocusfarms/ccupland/

Glenkilrie discussion group meeting — first cancellation due to snow

Ok, so it's December and we do expect a bit of bad weather. However we thought we could be clever and sneak in a meeting up at Glenkilrie before Christmas.

Our first discussion group meeting to look

at cutting energy use and the potential for on-farm renewables was scheduled for Blackwater Hall at Blacklunans on the afternoon of Tuesday 7th December 2010.

With one of our speakers residing in the Scottish Borders and heavy snowfall blanketing not only Blacklunans but the whole of Scotland, we thought it safest to reschedule.

Weather permitting, the meeting has been re-scheduled to Thursday 27th January. The meeting will host speakers on energy auditing, the range of renewable options for farms, a farmers experience of small scale wind and suitability of micro hydro for farms.

For more details about the meeting and to book a place contact the SAC Perth office on 01738 636611 or email peter.lindsay@sac.co.uk It's free to attend and all farmers are welcome.

What has happened so far at Torr?

Torr is an organic dairy farm managed by brother and sister team Ross and Lee Paton. It covers some 420ha with 170 dairy cows, mainly Holstein-Friesian and Montbeliarde plus some Ayrshires and Norwegian Reds.



Ross and Lee keep calves from the dairy herd, either for breeding or finishing, with some 100 head of cattle being finished per year.

Around 80ha are under cereals, namely arable silage, spring barley and winter wheat with 42ha used for growing trees. The remainder is sown to grass for grazing and silage.

Working with Gillian Reid from the SAC Dumfries office as their farm facilitator, Ross and Lee carried out a carbon budget for Torr and found that they compare well with other dairy farms in terms of greenhouse gas emissions, but there are still a range of steps that can be considered for Torr and other farms through the discussion group. Ross said, "I'm looking forward to the opportunity to work with other farmers as this will be a fascinating programme to be involved with."

Torr discussion group meeting

Ross and Lee recently held their first discussion group meeting, which was well attended by both local farmers and those travelling from a bit further afield. Being organic, a good topic to begin with at Torr was making the best use of slurry and manures; something that all livestock farmers organic or conventional could take advantage of.

Bill Crooks and Alex Sinclair, both specialists at SAC, started off with a reminder about the importance of maintaining and improving soil condition which can sometimes be overlooked and lead to a host of other problems further down the line. Alex then went on to look at the importance of knowing soil nutrient status, the level of nutrients available from slurry and manures and the potential cash value in terms of nutrients that could be used to the farms advantage and in terms of conventional systems, offset against fertiliser applications. Alex estimated that nutrient value in slurry at Torr was equivalent to around £3.00 per m³; putting a cash value on a 10m³ (2,200 gallon) tanker of slurry of around £30 per application in terms of nutrient content.

Next steps for Torr

The discussion group have been offered a free SAC carbon budget for their farm.

SAC has been on-farm and carried out an energy audit and looked at the potential for renewables at Torr which will then form a topic for the next discussion group meeting provisionally scheduled for Wednesday 2nd March at Torr.



Ross Paton of Torr (centre) talks with discussion group about clover mix in silage fields

For more details about the meeting and to book a place, contact the SAC Dumfries office on 01387 261172 or email gillian.reid@sac.co.uk It's free to attend and all farmers are welcome.

Farmer discussion groups

Farmers in the focus farm discussion groups working with Torr and Glenkilrie will be able to explore a range of business benefits. They will also be able to discuss and debate these steps with other farmers and SAC and industry specialists.

You can read more about the focus farms and summary reports from the first farmer meetings at

www.sac.ac.uk/climatechange/farmingforabetterclimate/ccfocusfarms/. If you are a farmer and would like to be involved with the discussion group, contact the appropriate SAC Farm Facilitator; details at the end of the newsletter. Meetings are free and all farmers welcome.

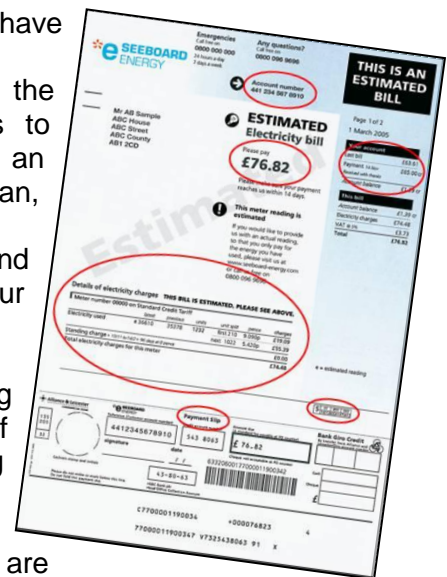
Could you save 20% on energy and fuel use?

That's the figure the Carbon Trust estimate you could cut your energy use by through better use of electricity and fuels

on the farm; other estimates have suggested around £2000 as the average annual saving.

A good place to start is with an energy audit. In principle, you are just looking at your annual spend on fuel and energy, how much is spent on which tasks and if some of the practices could be done more efficiently. Standard figures are available for you to compare your performance to others with similar enterprises, estimating energy costs per head of livestock or kg of produce.

Once you have established energy use, the next step is to draw up an action plan, keep monitoring and review your performance regularly. After taking account of and reducing current energy spend, you are then in a good position to consider what renewables could be feasible for your farm.



Around the steading, pay attention to:

- **Lighting** – compact florescent bulbs use 80% less energy than conventional bulbs.
- **Pipework and tanks** – are they all correctly insulated?
- **Boilers** - are timing and temperature controls correct for your pattern of use? Unnecessarily keeping temperatures at only 1°C over requirement could increase energy use by 15%
- How efficient is your **refrigeration equipment**? Is it regularly serviced to maintain efficiency?
- If you have **buildings** that are heated/cooled are they correctly

insulated/ventilated?

- Can you re-negotiate your **electricity tariff** or move to another supplier?

SAC will be hosting on-farm demonstration events in 2011 to look at the savings other farmers have achieved through energy reduction measures. If you are interested in an afternoon on farm, get in touch or keep an eye on the events pages.

You can read more about energy audits at www.sac.ac.uk/consulting/services/c-e/crops/agronomy/bioenergy/audits/. Free guides and checklists are available on the web, see www.calu.bangor.ac.uk/energybooklet.php.en and www.carbontrust.co.uk/Publications/pages/publicationdetail.aspx?id=CTL072 as examples.

Carbon budgets - what are they and why do we need them?

A carbon budget can be referred to as a carbon footprint or audit. It looks at all the activities on farm and presents these in terms of greenhouse gas emissions.

Not all emissions are equal. For example, methane (CH₄), produced as a by-product during ruminant digestion, is around 25 times more potent than carbon dioxide (CO₂) when looking at its 'GWP' or global warming potential over a 100 year period. Nitrous oxide (N₂O) on the other hand, produced following fertiliser application for example, is over 300 times more potent than CO₂.

To make it easier to understand, a carbon budget looks at all these gases and presents them in terms of carbon dioxide equivalents (CO₂e).

Carbon budgets are becoming more popular. For example, the larger supermarkets are now asking some of their producers to provide information so

as they can be benchmarked and simple cost and carbon saving alternatives can be proposed.

One issue with carbon footprinting is that data entered into the farm footprint can be based on 'assumptions'. This is because the figures for some calculations can be so varied, it is better to stick with an average value. It will mean your budget isn't as accurate as it could be, but certainly gives you a starting point to work from until the science catches up.

If you are interested hearing more about carbon budgeting, SAC can offer free, practical, farm focused workshops to understand a bit more about it. It would be useful for those that have a carbon budget already and want to understand more or those wanting to find out a few more benefits before going down the carbon budgeting road.

If you are interested in a free farmer workshop in your area or would like to be kept informed of forthcoming dates, let us know.

For more information about carbon budgeting and additional links, see www.sac.ac.uk/climatechange/farmingforabetterclimate/carbon/

PLANET Scotland - helping you make best use of nutrients

The new computer program, PLANET (Planning Land Application of Nutrients for Efficiency and the Environment) Scotland, has been recently launched by the Scottish



Government and could be a big help for all farmers who have slurry and manure to spread or fertiliser to buy in.

PLANET Scotland is designed to benefit both the environment and the farm business, tailored specifically for farmers in Scotland to help to account for nutrient

content in slurry and manure and balance this with fertiliser applications and crop requirements.

Making better use of fertilisers and manures, can cut greenhouse gas losses from routine practices and is one of the Farming for a Better Climate key action areas.

Speaking at the launch, Cabinet Secretary for Rural Affairs and the Environment Richard Lochhead said, "Climate-friendly farming is vital in helping us meet our targets to tackle climate change. By supporting PLANET, farmers can help meet Scotland's climate change and water quality targets and improve business profitability." You can download your free copy of PLANET Scotland at www.planet4farmers.co.uk.

Forthcoming events

Do you have a climate change related event that you would like to let other farmers know about? Get in touch and we can post it on the Farming for a Better Climate website. Forthcoming events include:

➤ **Glenkilrie Focus Farm discussion group meeting 1**

Provisionally scheduled for Thursday 27th January, the meeting will host speakers on energy auditing, the range of renewable options for farms, a farmer's experience of small scale wind and suitability of micro hydro for farms. For more details about the meeting and to book a place, contact the SAC Perth office on 01738 636611 or email peter.lindsay@sac.co.uk It's free to attend and all farmers are welcome.

➤ **Torr Focus Farm discussion group meeting 2**

Following an energy audit at Torr, the next discussion group meeting is provisionally scheduled for Wednesday 2nd March at Torr. For more details about the meeting and to book a place contact the SAC Dumfries office on 01387 261172 or email gillian.reid@sac.co.uk Again, it's free to attend and all farmers are welcome.

➤ **SAC Demonstration event: Cutting energy use on the farm**

Free event looking at savings others have made through better energy use. Will include a farm visit and practical steps farmers can use at home. Date and location still to be confirmed. If interested, contact climatechange@sac.co.uk for more information.

➤ **SAC Workshops: Efficiencies and carbon cutting in the dairy sector**

Free event looking at steps to improve efficiencies and improvements to be made on the carbon footprint which will also help the bottom line. Will include a farm visit and range of practical steps. Date and location still to be confirmed. If interested, email climatechange@sac.co.uk for more information.

➤ **SAC Workshops: PLANET Scotland**

How to get started with PLANET Scotland. Free event. Various dates and locations across Scotland. If interested, email climatechange@sac.co.uk for more information or enquire at your local SAC office.

➤ **Soil Association Anaerobic Digester Event**

Following the heavy snowfall, the Soil Association have rescheduled their 1st December Anaerobic Digester event at Turrieff to 26th January 2011 with presentations from Michael Chesshire, Technology Director of BiogenGreenfinch, covering an overview of anaerobic digestion, how it work, what feedstocks are suitable and what you can do with the biogas and digestate.

➤ **Soil Association Biomass Installation Event**

The event will cover calculating the size of heating system required, fuel availability, quality, storage RHI, planning permission & a farmer's practical perspective on commissioning a boiler system and running a wood chip business. The event will be on Tuesday 15th February at Falkland, Fife.

➤ **Soil Association Wind installation Event**

The event will look at site choice, grid connection, environmental & planning permission issues, and a farmer's practical perspective on commissioning a wind turbine. To be held in Buchlyvie, Stirlingshire, on Wednesday 9th March 2011.

For more details on Soil Association events, contact

lmatheson@soilassociation.org.

Alternatively, keep an eye on the Farming for a Better Climate events pages at www.sac.ac.uk/climatechange/farmingforabetterclimate/newsandevents/events/

Coming up in the next newsletter...

The next newsletter will be due in spring 2011. It will contain a profile of Stewart Tower and introduce the new focus farmer representative for the arable sector.

We will also include practical steps from the discussion group meetings and measures other farmers are putting in place, saving them money and helping them to 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.

Contact Us

You can send a general enquiry to climatechange@sac.co.uk. Or you can contact one of the team:

- Project Coordinator — Rebecca Audsley, SAC Auchincruive Office. Email rebecca.audsley@sac.co.uk Tel 01292 525089

- Torr Focus Farm SAC Facilitator — Gillian Reid, SAC Dumfries Office. Email Gillian.reid@sac.co.uk Tel 01387 261172

- 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

