

# Farming for a Better Climate



## Phantassie and Garvald Mains



<b>Name</b>	Willie Hamilton
<b>Farm</b>	Phantassie and Garvald Mains
<b>Locality</b>	East Lothian
<b>Type</b>	Mixed Arable and Stock
<b>Size</b>	660ha owned and rented ground
<b>Staff</b>	6 farm staff, 1 lorry driver

### Background

My brother Gavin and I own Phantassie and Garvald Mains Farms and manage them as a single business. We grow cereals and potatoes at Phantassie as well as renting out ground for vegetables and at Garvald Mains we grow cereals and run sheep and both Aberdeen Angus and continental cattle. We try to finish the cattle entirely on home-grown feed including brock tatties.

Within the business we run a small haulage operation. We haul our own produce and we trade straw. We also do some contracting including silage, combining and grain drying.

### How might Climate Change affect our farm ?

We are already noticing changes in weather patterns including milder winters, and more unsettled harvest periods with sudden downpours.

We have had issues with dry spring weather including an increased irrigation requirement to ensure good skin finish on pre-pack potatoes. Also, some spring-sown cereals have been slow to establish in dry soils.

The run of wet harvest periods has put up the grain drying requirement. We dry grain for a neighbour too and so we see that as an increasing pressure.

On the positive side, the milder winters have eased things at Garvald Mains where snowfalls used to leave us cut off and without power for a week at a time! House heating costs have reduced too.

Long-term, water shortages in the world's more arid areas may put Scottish growers a much better position to supply high quality grain to a growing population. We expect that prices will increase but that costs will increase alongside.

Overall damper conditions here may help us grow better grass for both silage and grazing.

Many of our decisions about replacement equipment are now informed by energy efficiency - this means that we are looking after our costs as well as our emissions.

On the next page you can read about how some of those decisions help us to manage our emissions now and about some of our future emissions-reduction plans.

### Case Study

Find out what other farmers are doing to improve profitability and adapt to a changing climate in our series of case studies.

There are five sets of Practical Guides covering :

Use energy and fuels efficiently

Develop renewable energy

Lock carbon into soils and vegetation

Optimise the application of fertilisers and manures

Optimise livestock management and the storage of manure and slurry

Find further information, including links to other Practical Guides and Case Studies, at



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

Funded by the Scottish Government as part of their Climate Change Advisory Activity

### Websites

[www.sac.co.uk/climatechange](http://www.sac.co.uk/climatechange)  
[www.farmingfutures.org.uk](http://www.farmingfutures.org.uk)  
[www.bbc.co.uk/climate](http://www.bbc.co.uk/climate)  
[www.soilassociation.org](http://www.soilassociation.org)  
[www.dairyco.org.uk](http://www.dairyco.org.uk)  
[www.scotland.gov.uk](http://www.scotland.gov.uk)  
[www.ipcc.ch](http://www.ipcc.ch)  
[www.carbontrust.co.uk](http://www.carbontrust.co.uk)  
[www.sepa.org.uk](http://www.sepa.org.uk)



# Phantassie and Garvald Mains

*"We are keen to make the very most of the opportunities we have to utilise our lowland and upland ground and we use each farm to its own potential.*

*We try to be efficient with fuel and energy use - this helps our costs as well as having environmental benefits.*

*Building the new steading at Phantassie was a great opportunity to review how we do things and to further increase our efficiency. We are constantly reviewing our business to make the most of our on-farm resources and increasingly this includes thinking about energy and emissions too.*

*Overall, we are keen to make the best use of the resources we have. This approach, we feel, gives us better control over costs and helps reduce our environmental impact".*  
Willie Hamilton.

## Funding and Support

A Whole Farm Review could help identify self-funding possibilities and business opportunities.

Changes to electricity feed-in tariffs (FIT) and support under the Renewable Heat Incentive (RHI) mean you should look again at renewables schemes that were previously marginal.

See the FFBC practical guides for more information.

## Energy and Fuel

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- We are considering a whole-farm energy and fuel audit.
- When we built the new steading we put in time switches for lights and all of our bulbs are low-energy.
- Our new grain dryer runs on LPG and we're happy that it is much more fuel-efficient than the old kero dryer and with no grain taint.
- All our drivers take great care over vehicle and tractor maintenance to help smooth and efficient running.
- We use detailed crop monitoring to ensure that we irrigate at the right time in the right amount. As well as saving water and fuel, this helps keep soil conditions optimal to reduce N<sub>2</sub>O emissions.
- We always try to run our lorry with loads in both directions to make best use of fuel .

## Fertilisers and Manures

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- We are in the Lothians NVZ and nutrient budgeting is important to us. We work with our local SAC advisors each year to plan the N budget for the whole farm .
- Our own stock are all straw-bedded but we take pig slurry from a neighbour - this is applied with a conventional spreader. We're going to look at injecting slurry to achieve better N efficiency through reduced emissions.
- We have considered using compost and appreciate its benefits to soil organic matter and drought resistance but we already return a lot of organic matter to the soil as FYM and slurry.
- Our grass mixes all contain clover to give us both silage and grazing use.

## Renewables

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- We are interested in a single turbine at Phantassie for our own electricity requirements and maybe in a bigger installation at Garvald Mains, the hill farm.
- We could have some micro-hydro potential at Garvald Mains too - the river isn't large but it runs all year round with a high head.
- Our new farmhouse has a groundsource heat pump and we're really pleased with it. It produces four times more heat than the electricity that goes to run it.

## Locking up Carbon

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- We have some peat soils at Garvald Mains and we're careful only to lightly graze them.
- We bale all our straw but put most of it back on later as FYM.
- We have about 16ha of managed mixed woodland on the farm planted from the 1980s onwards. We also have two SSSIs, one of which includes woodland.
- We planted a lot of trees for shelter and screening when we built the new steading.
- We use a stubble cultivator whenever we can after potatoes and OSR on about 20% of our arable area. This lets us re-establish crop cover much more quickly, causes much less soil disturbance and saves us some fuel. We get better volunteer kill in any frosts with min-till too.

## Livestock Management

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- We use EBVs when selecting bulls. We are looking to breed progeny that will finish on home-grown feeds at the right time of year for our marketplace.