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Work has started on a renewable energy centre where green agricultural techniques will be test-run before Ulster's farmers put them into practice.

The futuristic farm at the Agri-Food and Biosciences Institute in Hillsborough will test innovative techniques such as solar-powered dairying, willow treatment of dirty water and slurry-powered anaerobic digestion to determine which is most suited to Ulster's climate and economic conditions.

Meanwhile, offices housing 100 research staff at Hillsborough are about to undergo a renovation including the installation of a heating system based on renewable energy.

Slurry from the dairy herd will be converted into methane using a ground-breaking anaerobic digestion system.

Willows, miscanthus and poplar will all be used to produce heat and electricity in a biomass generator. Sunlight energy will be converted to hot water in a dairy parlour fitted with solar panels.

"Dairy farms across Northern Ireland need a lot of hot water to sterilise the pipelines, so part of our programme is to look at the potential of solar and other ways of meeting need for that hot water from renewable resources," head of energy research Dr Lindsay Easson said.

The institute has already started work planting crops that can be used for biofuels, and is testing bioremediation, which uses cosses of willow to clean up dirty water produced by washing farmyards.

The results of the research are expected to shape the future of farming in Ulster, playing a major part in the province's efforts to tackle climate change.

A recent European Commission climate change blueprint is calling on member states to meet 20% of energy demands from renewable sources by 2020, with 10% of road fuels sourced from plants by 2020.

However, Dr Easson warned that farmers cannot expect electricity-producing green technologies alone to make a profit. The electricity needs to be a by-product of a system that suits an individual's farming methods.

"You can't go ahead with things that aren't economic. The energy in itself doesn't always pay, there's got to be other projects," he said.

SOURCE: BELFAST TELEGRAPH