

CAFRE's Renewable Energy Programme from 2005 to 2016

Policy Context

In 2002 the Department of Agriculture set up a "Vision Group" to review the future of the Northern Ireland Agri-food sector. The recommendation from the resulting report, 'A Vision for the Future of the Agri-food Industry', was that the Department of Agriculture and Rural Development (DARD), in association with the Department of Enterprise, Trade and Investment (DETI), and the Department of the Environment (DOE), adopt a 'strategic approach to the development of sustainable energy systems at rural community level'.

In 2004 a Strategic Energy Framework for Northern Ireland was announced by the Enterprise Minister. The key goals in the Framework were:

- reducing energy costs
- building competitive energy markets
- protecting our future by enhancing renewable's and sustainability
- securing a reliable energy supply

DARD launched its Renewable Energy Action Plan during January 2007, which focussed on important environmental issues including climate change, diversity of energy supply, waste management and sustainable development.

CAFRE also began to develop renewable energy plans for the estate which would assist CAFRE achieve Government targets as set out by the Strategic Energy Framework, reduce GHG emissions and assist the delivery of renewable energy training and KTT programmes to the agri-food sector.

During 2009/10 DARD set up a steering group to review Renewable Energy in Agriculture and produced an Action Plan "Renewable Energy in the Land Based Sector a way forward", known as the Renewable Energy Action Plan 2010 (REAP). This action plan underpinned CAFRE's role in organising Practical On-farm Renewable Energy Events at Greenmount and Enniskillen campuses.

<https://www.daera-ni.gov.uk/sites/default/files/publications/dard/dard-renewable-energy-action-plan-2010.pdf>

REAP was reviewed during 2013/14 resulting in an Interim Renewable Action Plan 2013/14 which recorded CAFRE's need to "Continue to develop and deliver renewable energy industry training and knowledge exchange programmes at CAFRE in line with industry need and sector developments".

<https://www.daera-ni.gov.uk/sites/default/files/publications/dard/dard-interim-renewable-energy-action-plan.pdf>

CAFRE Renewable Energy Installations

CAFRE's starting point from an energy perspective??

CAFRE's role in other schemes during this time e.g Biomass Process Challenge fund, ROCs etc.

The College of Agriculture, Food and Rural Enterprise (CAFRE) began investigating Renewable Energy Technologies during 2005 and agreed to develop a Sustainable Energy Unit consisting of a biomass (wood chip) boiler, solar thermal (hot water) panels and a wind turbine.

CAFRE Heat from Biomass installations – Ineligible for RHI.

CAFRE installed its first Biomass boiler, a 150kw unit in August 2007 at Loughry Campus, which was demonstrated at a Renewables Open Day on 23rd August. This was the first event hosted by CAFRE at which there was a presentation on Heat from Biomass. This presentation concentrated on Biomass Fuel.

A second Biomass boiler of 320kW was commissioned at the Horticulture Centre Greenmount Campus in January 2008 to replace the oil boiler for the 2000m² Venlo glasshouse. This was supplemented with 20m² of solar thermal panels to demonstrate solar thermal technology alongside Biomass heating.

An 80kW wood pellet boiler was installed to replace electric heating in the Dairy Centre Farm Courtyard during 2009.

CAFRE Heat from Biomass installations – Eligible for RHI.

During 2010 a 300kW biomass woodchip boiler was installed at Enniskillen Campus to replace existing oil boilers. This boiler was used for demonstration at industry attended events held at the College from February 2012 until October 2015. Under the rules of the RHI scheme this boiler was eligible for accreditation within the RHI scheme at the lower tariff of 1.5p/kWh. A number of issues arose during the installation including the positioning of the heat meter and thus the accreditation took two years to complete. The benefit of applying to the RHI scheme was that CAFRE obtained the knowledge and experience to better inform farmers of the correct procedures for accreditation onto the scheme during training workshops. **The application process for RHI began on 16th February 2015 although the application was not submitted until the 8th October 2015. The point at which heat**

meter readings were considered for payment was from 19th July 2015 with the first payment received

A 60kW Pellet boiler was installed as part of a new Training Building at the Horticulture Centre Greenmount Campus. As part of the installation this boiler was put through RHI accreditation by the installer. It was eligible for the higher tariff of 6.5p/kWh as it was under 99kWh. **The application process for RHI began on 16th March 2015 although the application was not submitted until the 30th July 2015. Payment commenced from 24th June 2015.**

Comment [MSOffice1]: Would payment be made prior to the application being submitted?

Also during 2015 the oil boilers at the Food Technology Centre, Loughry Campus were replaced. To maximise energy efficiency two wood pellet boilers were installed producing 250kW and 100kW respectively. This application was for a total boiler output of 350kW and was eligible to receive the lower tariff of 1.5p/kWh from the RHI. The larger boiler was designed to meet winter term time heating demand whilst the smaller 100kW boiler was designed to meet summer and holiday heat loads. **The application process for RHI began on 25th March 2015 although the application was not submitted until the 1st September 2015. Payment of RHI commenced from 7th July 2015.**

Comment [MSOffice2]: Same comments as above

The final installation of biomass boilers was for the new Food Innovation Centre at Loughry College. The aim was that this building would meet BREEAM building standards therefore a number of renewable energy technologies were installed including 50kW of solar PV, rainwater harvesting and wood pellet boilers. Again two boilers were installed to efficiently meet summer/winter demand with an output of 100kW and 30kW respectively. The RHI application was for a 130Kw boiler which attracted the lower tariff of 1.5p/kWh. **The application process for RHI began on 1st April 2015 although the application was not submitted until the 17th October 2015. Payment of RHI commenced from 7th October 2015.**

In all of the above installations where multiple boilers were installed CAFRE registered it as a single installation and claimed the lower tariff of 1.5p/kWh

NOTE: Submission date was outside of CAFRE's control and is the date OFGEM had everything in place to provide accreditation, not the date when application was first submitted. (Our application was held up until bank details provided by DARD Financial Reporting Division).

RHI Scheme – CAFRE Timeline – Details of Application process.

CAFRE RHI Payments

Up to December 2016 CAFRE had received a total RHI payment of **£22,704.29** from its four heating systems (6 boilers) (generating 1,303,812kWh of usable heat) and had spent **£58,890** on wood pellets and biomass chips.

CAFRE Training (we need to set out the training delivered from 2007 -2016 and the events where RHI was discussed)

1. Practical On Farm Renewable Energy (POFRE) Events

CAFRE organised a number of events between 2nd November 2010 and 29th October 2015 which involved seminars covering a range of Renewable Energy Technologies and Issues.

At a number of these events CAFRE staff delivered presentations on producing heat from biomass while DETI staff spoke on the RHI scheme. The list of events and the participation of CAFRE and DETI staff is shown in the following table.

Table 1: POFRE events:

Date	Venue	CAFRE Input Heat from Biomass	DETI Input RHI
2 November 2010	Greenmount		
1 November 2011	Greenmount		Yes
22 February 2012	Enniskillen	Yes	Yes
30 October 2012	Greenmount	Yes	Yes
13 February 2013	Enniskillen	Yes	Yes
29 October 2013	Greenmount	Yes	Yes
26 February 2014	Enniskillen	Yes	Yes
28 October 2014	Greenmount	Yes	Yes
18 February 2015	Enniskillen	Yes	Yes
29 October 2015	Greenmount	Yes	Yes

2. Heat from Biomass Workshops

Specific workshops on Heat from Biomass were held from the 9th October 2012.

Comment [MSOffice3]: Who organised them?

Year	Number workshops held	Total Number attending
2012/13	4	34
2013/14	4	160
2014/15	4	79

Specific workshops on wood fuel quality were held at Hillsborough on 8th September 2015 at which DETI staff spoke on the introduction of a Wood Fuel Suppliers List and on the 8th March 2016 at Enniskillen which included a talk on the maintenance of Biomass Boilers to ensure efficient running and longevity.

Comment [MSOffice4]: Who organised them?

Comment [MSOffice5]: Who delivered the talk?

CAFRE ran a series of 22 workshops entitled “Introduction to Renewable Energy” from 18th February 2014 until XXXXXXX attended by 370 participants during which reference would have been made to the RHI tariff structure. Participants seeking detailed information on the RHI scheme rules were directed to DETI as the lead Government Department for further information.

3. Knowledge and Technology Transfer (KTT) Events

KTT events demonstrating biomass boilers began on 7th May 2008 and are listed in the table below. What was the purpose of these events? – Simply to demonstrate the issues around using biomass boilers

Year	Number KTT Events held	Total Number attending
2008/09	7	222
2009/10	6	177
2010/11	9	404
2011/12	10	386
2012/13	3	63
2013/14	4	104
2014/15	2	33
2015/16*	7	197

CAFRE Heat from Biomass Project (Commencing XXX 2009)

Aim: To demonstrate currently available boiler technologies using energy from renewable sources and benchmark their costs.

Objectives:

- To become knowledgeable in the operation and management of biomass boilers utilising different fuel sources within one year of boiler installation on the CAFRE Estate.
- To transfer knowledge of Biomass boilers to farmers and growers to enable them to make an informed decision on the conversion from fossil fuel to renewable sources of heat energy through workshops and KTT demonstrations.
- To record numbers of farmers and growers adopting Heat from Biomass technologies.

Comment [MSOffice6]: Eric – This sits outside of a lot of the above . What does it mean and can you integrate it into the material above?