

Request for Information - FOI / EIR - Schedule of Records

DAERA 2017/0021

	Date of Record	Author	Title and TRIM reference (or location if not TRIM)	Brief description of record	Any exemption/ exception (s) claimed (indicate if whole record or parts thereof e.g. "lines 2-14 on page 3")
1	12 October 2012	DETI Private Office	GM845 Proposed Renewable Heat Incentive Scheme Regulations (Northern Ireland)	Cover e-mail from DETI Private Office to all Departmental Private Offices	Reg 12(4)(e) – withheld internal communications including departments
2	12 October 2012	Arlene Foster	Proposed Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012	Letter from DETI Minister to Ministerial Colleagues regarding establishment of scheme and draft Explanatory Memorandum	Reg 12(4)(e) – withheld internal communications including departments
3	15 October 2012	DARD Private Office	Proposed Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012	Cover e-mail from DARD Private Office to DARD Minister, Michelle O'Neill and DARD Special Adviser, Conor Heaney	Reg 12(4)(e) – withheld internal communications including departments
4	12 October 2012	Arlene Foster	Proposed Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012	Letter from DETI Minister to Ministerial Colleagues regarding establishment of scheme and draft Explanatory Memorandum	Reg 12(4)(e) – withheld internal communications including departments
5	20 December 2012	Renewable Energy Stakeholder Group	Request to meet to discuss final report on review of DARD Renewable Action Plan (REAP) 2010	Cover letter and copy of report	
6	11 January 2013	Michelle O'Neill	INV/493/2012 request to meet to discuss final report on review of DARD Renewable Action Plan (REAP) 2010	Response to request to meet	Reg 12(3) - Redact names of staff under Grade 5 along with their contact details

7	21 November 2014	DETI Private Office	Proposed Domestic Renewable Heat Incentive Scheme Regulations	Cover e-mail from DETI Private Office to all Departmental Private Offices	Reg 12(4)(e) – withheld internal communications including departments
8	20 November 2014	Arlene Foster	Proposed Domestic Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2014	Letter from DETI Minister to Ministerial Colleagues regarding making of a Statutory Rule	Reg 12(4)(e) – withheld internal communications including departments
9	21 November 2014	DARD Private Office	INFO: GM/585/2014 - Proposed Domestic Renewable Heat Incentive Scheme Regulations	Cover e-mail from DARD Private Office to DARD Minister, Michelle O'Neill and DARD Special Adviser, Liam Lappin with DETI Minister memo for information	Reg 12(4)(e) – withheld internal communications including departments
10	20 November 2014	Arlene Foster	Proposed Domestic Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2014	Letter from DETI Minister to Ministerial Colleagues regarding making of a Statutory Rule	Reg 12(4)(e) – withheld internal communications including departments
11	7 November 2015	[REDACTED]	[REDACTED] – Grant repayment.	E-mail query to Minister regarding issue with renewable heat incentive application	Reg 12(3) and 13(1) - Redact names of staff under Grade 5 along with their contact details and name of correspondent, business name, business type and location
12	26 November 2015	Michelle O'Neill	RHI Scheme	Response from Minister to email query regarding issue with renewable heat incentive application	Reg 12(3) and 13(1) - Redact names of staff under Grade 5 along with their contact details and name of correspondent, business name, and email address
13	10 November 2015	DETI Private Office	Renewable Heat Incentive Schemes (Amendment) Regulations (NI) 2015	Cover e-mail from DETI Private Office to all Departmental Private Offices	Reg 12(4)(e) – withheld internal communications including departments

14	9 November 2015	Jonathan Bell MLA	Renewable Heat Incentive Schemes (Amendment) Regulations (Northern Ireland) 2015	Letter from DETI Minister to Ministerial colleagues regarding amendment to Statutory Rule	Reg 12(4)(e) – withheld internal communications including departments
15	10 November 2015	DARD Private Office	Renewable Heat Incentive Schemes (Amendment) Regulations (NI) 2015	Cover e-mail from DARD Private Office to DARD Minister Michelle O'Neill and DARD Special Adviser Liam Lappin	Reg 12(4)(e) – withheld internal communications including departments
16	9 November 2015	Jonathan Bell MLA	Renewable Heat Incentive Schemes (Amendment) Regulations (Northern Ireland) 2015	Letter from DETI Minister to Ministerial colleagues regarding amendment to Statutory Rule	Reg 12(4)(e) – withheld internal communications including departments
17	19 November 2015	Private Office Attorney General	Re: Renewable Heat Incentives Schemes (Amendment) Regulations (Northern Ireland) 2015	Attorney General response	Reg 12(4)(e) – withheld internal communications including departments
18	5 February 2016	DETI Private Office	Request for a Decision by Urgent Procedure – closure of the Renewable Heat Incentive (RHI) Scheme	Cover e-mail from DETI Private Office to all Departmental Private Offices	Reg 12(4)(e) – withheld internal communications including departments
19	5 February 2016	Jonathan Bell	Request for a Decision by Urgent Procedure – closure of the Renewable Heat Incentive (RHI) Scheme	Letter to First Minister and Deputy First Minister requesting a decision by urgent procedure to close the Renewable Heat Incentive Scheme	Reg 12(4)(e) – withheld internal communications including departments
20	8 February 2016	DARD officials	Request for a Decision by Urgent Procedure – closure of the Renewable Heat Incentive (RHI) Scheme – A4 briefing note	Briefing for the DARD Minister on request for a decision by urgent procedure to close the Renewable Heat Incentive Scheme	Reg 12(4)(e) – withheld internal communications including departments

21	9 February 2016	OFMdm Private Office	EXEC-0021-2016 DETI request for a Decision by Urgent Procedure – closure of the Renewable Heat Incentive (RHI) Scheme	Cover email from OFMdm Private Office to all Departmental Private Offices and OFMdm officials	Reg 12(4)(e) – withheld internal communications including departments
22	9 February 2016	First Minister and Deputy First Minister	DETI Urgent Decision Request: closure of the Renewable Heat Incentive Scheme (RHI)	Response to DETI Minister on urgent decision request	Reg 12(4)(e) – withheld internal communications including departments
23	9 February 2016	DARD Private Office	INFO: Exec-018-2016 DETI request for a Decision by Urgent Procedure – closure of the Renewable Heat Incentive (RHI) Scheme	Cover e-mail from DARD Private Office to DARD Minister Michelle O'Neill and DARD Special Adviser Liam Lappin	Reg 12(4)(e) – withheld internal communications including departments
24	9 February 2016	First Minister and Deputy First Minister	DETI Urgent Decision Request: closure of the Renewable Heat Incentive Scheme (RHI)	Response to DETI Minister on urgent decision request	Reg 12(4)(e) – withheld internal communications including departments
25	8 February 2016	Brian Moreland Moypark	Meeting request with Minister O'Neill	Request for a meeting with DARD Minister and Mike Mullan, HR Director Europe to discuss the Renewable Heat Incentive.	Reg 12(3) – redact names of staff under Grade 5 along with their contact details
26	7 March 2016	Michelle O'Neill	Renewable Heat Incentive	Response to request to meet	
27	5 April 2016		INV-0066-2016: Request from Moy Park for a meeting to discuss the Renewable Heat Incentive	Email trail regarding Moypark meeting request	Reg 12(3) – redact names of staff under Grade 5 along with their contact details

FAIRNESS TEST

DAERA/2017-0021

Environmental Information Regulations 2004 - Exception 12(3) & 13(1) – Personal Data

Request Details:

- Copies of all recorded material (electronic or otherwise) to and from Michelle O'Neill, including material in official and private email accounts, which make reference to the Renewable Heat Incentive scheme.
- Copies of all notes and minutes of meetings (electronic or otherwise) between Michelle O'Neill, Special Advisers, Civil Servants and others in relation to the Renewable Heat Incentive scheme.

Documents:

- 6 INV/493/2012 response to request to meet to discuss Renewable Energy Stakeholder Group final report on review of DARD Renewable Action Plan (REAP) 2010
- 11 Email query to Minister [REDACTED]: [REDACTED] – Grant repayment.
[REDACTED]
- 12 Response from Minister to email query RHI Scheme
- 25 Meeting request with Minister O'Neill
- 27 Email trail regarding Moypark meeting request

In considering whether to release this information on the documents noted above, DAERA has evaluated

1. **The possible / likely consequences of disclosure on the individuals:** The third party has not given permission for the release of his details and therefore there would be a breach of the Data Protection Act.
2. **The reasonable expectations of the individuals, taking into account expectations both at the time the information was collected and at the time of the request** It would be reasonable for the individual to expect that this data is not released as part of any information request.
3. **The nature of the information itself** – personal identity.
4. **The circumstances in which the information was obtained** – as per 2, above.
5. **Whether the information has been or remains in the public domain** – Information not in the Public Domain.

6. **Any legitimate interests in the public having access to the information versus the rights of the data subject** – No legitimate public interest of disclosure of personal information to the public has been determined.

Conclusion

Having considered all the elements of the Fairness Test, DAERA has concluded that disclosure of personal information would be unfair. That being the case, we have decided that disclosure would breach the first Data Protection Principle, in particular the first element – fairness and so, EIR 12(3) & 13(1) provide an exception from disclosure.

DAERA/2017-0021
Public Interest Test (PIT)

Assessment of EIR request from Mr John Moore received 7 January 2017

Information requested;

- Copies of all recorded material (electronic or otherwise) to and from Michelle O'Neill, including material in official and private email accounts, which make reference to the Renewable Heat Incentive scheme.
- Copies of all notes and minutes of meetings (electronic or otherwise) between Michelle O'Neill, Special Advisers, Civil Servants and others in relation to the Renewable Heat Incentive scheme.

Subject of public interest test

- 1 Cover email from DETI Private Office to all Departmental Private Offices on Proposed Renewable Heat Incentive Scheme Regulations (Northern Ireland)
- 2 DETI Minister letter to Ministerial Colleagues Proposed Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012 establishment of scheme and Explanatory Memorandum
- 3 Cover email from DARD Private Office to DARD Minister, Michelle O'Neill and DARD Special Adviser, Conor Heaney
- 4 DETI Minister letter to Ministerial Colleagues Proposed Renewable Heat Incentive Scheme Regulations (Northern Ireland) 2012 establishment of scheme and Explanatory Memorandum
- 7 Cover email from DETI Private Office to all Departmental Private Offices on Proposed Domestic Renewable Heat Incentive Scheme Regulations (Northern Ireland)
- 8 Letter from DETI Minister to Ministerial Colleagues regarding making of a Statutory Rule
- 9 Cover email from DARD Private Office to DARD Minister, Michelle O'Neill and DARD Special Adviser, Liam Lappin
- 10 Letter from DETI Minister to Ministerial Colleagues regarding making of a Statutory Rule
- 13 Cover email from DETI Private Office to all Departmental Private Offices on Renewable Heat Incentive Schemes (Amendment) Regulations (NI) 2015
- 14 Letter from DETI Minister to Ministerial Colleagues regarding amendment to a Statutory Rule
- 15 Cover email from DARD Private Office to DARD Minister and Special Adviser - Renewable Heat Incentive Schemes (Amendment) Regulations (NI) 2015
- 16 Letter from DETI Minister to Ministerial colleagues regarding amendment to Statutory Rule
- 17 Attorney General response

- 18 Cover email from DETI Private Office to all Departmental Private Offices on request for decision by urgent procedure
- 19 DETI Minister letter to First Minister and Deputy first Minister requesting a decision by Urgent Procedure to close the Renewable Heat Incentive Scheme
- 20 Request for a decision by Urgent Procedure – closure of the Renewable Heat Incentive (RHI) Scheme – A4 briefing note
- 21 Cover email from OFMdfM Private Office to all Departmental Private Offices and OFMdfM officials
- 22 First Minister and Deputy First Minister response to DETI Minister
- 23 Cover email from DARD Private Office to DARD Minister, Michelle O'Neill and DARD Special Adviser, Liam Lappin
- 24 First Minister and Deputy First Minister response to DETI Minister

Exemption being considered

Environmental Information Regulations 2004 – Regulation 12(4)(e)

Reasons for Disclosure:

- The Department is keen to be as open and transparent as possible and acknowledges the EIR presumption in favour of disclosure.
- There is extensive public interest in the issues involved and the release of the information requested would inform public debate; and
- Disclosure would demonstrate the Department's decision making processes.

Reasons against Disclosure:

- The public interest in disclosure is being served by the current public inquiry, which will place all relevant information into the public domain through the appropriate legal route;
- The disclosure of this information other than through the channels available to the public inquiry – which is an exceptional circumstance - would inhibit the free and frank discussion of policy in the future, and less frankness and candour would damage the quality of advice and lead to poorer decision making;
- Such restraint would have considerable impact on the development of future policy.

Conclusion

In considering the Public Interest test in relation to the use of this exception under the EIR, DAERA fully recognises the presumption in favour of disclosing information. The Department in weighing up the arguments for and against disclosure above has concluded against disclosure as, disclosure would inhibit the free and frank discussion of policy in the future and the public interest in disclosure is being served by the current public inquiry, which will place all relevant information into the public domain through the appropriate legal route.

INV/493/2012

Received: 20/12/12

Ms Michelle O'Neill MLA
Minister for Agriculture and Rural Development
DARD Private Office
Room 438, Dundonald House
Ballymiscaw
Belfast
BT4 3SB

20th December 2012

Dear Minister,

The Renewable Energy External Stakeholder Group (REESG), whose membership is comprised of the 3 signatories below, was established in early 2011 by the then Minister of Agriculture and Rural Development, Michelle Gildernew MP.

We were asked to review the implementation and progress of the DARD Renewable Energy Action Plan (REAP) 2010 and to provide advice on the future direction for the agriculture and land based sectors in this regard.

Following engagement with a number of industry stakeholders and officials, we have now completed our review of the REAP and hereby present our final report (attached) for your Department's consideration.

Our review concludes that, overall, the DARD commitment and actions have had a positive impact on the development of renewable energy in the agriculture and land based sector. Our report also sets out ways in which we believe the Department can build on this progress and further develop the sector.

We would welcome an opportunity to discuss our findings and recommendations at your earliest convenience.

Yours Sincerely



Elaine Groom
Questor Centre



Michael Doran
Action Renewables



John O'Brien
ENERFO

Renewable Energy in the Land Based Sector
A Way Forward – Next Steps
Renewable Energy Action Plan

Report by the Renewable Energy External Stakeholder Group

12th December 2012

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2 Executive Summary

2.1 The Department of Agriculture and Rural Development (DARD) published its Renewable Energy Action Plan (REAP) in 2010. DARD's Climate Change and Renewable Energy Branch (CCREB) are the policy lead and are responsible for co-ordinating the delivery of the REAP. A key action of the REAP was to establish a Renewable Energy External Stakeholder Group (REESG), which was appointed by the Minister of Agriculture and Rural Development in early 2011. The group was appointed to:

- review progress based on the first year's delivery;
- provide advice;
- set the direction;
- add value to the delivery actions; and
- advise on future departmental actions required to drive the uptake of renewable energy.

2.2 Agriculture and the land based sector have an important role to play in the provision and utilisation of renewable energy. The industry needs to continue with the impetus already shown and drive forward under a sustainability agenda.

2.3 DARD through its REAP 2010 set itself a number of actions to incentivise and inform the sector. The REESG has critically reviewed the action plan and this reports sets out "The Next Steps" needed to continue the work to date.

2.4 This report will ensure that the direction of the REAP 2010 remains aligned and relevant to the current operating environment, and makes some proposals to drive forward through new innovations and further actions to be taken forward by the Department namely:

- To become an intrinsic part of policy development and demonstrate its visibility through such publications as the Sustainable Energy Action plan (SEAP).
- DARD to engage proactively with all other government departments to ensure the interests of the land based sector are properly reflected in current and future energy policy. For example:
 - DARD to be aware of and help to resolve possible issues associated with access to grid, grid connection costs, achieving a grid connection.
 - DARD to be aware of and help to resolve where possible planning issues associated with the length of time involved, complexities involved, etc.

- DARD to engage proactively with all other government departments to ensure the capability and potential contribution from the land based sector is fully recognised and integrated into current and future energy policy.
- DARD to make positive contributions to interdepartmental working policy and decision making groups.
- DARD to embed itself as a key renewable energy policy/decision maker.
- DARD to become pro-active and use NI Direct to showcase potential opportunities within the agricultural sector for businesses.
- Inform the sector of potential funding opportunities.
- Enhance the co-ordination and visibility with regards to all parties within DARD who are responsible for distributing funding, for example; 'Local Action Groups'.
- To carry out a scoping study of the effectiveness of DARD's input into renewable energy policy.
- DARD to demonstrate to the energy sector available opportunities for using agricultural resources within the market.
- Foresighting should be built into the DARD renewable energy research programme.
- Encourage Agri sector through continued rural investment to stimulate behavioural changes and educate the sector in relation to potential innovation technologies.

2.5 REESG highlighted that there is still a lack of 'joined up government' and concluded that this situation needs to improve if DARD is to be successful in delivering on its Renewable Energy Action Plan.

2.6 That links between the land based sector and business sectors needed to be established and promoted in order that renewable energy within the agricultural sector continues to play an important role in the Department's overall contribution to the developing policy framework on agriculture greenhouse gas (GHG) mitigation and adaptation.

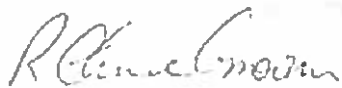
2.7 That the land based sector can benefit from exploiting opportunities that the production and utilisation of renewable energy offers and DARD should continue to support this through training and innovation projects.

2.8 The Group feels that in order to achieve future success of the agriculture and land based sectors DARD need to continue its five priority activities in:

- Innovation and Research
- Supply Chain Development
- Market Understanding
- Skills and Capability Development
- Providing Funding Opportunities

2.9 The REESG would like to thank the stakeholders who made presentations, and whose input helped to inform the findings of this report and the decisions in relation to the "Next Steps" for the land based sector. The REESG welcome the willingness of DARD to engage in this review process, and recognise the value to the sector of their contribution.

Signed



Elaine Groom



John O'Brien



Michael Doran

Renewable Energy External Stakeholders Group Members

3 Context

3.1 The Department of Agriculture and Rural Development has developed an Evidence and Innovation Strategy to set out the vision for the sector, and first published their Renewable Energy Action Plan in 2010 with the aim of providing a framework on how the Department could contribute to the creation of a favourable operating environment to enable the agricultural and forestry sectors exploit the opportunities associated with the development of renewable energy.

3.2 The action plan focused on six key priorities to exploit opportunities:

- attracting investment in emerging technologies suitable for adoption within the agriculture and forestry sector;
- associated with sustainable scale anaerobic digesters (AD) and linked technologies;
- relating to the production of heat and Energy Service Company (ESCO) development;
- relating to energy security;
- associated with integrated business solutions; and
- to ensure timely and effective delivery of the action plan.

3.3 Since the action plan was published in June 2010 business areas within DARD have commenced the implementation of the fifteen recommendations (Annex A) across the six priority areas. Progress is regularly monitored on the implementation of the action plan.

3.4 Whilst the scope of the REESG was originally primarily to review the outcomes of year one, changes within the DARD team and changes to the remit, scope and complexity have resulted in slippage of the delivery date of this report.

4 Review of the Renewable Energy Action Plan 2010

4.1 The principal task of this report was to review Year 1 of the implementation of the REAP and provide advice to ensure that delivery remains focussed and effective to the needs of a fast moving renewable energy sector. The focus was on activities, which aim to embed opportunities that exist for the rural sector in relation to production and consumption of renewable energy.

4.2 Terms of Reference (ToR) (Annex E)

4.2.1 The ToR for the review are summarised as follows:

- To provide advice, add value to delivery actions, review progress and advise on direction, by liaising with the delivery agents across the Department and AFBI:
- Engage with stakeholders, agencies and government as required, to understand the immediate and future needs of the sector and what can be realistically achieved by the Department against these requirements:
- Review of the Renewable Energy Action Plan 2010 after one year. Identify positives within the action plan which can be further developed. Identify and maintain an effective and relevant direction of travel in relation to future development of renewable energy in the land based sector.
- Give consideration to the elements of the REAP which can be further developed.

4.3 Methodology

- Stage 1. Review Phase
 - Members were asked to review the REAP
 - Review current renewable energy policies
 - Canvass Stakeholder views (as presented in Annex F)
- Stage 2. Analysis Phase
 - Review information as presented by DARD and Stakeholders
 - Analyse proposals and form recommendations
- Stage 3. Conclusion Phase
 - Prepare report and make recommendations

4.4 Review of progress against the Renewable Energy Action Plan

4.4.1 DARD's Renewable Energy Action Plan 2010 (REAP 2010) addresses 6 key priorities with a total of 15 aligned actions. The Department monitors progress against each action and to date all have actions have commenced implementation and continue to progress.

4.4.2 REESG acknowledge the work to date, and the progress made in implementing the REAP 2010 and welcome the continued investment in innovation and willingness to react to change in the agricultural and land based sectors. It noted that a number of the actions are on-going, for example development of the portal facility.

4.4.3 Successful implementations included the launch of Tranche 1 of the Biomass Processing Challenge Fund leading to capital funding being made available for on farm renewable energy technologies to be installed e.g. anaerobic digester and biomass boilers projects. We welcome the recent launch of the second tranche in September 2012.

4.4.4 Successful implementation has also been driven by "Practical on Farm Renewable Energy Events" hosted and managed by CAFRE at Greenmount College and Enniskillen Campus. The initial event saw 700 participants attend a number of seminars at Greenmount in 2010. 2011 saw over 1100 participants attend the Greenmount event which lead to a further event in February 2012 at Enniskillen campus with 750 attendees. Feedback from attendees proved extremely positive.

4.4.5 REESG also noted the constraints of the sector which included barriers to adoption and availability of finance in the current economic climate. There are issues associated with co-funding asset financing, which are limiting the scope for those seeking to develop projects, for example the 'Challenge Fund' does not permit asset financing as a co-funding option. The REESG believe there is an opportunity for DARD to bring stakeholders (funders, developers, farmers) together to breakdown communication barriers and facilitate a two-way knowledge gain.

4.4.6 REESG identified that considerable challenges remain with regards the integration of 'Renewable Energy' generation, and also overall approach to energy efficiency within the land based sector. Opportunities continue to remain unexploited in these areas. Exploitation of these areas would ensure resource efficiency, support carbon mitigation and energy security, whilst ensuring farming remains competitive and focussed on market opportunities in both traditional food output and development of renewable energy sources.

4.5 REESG Review Summary

4.5.1 The group's view is that by implementation of the REAP 2010, DARD is moving forward and has provided some opportunities within the land based sector to exploit the renewable energy market and embed itself in the renewable energy supply chain.

4.5.2 The group also noted the encouraging feedback from stakeholder engagement on the implementation of the plan and welcome the willingness of DARD to engage in this review process.

4.5.3 Having reviewed the information and taken account of the inputs from stakeholders, the REESG consider that there are areas that could be improved; REESG have made proposals that have the potential to add value to the current plan going forward. These are –

- i. DARD to be visibly active in the overall Renewable Energy Policy development in Northern Ireland
- ii. DARD to be a strategic part of the Northern Ireland Renewable Energy Policy and decision making process
- iii. Agriculture to be a strategic part of the renewable energy supply chain
- iv. Stimulate and facilitate the active development of renewable energy within the agri sector
- v. Underpin development by research and provision of information

5. Innovation Roadmap – Future Direction

5.1 Overview

5.1.1 Innovation support is a key part of DARD's policy commitment in relation to Renewable Energy

“to promote the opportunities presented by the development of renewable energy within the agri-food and forestry sectors and the wider rural economy; and to create a favourable operating environment for these sectors to exploit such opportunities.”

5.1.2 This is achieved through the following three mechanisms:

- Research
- Technology transfer and information provision
- Policy tools

5.1.3 The roadmap is based on the potential for the agricultural sector to optimise current practices in direct relevance to indigenous products and knowledge base; it also aspires to take account of the opportunity to embrace new products and practices in line with national, European and global trends and drivers. In some areas there is the potential for “Northern Ireland PLC” to become a world leader in specific and focussed areas of research and innovation in renewable/sustainable development and to stimulate major change in the local energy markets.

5.1.4 This roadmap is intended to encourage further discussion and elaboration of ongoing research and innovation needs. It attempts to set direction for the research currently being undertaken whilst considering advancements in other technologies and areas which require consideration. Overall the goal is to ensure that local knowledge, policies informed by it and the resulting technical development leading to successful innovation, are responsive to local needs in the global context.

5.1.5 The DARD Evidence and Innovation Strategy (2009-2013)¹, an overview of which is included in Figure 5.1, describes the framework for research and development to underpin evidence-based policy and delivery, and to promote innovation in the sector:

“DARD research funding will be concentrated primarily on applied and experimental development research activities. This is in recognition of the relatively modest research funding (in a national and international context) at our disposal and, therefore, the need to deliver maximum impact within a reasonable timeframe to meet our strategic policy objectives. This will not preclude absolutely the undertaking of broader, more basic R&D, if there is a sound argument for doing so and a local benefit can be identified.”

It acknowledges the breadth of the challenges (in line with a very active sector) and that renewable energy is only a small part of the focus.

Research Need	DARD Strategic Goals				Cross Cutting Research Strands (Chapter 11)
	Goal 1 Performance in the market place (Chapter 7)	Goal 2 Social & economic infrastructure of rural areas (Chapter 8)	Goal 3 Animal, fish and plant health and animal welfare (Chapter 9)	Goal 4 Sustainable environment (Chapter 10)	
Evidence	Impact of policy changes	Addressing the needs of rural communities	Costs, benefits & risk profiles of animal & plant disease prevention & control strategies	Understanding and improving the environmental footprint of the agri-food industry	Socio-economic research Responding to climate change: adaptation and mitigation
	Education & life-long learning		Improving detection & control of endemic animal diseases	Assessing & improving the impact of agri-environment programmes & activities	
			Developing improved Traceability systems	Understanding the environmental impact of changes in agricultural land use patterns and intensity	
			Animal welfare	Sustainable forestry	
			Aquaculture & fish health	Sustainable waste and manure management	
			Plant health	Sustainable fisheries and aquaculture	
			Disease horizon scanning – emerging risks	Flood risk management	
		Sustainable rural communities – the social economy	New techniques / approaches to disease prevention and control	Novel & innovative approaches to nutrient management.	
Innovation	Sustainable and competitive production				
	Food & innovative products and processes				
	Renewable energy – opportunities for land-based industries				
	Sustainable forestry				
	Sustainable fisheries & aquaculture				

Figure 5-1 - Evidence and Innovation Strategy Overview

5.2 Moving from research to innovation

5.2.1 According to the NI 2011 Baseline report on the Knowledge Economy:

“The bottle-neck in Northern Ireland’s economic growth and our inability to create jobs lies in the fact that we require a step-change in our efforts to build a knowledge economy”ⁱⁱ.

5.2.2 European research and innovation funding in the period 2014-2020 will be intended to underpin national regional initiatives to address the current economic situation; the shift to a low-carbon, resource-efficient and climate-resilient economy; and the wider global challenges that are shaping the future.

5.2.3 At local, national and European levels there is a major policy shift underway in response to increased global competition in the exploitation of research results. While research generates knowledge, innovation is focused on practical achievement - doing new things or old things in new ways.

5.2.4 Research funding has tended to follow a linear model of innovation in which there is a clear link between research outcomes and the achievement of commercial or policy-related goals. While this approach works in many technological areas, innovation is a *complex interactive process between opportunities and capabilities, which is cyclical and systemic rather than linear*ⁱⁱⁱ.

5.2.5 The direction of European policy has been influenced by the success of ‘high achieving’ regions in which common factors are the close alignment of research policy and activities with business needs and market opportunities, and close, cooperative relationships between research organisations and businesses. This has resulted in the following innovation trends:

- Strategic objectives encouraging technology/knowledge “push” and challenge “pull” working cooperatively;
- Increased emphasis on clustering – fostering the close cooperation between policy makers, research providers and end-user innovators and entrepreneurs;
- The promotion of Public-Private Partnerships leading to the development of industry-led strategies and programmes;
- Research and innovation funding viewed in the wider context of market frameworks, encouraging the use of instruments such as loans and incentives as alternatives to grants.

5.2.6 The local development of research strategy in climate change and renewable energy is also driven and influenced by the need to address:

- Europe 2020 targets
- greenhouse gas emissions 20% lower than 1990
- 20% of energy from renewables
- 20% increase in energy efficiency
- European Flagship Initiatives under Horizon 2020: specifically Innovation Union^{iv} and Resource Efficient Europe^v; and in the wider context the Lead Market Initiative^{vi}
- The European Innovation Partnership 'Agricultural Productivity and Sustainability' (Agricultural EIP)
- The development of Smart Specialisation Strategies

5.3 Skills and Educational Programme

5.3.1 In September 2010 DEL commissioned a research study to assess the skills required over the next ten years to support the growth of companies operating in the sustainable energy sector in Northern Ireland. The report was completed by Ecorys UK Ltd and published by DEL in September 2011. There is an opportunity to review its relevance to renewable energy in the agri-sector in Northern Ireland on a continual basis to inform the further development of initiatives offered through the College of Agriculture, Food and Rural Enterprise (CAFRE) and the Agri-Food and Biosciences Institute (AFBI)^{vii}

5.3.2 Connected^{viii} is an initiative involving Queen's University, University of Ulster, the six Regional Colleges and CAFRE to help businesses improve their performance by providing access to a broad portfolio of knowledge and technology support services. South-West College Innotech Centre is worth a particular mention with respect to development of digester and wind-turbine based R&D facilities. It is also developing a cooperation agreement with the QUESTOR Centre (led by Queen's University), in which AFBI is a partner, to enable demonstration of new technologies at these sites. Close liaison between CAFRE and the colleges will increase the opportunities for the development of links between on- and off-farm-based entrepreneurial activities and optimise the delivery of training to innovators.

5.3.3 There is an opportunity to strengthen and build on current activity and development of the sector through both these initiatives.

5.4 Agricultural European Innovation Partnership

5.4.1 The EU 2020 flagship initiative "Innovation Union"^{ix} introduced the concept of European Innovation Partnerships (EIP) as a new way to foster innovation. In keeping with the recent direction of EU

research strategy, the European Innovation Partnership (EIP) "Agricultural Productivity and Sustainability"¹⁸ has a strong focus on the encouraging the delivery of research outcomes through business and entrepreneurship. There is already strong emphasis on the desirability of a greater commercial focus in the agri-food sector in Northern Ireland and this has the potential to increase the alignment of DETI and DARD policies.

5.4.2 The agricultural EIP will be primarily implemented in the period from 2014-2020 through actions via two EU policies aiming to increase the effectiveness of innovation-related measures:

- Common Agriculture Policy (CAP) post 2013 and the development of Rural Development Policy.
- EU Research and Innovation Policy ('Horizon 2020')

5.4.3 This will address the challenges faced by European agriculture today: how to increase production and productivity; to respond to the growth in global food demand; how to improve sustainability and resource efficiency and address environmental issues (such as biodiversity loss). This EIP aims to provide a working interface between agriculture, bio-economy, science, advisors, and other stakeholders at EU, national and regional level. It aims to facilitate exchange among innovation actors, sharing good practice and embracing opportunities.

5.4.4 Areas of high relevance to DARD are:

- Increased agricultural productivity, output, and resource efficiency
 - Ensuring the efficient and sustainable use of resources including nutrients (phosphorus and nitrogen from manures); optimised use of energy, water, and genetic resources (diversity in biomass crops), and lower dependence on external inputs.
 - Reducing GHG-emission from animal production and soils.
- Innovation in support of the bio-based economy
 - Innovative solutions adapted to the whole supply chain as well as the growing bio-based economy.
 - Solutions for bio-refinery and recycling and the smart use of biomass from crops, forest, and food waste, valorising its cascading potential without reducing soil organic matter.
 - Breeding of animals and plants for achieving higher outputs, reduced emissions
- Biodiversity, Ecosystem services, and soil functionality
 - Innovation that enhances sustainable farm management and forestry practices benefits also eco-system services and soil functionality.

- Integrated agro-ecological systems, including the enhancement of soil biodiversity, carbon sequestration, water retention, ecosystem stability and resilience
- Developing innovative climate change adaptation strategies.
- Innovative products and services for the integrated supply chain
 - Develop and deploy innovative products, devices and services, establishing a sustainable supply chain.
 - New diagnostic tools would help to track environmental performance of farms.
 - Solutions creating new and more sustainable opportunities, and establishing institutional innovations (e.g. carbon markets).

5.4.5 The proposals for CAP reform are not finalised, but promise significant changes which may not be wholly beneficial for the land-based sector in Northern Ireland. The proposed future direction of CAP, including alterations in how direct payments are calculated, and promotion of measures of environmental benefit, will change farming in Northern Ireland. This provides a strong driver for innovation, and necessitates a revision of current methods and development of new practices. Whilst this may be viewed initially as a threat, particularly from an economic viewpoint, it provides opportunity, which must also be embraced. Support for innovation and a clear vision is thus imperative for the sector.

5.5 Smart Specialisation

5.5.1 The European Commission defines *Smart Specialisation* and highlights its importance as follows:

"...a strategic approach to economic development through targeted support to Research and Innovation (R&I). It will be the basis for Structural Fund investments in R&I as part of the future Cohesion Policy's contribution to the Europe 2020 jobs and growth agenda.

More generally, smart specialisation involves a process of developing a vision, identifying competitive advantage, setting strategic priorities and making use of smart policies to maximise the knowledge-based development potential of any region, strong or weak, high-tech or low-tech."

5.5.2 Simply put this means identifying R&I activities in which the region excels that will enable continued growth, and encouraging and supporting their further development. Strategies should be:

"...based on partnerships between regional authorities, the business community and stakeholders from research and academia and... []...should not only target science and technology-led

innovation but also foster innovation that is non-science based (i.e. stimulating entrepreneurship, innovation in the public sector and service innovation)."^{xi}

5.5.3 Consideration of smart specialisation needs to be a necessary part of the development of research strategy for the CCREB and DARD as a whole. The work of the Department of Enterprise Trade and Investment (DETI) Matrix panel¹ has already identified some areas of specialisation in NI; it is undertaking a Horizon Foresight Study into the market opportunities arising from the Sustainable Energy Market^{xii}.

5.6 Challenges Facing the Land Based Sector

5.6.1 REESG recognised the impact of the DETI Sustainable Energy Action Plan (SEAP), which sets out the Northern Ireland Executive's strategic approach to promoting sustainable energy and co-ordinates action across all Government Departments to create a broad platform from which industry can drive greater overall momentum.

5.6.2 REESG recognises that meeting Northern Ireland's renewables target will require focus and continued development in a number of technological areas. It also requires a societal change in the way that Agriculture is viewed primarily as a source of food.

5.6.3 There are still a number of challenges and developments to be addressed including installation and deployment of technologies; it is imperative that the public sector continues to play a role in supporting research, and with technology transfer.

5.6.4 The DARD Evidence and Innovation Strategy already sets out a vision for such an outward-looking view and the REESG supports the direction it provides:

"Given the finite budget available to DARD for research, not all programmes or projects designed to deliver this Strategy will commence at the same time. Instead, we (in consultation with our stakeholders as appropriate) will seek to prioritise research needs on the basis of a number of criteria, to include the following:

¹The Matrix Panel is the science industry panel formed to advise Government on the commercial exploitation of Research and Development. (science and technology in Northern Ireland)

- *Policy need;*
- *Strategic importance of the sector/issue;*
- *Extent to which work is already being funded elsewhere (no duplication unless a proven need); and*
- *Degree of co-funding available from other parties.*

Traditionally, the focus of DARD-funded research has been on agricultural production issues. However, current and future challenges, such as climate change and energy, halting biodiversity loss and underpinning rural communities, highlight the need for a much broader range of information across DARD's responsibilities."

- 5.6.5 REESG would encourage even more bold and ambitious aims. There is a need to encourage new thinking within and outside of the current agricultural supply chains. Currently primary production (agriculture) offers little in way of job creation or export. Due to the processor/retailer structure, farmers are traditionally 'price takers' and this inhibits innovative thinking. For example there is currently a limitation placed on funding innovation in the farming sector that restricts the assistance available from Invest NI, and there are very valid reasons for this (remit; also CAP issues etc.). However, this is an area where a fundamental shift in attitude would benefit the farming community, its supply chain (including research and innovation) and the economy as a whole.
- 5.6.6 There is also an issue associated with the inability to mix asset financing with traditional Government funding. This was apparent within the Tranche 1 funding round of the Bioenergy Challenge fund, where asset finance could not be mixed with Challenge monies because of the shared ownership which would arise. This situation will continue unless a more innovative way of mixing sources of finance can be developed.
- 5.6.7 Cross departmental cooperation on common issues is required if Northern Ireland is to take full advantage of the opportunities arising from renewable energy. The challenge for DARD and the land-based sector is to make its own success relevant to strategy delivery in other departmental bodies and encourage the incorporation of agri-sector know-how into relevant aspects their operational plans which have the potential to reinvigorate the rural economy.
- 5.6.8 Communities in Northern Ireland are very well placed to take advantage of such opportunities: farm sizes have remained small and people remain 'connected' to the land. In addition, the rural population is well organised into small towns, villages and hamlets and there is a reasonable population density supporting rural activities where small-scale energy supply and use can be

encouraged. From a business perspective, proportionately, there are nearly four times the number of agriculture businesses in Northern Ireland as compared to the rest of the UK (19.4% of total stock compared to 5.4%)ⁱⁱ.

5.6.9 The current system of conacre is under consideration for reform and this will have significant impact on land management. However we are uncertain about how this will evolve, and are not in a position to comment until firm proposals are available.

5.6.10 Where farms produce more renewable energy (especially heat) than can be used on the farm, there is potential to optimise the process and enhance output by seeking to diversify and generate new enterprises in the periphery of the farm to use this excess heat and energy. These can potentially be 'micro-hubs' of entrepreneurial activity; innovative farms already have this in mind. Overall, by inviting collaboration outside the sector, taking advantage of knowledge increases in other areas and by encouraging entrepreneurship and inventiveness, Northern Ireland can effect a positive change in agriculture. This is in keeping with the aspirations of the Agricultural EIP.

5.6.11 It should be borne in mind that Northern Ireland faces these challenges in common with many other regions, and that the process of innovation itself provides an opportunity for development of 'export potential' of new thinking and knowhow (research cooperation; consultancy services) which can lead to opportunities for local innovation and export in manufacturing, equipment, processes and services.

5.7 Further Development and Direction of DARD's Renewable Energy Research Programme

5.7.1 The primary aim of DARD's current Renewable Energy Research Programme (RERP) is to acquire and disseminate knowledge on the opportunities presented by the production and utilisation of renewable energy and sustainable waste management in the land based sector.

5.7.2 The REAP, delivered by the Agri-Food and Bioscience Institute (AFBI), is currently focused on targeted research and knowledge transfer projects which examine areas defined under five specific sub-programmes:

- Sub Programme 1 - Primary production, management, economics and environmental impact of biomass crops including
 - Methods of establishing, managing, harvesting, drying, chipping and utilising annual and perennial biomass crops and forestry waste.

- Evaluation of willow, hemp, miscanthus and other novel biomass crops, disease and pest management.
- Effects of bioremediation of farm dirty water, manures and sewage sludges on growth patterns, nutrient uptakes, soil water and mineral status, ground water quality, species diversity and related topics.
- Local environmental studies including effects on biodiversity, soil, water, nutrients etc.

- **Sub Programme 2 - Using Agri-Food Waste for Energy**
 - Evaluation of methods of maximising the biogas output from anaerobic digestion (AD) of animal manures and co-digestion materials.
 - Research into role of AD, and of post AD treatments, in improving nutrient management of nitrogen, phosphorus and potassium on Northern Ireland farms.
 - Information on the performance, management and economics and environmental impact of biogas combined heat and power (CHP) units.

- **Sub Programme 3 - Economics of Renewable Energy**
 - Research into the economic impacts of potential uptake of renewable energy enterprises by agriculture on agricultural systems and the environment, at local national and international level.
 - Factors influencing the achievement of EU and national government renewable energy targets.

- **Sub Programme 4 -**
 - Research into advanced renewable energy technologies for example gasification, two stage AD, pelletisation of AD products, second/third generation biofuels.
 - Review of emerging renewable energy projects for knowledge transfer.

- **Sub Programme 5 - Evaluation of Renewable Energy Technologies for knowledge transfer purposes**
 - The use of solar panels to meet typical on-farm needs for hot water, drying or for other purposes.
 - Applications for other renewable energy or energy efficiency technologies as they apply to farming situations (for example heat pumps, photo-voltaics, and ground source heating).
 - Information on the performance of the overall AFBI Environment and Renewable Energy Centre Scheme in terms of carbon saving, heat and electrical outputs, reliability and ease of management.

5.7.3 The REESG was asked to consider the progress of strategy development to date, and the scope out to 2020, making recommendations on the way forward with regard to research and innovation and the practical action DARD can take to support the on-going development of renewable energy within the land based sector. Specific comments and suggestions are set out in the section below.

5.8 Specific Comments and Suggestions

5.8.1 The region faces ever-moving challenges with respect to a great number of the issues faced by the land-based sector.

5.8.2 The sector within Northern Ireland is influenced externally by factors in GB, Ireland, Europe and Worldwide (Figure 5-2). It would be beneficial to recognise that as a result of its size and capability, it has the capacity to respond to outside influences faster and more innovatively, if stakeholders can identify what the best options are.

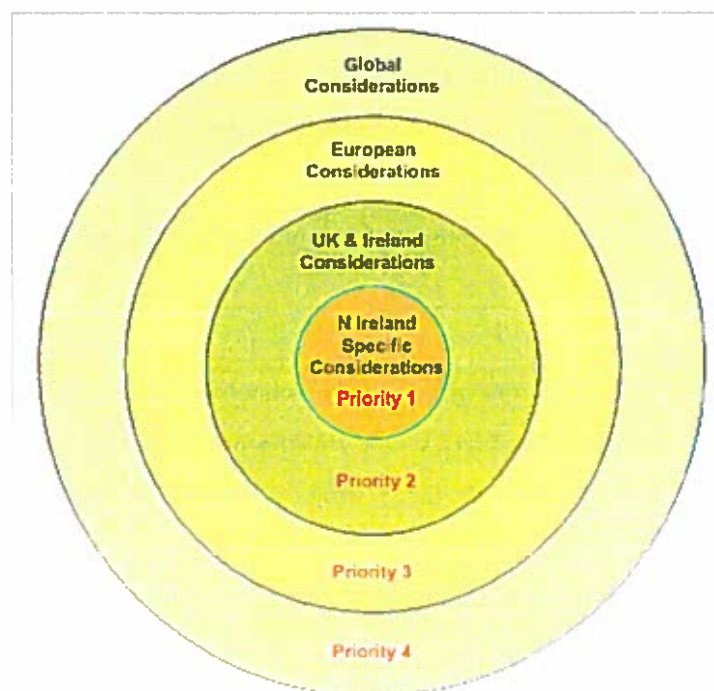


Figure 5-2 - Geographical Considerations

5.8.3 Figure 5-3 below highlights many of the barriers and opportunities that continue to influence strategy, using the PESTLE analysis model (which considers the Political, Economic, Societal, Technical, Legal and Environmental factors).

	Past	Current	2014	Medium	Term	2020
Political	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> EU Directives & Targets <input checked="" type="checkbox"/> UK Bioenergy Strategy <input checked="" type="checkbox"/> Regional strategy & targets for renewable energy & climate change <input checked="" type="checkbox"/> Planning & regulatory timescales 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> DARD REAP <input checked="" type="checkbox"/> Electricity Market Reform <input checked="" type="checkbox"/> Sustainability criteria for solid and gaseous biomass, <input checked="" type="checkbox"/> Planning & regulatory timescales 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Energy Security <input checked="" type="checkbox"/> Effects of CAP Reform <input checked="" type="checkbox"/> Cost effective green house gas emissions reduction & achievement of the 2020 renewables target 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Developing the rural economy <input checked="" type="checkbox"/> CAP Reform - reductions in single farm payments <input checked="" type="checkbox"/> Carbon Trading to reflect true cost of fossil fuel <input checked="" type="checkbox"/> Energy security and price stability <input checked="" type="checkbox"/> Farm diversification opportunities <input checked="" type="checkbox"/> Extension to the Gas Network <input checked="" type="checkbox"/> Need for economics policy focus on R&D <input checked="" type="checkbox"/> Farm gate vs retail prices 	<ul style="list-style-type: none"> ◆ Uncertain policy 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Farm diversification opportunities <input checked="" type="checkbox"/> Fuel and energy costs and security <input checked="" type="checkbox"/> Contribution of land-based energy sector to economy ◆ Maturity of supply chains ◆ Farm gate vs retail prices
Economic	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Slow development of incentives (e.g. Renewable Heat Incentive (RHI)) <input checked="" type="checkbox"/> Uncertainty around support measures <input checked="" type="checkbox"/> Cost & challenge of grid connection <input checked="" type="checkbox"/> Farm income <input checked="" type="checkbox"/> Lack of knowledge by bankers for development & structure of projects ◆ Farm gate vs retail prices 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Increase value / use of waste <input checked="" type="checkbox"/> Global competition; <input checked="" type="checkbox"/> Use of heat on/off farm <input checked="" type="checkbox"/> Supply Chain Development <input checked="" type="checkbox"/> Access to bank funding <input checked="" type="checkbox"/> Long term availability of ROCs & RHI <input checked="" type="checkbox"/> Off-sets for carbon mitigation <input checked="" type="checkbox"/> Energy security and prices ◆ Farm gate vs retail prices <input checked="" type="checkbox"/> Impact of AD rush on conacre prices 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Innovation in rural areas <input checked="" type="checkbox"/> Knowledge based jobs in rural areas <input checked="" type="checkbox"/> Additional use of land <input checked="" type="checkbox"/> Counter farm abandonment <input checked="" type="checkbox"/> Renewables increasingly seen as essential for jobs, prosperity & security of supply 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Innovation in rural areas <input checked="" type="checkbox"/> Create specialised knowledge based jobs in rural areas <input checked="" type="checkbox"/> Behaviour change (EIP "do more with less") 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Innovation in rural areas 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Renewable Energy as a high value output ('crop') <input checked="" type="checkbox"/> Recognition of carbon value of different management regimes <input checked="" type="checkbox"/> Increased processing efficiency ◆ ICT for sensing, control and automation
Social	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Resistance to change <input checked="" type="checkbox"/> Persistent misconceptions of challenges & technology 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Agflation <input checked="" type="checkbox"/> Rural jobs and employment <input checked="" type="checkbox"/> Amenity value of countryside (including tourism) <input checked="" type="checkbox"/> Food vs fuel debate 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Gas grid connection <input checked="" type="checkbox"/> Concern over lack of grid investment and development ◆ Increased cooperation/ technology trading among farmers (AD, wind, biomass) ◆ Reduced tillage (CAP reform, greening) 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Sustainable management of resources ◆ Environmental impact assessments ◆ Desire for short supply chains <input checked="" type="checkbox"/> Soil Strategy (Europe) <input checked="" type="checkbox"/> Land-Use Planning ◆ Biodiversity <input checked="" type="checkbox"/> Use of digestate as a valuable resource <input checked="" type="checkbox"/> Slurry spreading restrictions 	<ul style="list-style-type: none"> ◆ Impacts of intensification ◆ Sustainability ◆ Biodiversity <input checked="" type="checkbox"/> Competition for natural resources <input checked="" type="checkbox"/> Outcomes of environmental measures 'greening' under CAP reform 	
Technical	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Grid underdevelopment <input checked="" type="checkbox"/> Infrastructure for heat distribution is non-existent. <input checked="" type="checkbox"/> Energy distribution infrastructure - poorly developed, connection costs and piecemeal approach <input checked="" type="checkbox"/> Gaps in expertise 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Greater emphasis on "Innovation" <input checked="" type="checkbox"/> Uncertainty in standards and requirements <input checked="" type="checkbox"/> High risk due to potential for emerging disruptive technologies <input checked="" type="checkbox"/> Cost and timescales for high quality technical R&D 	<ul style="list-style-type: none"> ◆ Reduced tillage (energy use & GHG) <input checked="" type="checkbox"/> Land use change (incl. sustainability criteria) ◆ Nutrients <input checked="" type="checkbox"/> Slurry spreading restrictions ◆ Fertiliser use and cost ◆ Biodiversity ◆ Water protection 			
Environmental	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Increase value / use of waste change in land usage trends <input checked="" type="checkbox"/> Interpretation varies between planning offices ◆ Fertiliser use ◆ Nitrates Directive 					

Figure 5-3 - Key Trends and Drivers: PESTLE Analysis Opportunities; Barriers; ◆ Neutral Issues

5.8.4 In light of the current status and uncertainty around these influences, REESG considers the Renewable Energy Research Programme to be comprehensive in its scope and for the most part highly appropriate to the needs of the sector; specific comments are added below:

- **Sub Programme 1 - Additional suggestions:**

- Consider if new crops for non-energy purposes can also offer energy production from by-products. For example can “old-fashioned” crops have a role? (e.g. linseed as a nutraceutical source, while fibre is developed for new uses such as biocomposites). Such crop diversification may be of value considering the ‘greening’² challenge within CAP reform.
- There may be scope to pioneer mixed crops for ensilage as a high biodiversity energy crop for biogas production.
- Innovation should also consider new ways or new technology (such as GPS and computer-based control systems) for growing existing (energy) crops – can imaging be used to assess encroaching disease on control harvesting?
- It is suggested that any further activity related to Miscanthus, given its performance in non-ideal conditions, future climatic uncertainties, and difficulties in its use due to high chloride levels with present technologies, should be reviewed.
- Potential for use of biochar as a soil amendment;
- There is concern in Europe for soils and resistance to the development of a Soils Policy. There is an opportunity to develop a Soil Strategy ahead of Europe.

- **Sub Programme 2 - Additional suggestions:**

- Chicken litter is a major concern and an opportunity (also seen as so by DETI)
- Consider the impact of emerging microgeneration technologies, on future farm-based energy generation. This encompasses the potential of micro-CHP and use of fuel cells using natural gas (and biogas); the latter would provide high-grade heat for on-farm diversification and entrepreneurial activity
- Ensure there is awareness of new technologies coming out of Europe due to resource recovery drivers
- Consider opportunities from emerging technologies for resource recovery as well as energy production

² ‘Greening’ refers to environmental measures that are proposed under the reform of the Common Agricultural Policy.

- Recovery of sulphur from biogas and its potential addition as a soil amendment
- **Sub Programme 3 - No additional suggestions**
- **Sub Programme 4 - Additional suggestions:**
 - Consider opportunities from emerging supercritical water oxidation technology (if current technical barriers can be overcome).
 - Information on developments in biogas upgrading and scale at which it is economic; investigate a study of economic model, infrastructure and (with DETI) policy requirements of "farm-gate" sale of biomethane
 - Monitor developments in the production and utilisation of algae for energy and seek to understand its potential contribution, if any, for the land based sector in the areas of: microalgae cultivation for biomass, biofuel, or nutrient recovery from wastewater; digestion of micro or macroalgae for biogas; benefits of residues for digestate land application.
- **Sub Programme 5 - Additional suggestions:**
 - Consider how knowledge transfer from CAFRE and AFBI can contribute to the development of skills needed within the renewable energy sector in NI^{xiii}.
 - Opportunities for the development of "contract drying" to utilise excess heat generated through on-farm Combined Heat and Power (CHP)

5.9 Additional Recommendations for direction to 2020

5.9.1 The REESG and the Department realise the challenges of financing the development of anaerobic digestion and, at the suggestion of CAFRE, the REESG contacted the National Non-Food Crop Centre (NNFCC) in relation to the "Anderson Model" AD Calculator, provided through the NNFCC website. NNFCC have agreed to modify the model to increase the ROCs value in line with the support available in Northern Ireland. It is suggested that better awareness of this model be created, perhaps through direct link from the Biomass Portal, however the NNFCC is now financially self supporting and therefore levies a charge (currently £70 +VAT) for registration to access the model.

5.9.2 AFBI is a partner in the development of the Centre for Advanced Sustainable Energy (CASE); an energy Competence Centre for Northern Ireland being developed by the QUESTOR Centre with funding from Invest NI of £5 million over 5 years. Each of the partner institutions (AFBI, University of Ulster, Queen's University) stand to gain considerable knowledge from working on industry-led projects

within this centre. As there is uncertainty about the eligibility of farm-based companies for Invest NI funding in this context, DARD may wish to consider if funding could be made available for farm-based innovation acting collaboratively with CASE industry-led projects.

- 5.9.3 The Agricultural EIP is important to the future direction of research under Horizon 2020 and the participation of DARD and AFBI in networks contributing to the development of the Strategic Implementation Plan should be encouraged.
- 5.9.4 Regions of Knowledge (RoK) projects have been important under the Framework Programme 7 in helping region develop Action Plans for development of specific areas of expertise and facilities stimulating innovation. Northern Ireland's application in January 2012 for a RoK in the field of biogas was unsuccessful; however there have been many projects in the area of biomass and bioenergy and the Action Plans from these projects are generally publicly available documents. DARD may wish to consider commissioning a preparatory action to incorporate review of such documents, develop increased collaboration with appropriate regions, and develop an outline plan for areas of specialisation that could be a focus of an application in the future.
- 5.9.5 Increased collaboration with regions that have high levels of grass dependent agriculture in less developed European countries (Hungarian Plains, Slovenia, Romania) or regions with high food production (e.g. parts of Poland) would provide opportunity for export of know-how and innovation. RoK will not continue in its present form but is expected to be developed as a modified instrument under European Structural Funds and preparation for this is to be encouraged.
- 5.9.6 The Agricultural EIP provides a vision for increased innovation and cooperative development as a means to achieving its aims. The Department, CAFRE and AFBI have placed stakeholder engagement high on their agenda and this is very welcome. There is an opportunity to go further with the development of a Foresight Initiative (a sort of "Blue Skies – Green Fields" Forum for the interaction of the research base, farmers, businesses and entrepreneurs) that would allow the sector to react and adapt to the latest developments in European policy and research. The recent Knowledge Exchange Events organised by CAFRE already provide a good basis for this, but a continuous process of dialogue could be set up through an informal network operating on basic guidelines and culminating with a workshop at this annual event. It should also perhaps include some sort of web-based element that may attract European funding. Northern Ireland still operates on strong informal networks and with care these could be mobilised to develop visionary ideas for the region (in line with the needs of the EIP).

6. Funding Structures and Investment

6.1 REESG acknowledged that whilst DARD provided grant funding for renewable energy through the Biomass Processing Challenge Fund, it felt that within the agricultural sector many farmers and land owners are often unaware of the variety of funding sources available. More effort should be put into finding a solution for the conundrum which prevents mainstream funding from partnering with asset financing options. General awareness of finance needs to be increased and this should include knowledge of best practice in the industry. Tools and guidance to improve access to funding need to be developed, simplified and to be available to the agri-industry for all scales of development.

6.2 Access to development finance will also be pivotal to establishing the land based sector as a key member in the renewable energy supply chain, this will require major advances in the development and deployment of a number of technologies. For example, the renewable heat target will be built upon a much wider development and uptake of such sources as geothermal, solar and biomass heat which will rely on access to the Renewable Heat Incentive for support.

6.3 Members noted that the costs of developing renewables also have wider impacts.

6.4 Figure 6-1 (Annex C) highlights financial streams where grants are available for the land based sector, but a major challenge of getting the financial institutions to buy into technological advances remains a major constraint.

6.5 Further Funding Sources

6.5.1 REESG welcomes the aspiration of DARD that an eventual 50% of its R&D should be put out to competitive tender, and its overall attitude to private sector contributions funding. Funding is challenging for those in all research areas depending on research for employment and a strategy of developing more diverse sources of funding is necessary. It is for this reason that increased interaction with / between commercial and research organisations is seen as the way forward.

6.5.2 There is also a general trend for the 'hotspots' of innovation to happen at interfaces of knowledge and between business sectors where there is the greatest exchange of ideas and know-how. The recommendations above are in keeping with these trends.

6.5.3 The incorporation of diverse funding sources into the business models of research institutions frequently follows the model of the German Fraunhofer Institutes, in which the focus is applied research and its application (see below) and which contrasts with that of the more fundamental research undertaken in the Max Plank Institutes.

6.5.3.1 Fraunhofer Business Model^{iv}

“The Fraunhofer-Gesellschaft receives funding both from the public sector (approximately 30%) and through contract research earnings (roughly 70%). As a consequence, the Fraunhofer-Gesellschaft operates in a dynamic equilibrium between application-oriented fundamental research and innovative development projects. The Fraunhofer-Gesellschaft develops solutions of direct practical value to technical and organizational problems and contributes to the wide-scale implementation of new technologies. Companies of all sizes in the manufacturing and service sectors benefit from contract research. The Fraunhofer-Gesellschaft represents an important source of innovative know-how for small and medium-sized companies that do not maintain their own R&D departments.”

6.5.4 Renewable energy offers considerable opportunity for development of diversity of research income and one key to this is the ability to partner with companies where there is the opportunity for in-kind (if not direct) contribution to projects to be made to ensure delivery of innovation into the market-place.

6.5.5 Development of such partnerships opens additional funding routes such as the Small Business Research Initiative (SBRI) of the Technology Strategy Board as well as additional sources of funding from Europe under the Capacities programme (in Framework Programme 7) – Research for the Benefit of SMEs and Eco-Innovation funding strands. AFBI researchers have previously pursued such sources (e.g. FP6 CRAFT) effectively. Other areas of funding such as Interreg and Life+ have also previously been sources of income and with the encouragement of DARD these may be made use of to develop know-how to inform policy development as well as meeting local innovation needs.

6.5.6 Additional funding from non-departmental sources also allows researchers more freedom to pursue areas, such as international cooperative research, that are peripheral to departmental strategy but may have value in the development of regional smart specialisation, and delivery in the longer-term of economic goals as the knowledge is used to develop or even create new businesses.

7 Continued Strategy after 2012 – A Vision for the Future

- 7.1 When reviewing the 'Renewable Energy in the Land Based Sector, A Way Forward' the Summary of Recommendations and Targets for 2013 outlines recommendations, which in part seek to externalize the renewable energy potential from The Land Based Sector, seeking to position Agriculture as a central component within the NI PLC Renewable Energy Strategy delivery infrastructure and supply chain.
- 7.2 Upon further review of the fifteen actions detailed within the 'DARD Renewable Energy Action Plan 2010, a more conservative internal focus seems to be prevalent. When considering the direction for the coming years, the REESG have identified this as an area for prompt and detailed review.
- 7.3 Review the Land Based Sector's total offering, analysing the interplay between current key outputs such as Dairy, Poultry, Timber, etc., and how each in turn utilises and optimises energy, not only in the achievement of the output, but also considering how the process could be optimised overall to present opportunities in relation to Energy Efficiency and Production. This would essentially take the form of a complete review of Agricultural output to identify potential opportunities.
- 7.4 Whilst there is excellent work currently underway in many areas of the Land Based Sector, a renewed focus on a more Integrated Agriculture Strategy, whereby the question is not whether Food Crops or Energy Crops take priority, but the focus of research and development must be to address how can the Land Based Sector can optimise Food production and Energy potential simultaneously, thus driving food exports, whilst minimizing the importation of fossil fuels (Figure 7-1).

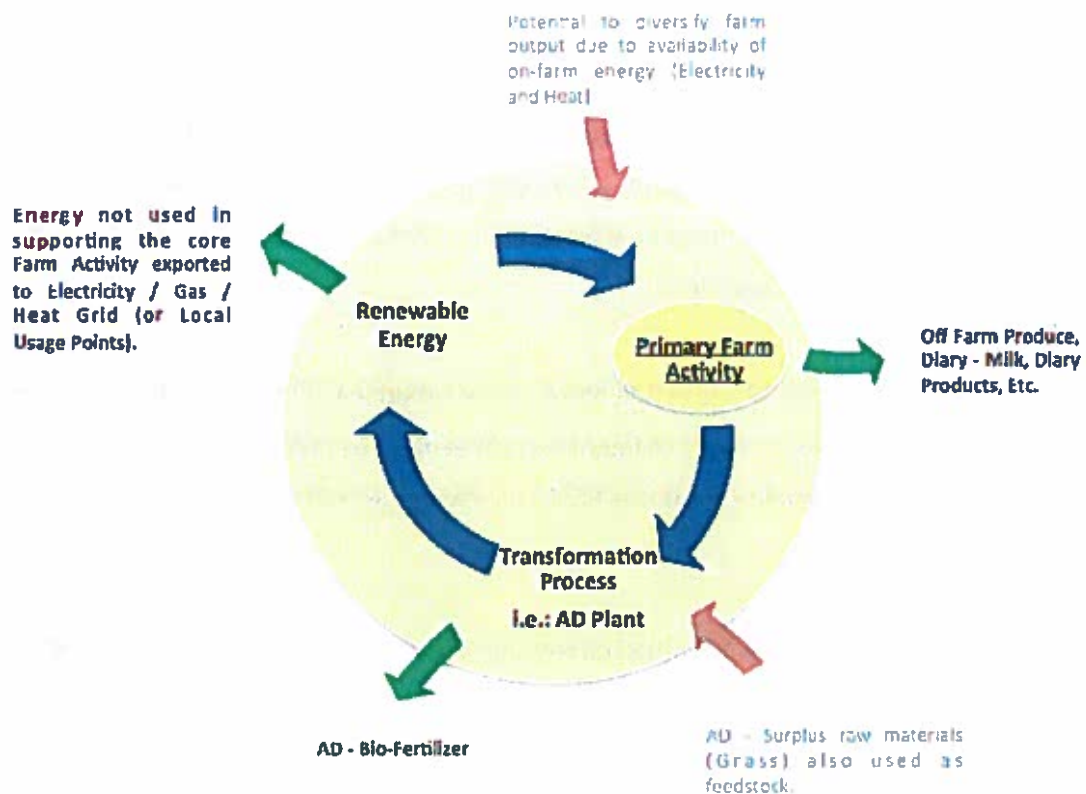


Figure 7-1 - Integrated Renewable Energy Approach within the Land Based Sector

7.5 Whilst there is excellent work currently underway in many areas of the Land Based Sector, a renewed focus on a more Integrated Agriculture Strategy, whereby the question is not whether Food Crops or Energy Crops take priority, but the focus of research and development must be to address how can the Land Based Sector can optimise Food production and Energy potential simultaneously, thus driving food exports, whilst minimizing the importation of fossil fuels (Figure 7-1).

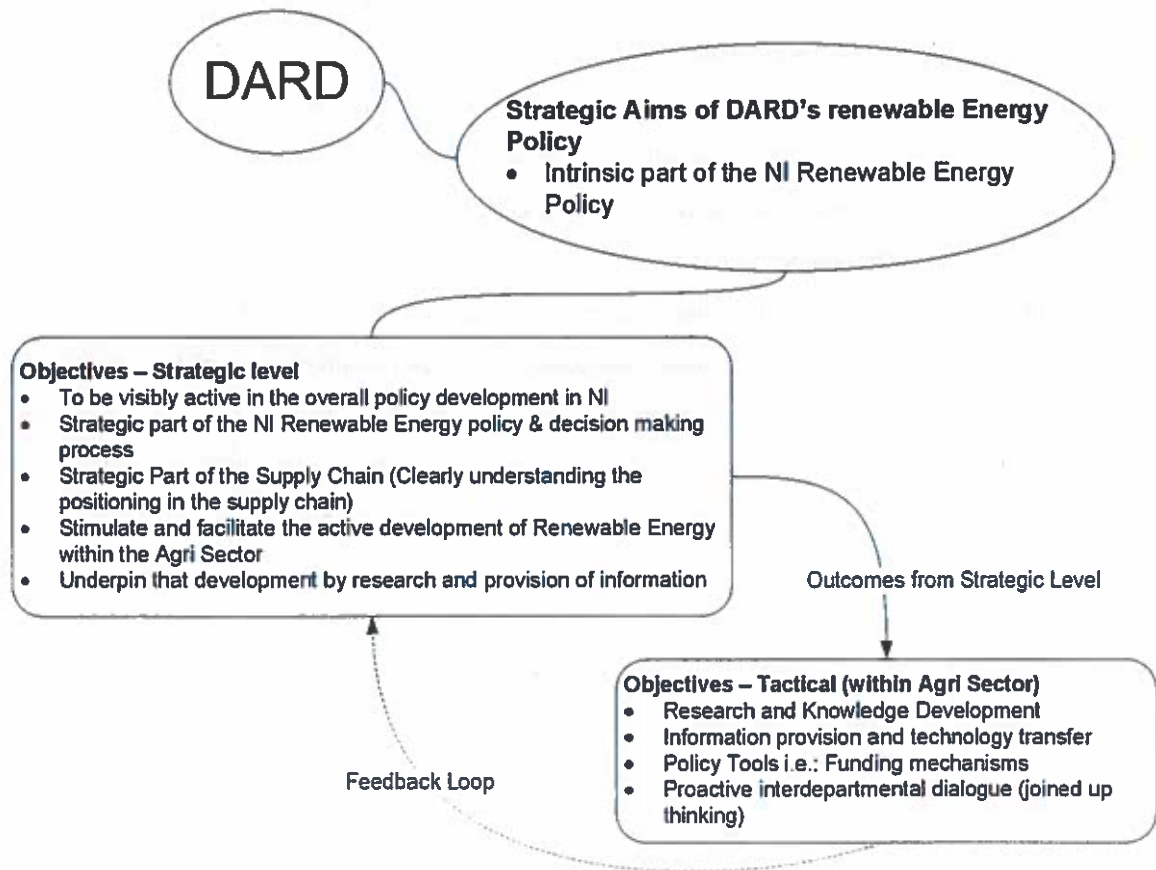
7.6 Challenge and support both government and the private sector to develop and implement a truly integrated strategy:

- This would involve working closely with other Departments to ensure the policy and legislative drivers are in place to support such an approach.
- Challenge the current *modus operandi*. Are there aspects of the Northern Ireland Land Based sector which are not delivering, and carry out research to understand the broader socio economic implications.

- Explore opportunities around the use of on-farm heat in the production of crops, displacing imported produce, whilst optimising the 'on farm' energy opportunities.
- 7.7 Challenge all Government departments to align future energy policy and strategies to optimise the energy potential from the Land Based Sector.
- 7.8 Whilst the 'Sustainable Energy Action Plan 2012-2015 and beyond' (DETI, 2012, p. 6) sets out for the targets to be achieved by 2020;
- 40% electricity consumption from renewable sources by 2020
 - 10% contribution from renewable heat by 2020
- (DETI, 2012, p. 1) outlines a need for a "complete revolution in the way we heat our homes, power our businesses and move within the Region" if we are to achieve 2050 targets. The REESG suggests that the foundations need to be put in place in the near future. Risks associated with uncertainties around technological developments can be mitigated by seeking to deploy such strategies as 'centralised heat networks' in metropolitan and / or industrial areas. Such a move would mitigate risk, by facilitating the deployment of new technological advances at a central points going forward, whilst giving confidence to the sector to invest in research and development to meet these new challenges.
- 7.9 This approach would assist in mitigating risk by enabling new and updated technologies to be deployed centrally to such schemes.
- 7.10 Northern Ireland, whilst impacted by near neighbours with regards Energy Policy and Markets, has, due to its size, the potential not just to follow Global Trends and Initiatives, but to seek to develop new knowledge. Northern Ireland must seek to position itself as a centre of excellence. DARD must seek to position the Land Based Sector as the foundations of this initiative.
- 7.11 Aspiring to become a centre of excellence would not only support the needs of Northern Ireland from an energy perspective, but would also enhance the economic output from the Region, as we seek to export best practice solutions and services once developed.
- 7.12 The REESG noted that whilst progress had been made there continue to be major challenges ahead for industry and for the Department.

7.13 Members felt that more strategic and specific aims were required, and that the Department, whilst concentrating on the ongoing actions, should ensure that the sector is embedded more in the renewable energy supply chain. The group felt that strategic aims as outlined below were appropriate.

7.14 Renewable Energy External Stakeholder Group Future Strategy



7.15 Following consultation with key stakeholders and the Renewable Energy Coordination Group within DARD, a number of actions were highlighted to progress the renewable energy agenda. These actions are not limited to areas within which DARD has taken the lead, but are also focused on the interdepartmental relationship with other Government bodies.

7.16 Having developed additional key objectives, the group added actions (Annex B) which are considered central to the success of the Department's future strategy for the agricultural and land based sectors, when addressing the growing need for renewable energy. These also include the recommendation that a better system of metrics, to measure progress, should be implemented. It is important to capture more formally, with structured metrics, how the sector is progressing and to report against those metrics.

8 Conclusion

- 8.1 REESG suggest that a further review of the implementation of the REAP is conducted towards the end of 2014 to ensure that DARD remains able to deliver on targets set, and that the technologies and research supported continue to be relevant to the needs of the land based sector within Northern Ireland.
- 8.2 DARD has been active in promoting Bioenergy in the Land Based Sector. This proactive approach should continue in a way that ensures that the Department in looking outside its own boundaries to interact with other Departments and agencies.
- 8.3 It is crucial that DARD is at the centre of policy development, (and is seen by other Departments, including DETI, to be at the centre of policy development) for initiatives in the Land Based Sector.
- 8.4 DARD should strengthen its links and collaboration with Invest NI. A more formal relationship, with regular planning and implementation meetings, would be desirable, to maximise the opportunities for energy in the Land Base Sector. The Group recognises the work that CAFRE and AFBI have done, in promoting Bioenergy, and encourages both organisations to continue to develop and support innovation.
- 8.5 A more formalised Foresight programme should be built into DARD's Renewable Energy Research Programme. This should be added to the 5 key priority areas which have already been identified, namely:
- Innovation and Research
 - Supply Chain Development
 - Market Understanding and stimulation
 - Skills and Capacity Development (Including recognising the changing demands of the sector and responding with suitable deliverables)
 - Providing Funding Opportunities. (This includes expanding the current activities to engage with and disseminate information on funding, strengthening links with the banking sector, and engaging with the asset finance sector).
- 8.6 The REESG recognises that issues associated with Grid connection and Planning have a significant effect on the ability of the sector to develop Bioenergy projects. While these issues are patently not within DARDs direct area of control, the Department should take a more active role, on behalf of the

Land Based sector, in influencing the decision making processes in these two areas.

- 8.7 The REESG has prepared an initial Innovation Roadmap. This is intended to set a direction for future research and innovation and will need to be further developed, refined and revisited on a regular basis by DARD. This will be a key part of DARD's activity going forward, providing a vision for future opportunities, focussing on developments in technology and innovation and providing an opportunity for stimulating debate with stakeholders.
- 8.8 Northern Ireland is in a unique position, not just to follow international or global trends but to position itself as a centre of excellence for specific technologies and solutions. It has a diverse land based sector, with potential to improve and innovate. It has a dedicated Research base in AFBI, which has world class expertise that should be aligned and harnessed to NI PLC's requirements. There is recognition throughout the sector that CAFRE has been effective in identifying opportunities and in upskilling the industry to deliver. Northern Ireland is also at a scale where change is manageable and can be effective in the short term.

9 Annex A - Further Development of the DARD Renewable Energy Action Plan 2010

The following comments were made with regard to whether the current actions should continue and their future development:

Action No.	Action details:	Current Status:	Recommendation:	Potential Further Actions Based on Recommendation:
1.	Host/Organise a knowledge exchange event targeting production and utilisation of renewable energy	November 2010 and 2011 – Events hosted in Greenmount with 700 attendees and 1500 respectively. February 2012 – Event hosted in Enniskillen – 750 attendees	Continue	<p>Future events to consider:</p> <ul style="list-style-type: none"> Emerging technology Finance Preparation of business cases/ bids EU projects Public awareness Balmoral Show Schools Programme Consider BBC 'Big Weather' approach Consider potential involvement of IAFLU students in developing schools/public programme Consider animated demonstrations Consider role for other organisations where existing knowledge can be leveraged.
2	Development of an Innovation Roadmap based on the knowledge exchange event.	Initial investigations have been carried out.	Continue	<ul style="list-style-type: none"> REESG executed a PESTLE analysis which can be utilised by DARD to inform the discussion around the development of an Innovation roadmap

Action No.	Action details:	Current Status:	Recommendation:	Potential Further Actions Based on Recommendation:
3	Further develop the renewable energy visitor experience at AFBI Hillsborough.	AFBI has hosted a large number of visiting groups and VIP visitors (EU, Government, Industry, farming, environmental, student etc). Also held AD and Biomass Crop Open Days attended by over 200.	Requires further development but should continue.	<ul style="list-style-type: none"> • More proactive approach to the visitor experience • Publicity • Targeting and profiling of visitors (including Finance Sector) • Targeting of school children, primary and post primary.
4	Continue to support the Renewable Research Programme carried out at AFBI.	Currently multiple research projects being conducted by AFBI. New proposals accepted by PMB4 in 2012.	Continue	<ul style="list-style-type: none"> • Development of ongoing Renewables Research Programme to: <ul style="list-style-type: none"> ○ Consider stakeholder feedback from presentations 23 May 2011 ○ Take account of Innovation Road Map once developed
5	Focus on renewable energy industry training and knowledge exchange programmes at CAFRE	CAFRE continue to carry out training based on need. Feedback from KEP events informs training.	Continue	<ul style="list-style-type: none"> • Continuous improvement methodology to include staging appropriate advice and training from introductory level to the more advanced. • Undertake evaluation of approach to raising awareness of the training and information available. • Define CAFRE's current/potential role in improving public perception and awareness of RE technologies.

Action No.	Action details:	Current Status:	Recommendation:	Potential Further Actions Based on Recommendation:
6	Launch a Biomass Processing Challenge Fund (BPCF)	BPCF launched in June 2010. Tranche 2 launch 2012.	Position accepted.	<ul style="list-style-type: none"> Tranche 2 launched September 2012. Explore options for additional funding sources which will overcome the challenges associated with 'match funding'.
7	Renewable Energy Portal for the land based sector - focusing initially on Anaerobic Digestion (AD)	AD Portal launched Biomass under development	Continue	<ul style="list-style-type: none"> On going review and development of portals to remain Development of Biomass Portal – specific date of launch to be confirmed
8	Supply Chain Development Programme promoted including renewable energy projects and case studies published.	Case studies of BCPF projects on portals and continues promotion at PoFRE events.	Continue	<ul style="list-style-type: none"> Carry out a review of Renewables Supply Chain Developments projects underway within current programme to ensure that they continue to be fit for purpose.
9	Focus Farms which showcase renewable energy supply chains.	2 Focus farms established with 30 visits having been carried out and 380 visitors accommodated.	Modify from present format	<ul style="list-style-type: none"> Develop more comprehensive information and monitoring of effectiveness in aiding visitors' decision-making and technology uptake <ul style="list-style-type: none"> Review and define clear objectives for Focus Farms Ensure objectives fully implemented

Action No.	Action details:	Current Status:	Recommendation:	Potential Further Actions Based on Recommendation:
10	Scoping exercise to establish a baseline of those farms/forestry enterprises meeting their own energy needs.	CAFRE currently carrying out scoping exercise.	Continue in principle, with further information to be provided.	<ul style="list-style-type: none"> ○ Ensure clear measurement and adjust approach as required ● Explore potential for 'monitor farms' where data is also provided (not just provision for visits) ● Rate of Adoption on farm measured year on year ● Scoping of size/scale of farm required before being self-sustainable. ● Consider future policy challenges relating to optimising the efficiency of energy use (self-sufficiency may hinder farm income optimisation) ○ For example, assess the impact of CAP reform post 2013
11	Development of a database of exemplars.	Case studies being published on relevant portals.	Continue	<ul style="list-style-type: none"> ● Quantify case studies to date and seek to fill gaps in knowledge provision
12	Development of a directory of DARD support, to be published and disseminated.	Directory already available through the DARD website.	Continue	<ul style="list-style-type: none"> ● Maintain current information on website, ensure that is up to date, relevant and well linked / cross-referenced to other departments where appropriate

Action No.	Action details:	Current Status:	Recommendation:	Potential Further Actions Based on Recommendation:
13	Formalise links with InvestNI (Energy Team) to explore potential integrated business solutions.	InvestNI to be invited to a minimum of 1 co-ordination group meeting per annum to discuss opportunities in terms of integrated business solutions. Policy Branch will continue with informal contact as and when required.	Continue	<p>Implement a market-led approach to energy development in the land-based sector</p> <ul style="list-style-type: none"> • Identify market opportunities and barriers • Work with stakeholders to break down barriers • Work with stakeholders to exploit opportunities • Interactions with InvestNI to be output driven
14	Work with the industry Advisory Panel - Energy and Waste sub group and other government groupings to identify and explore opportunities for linkages to relevant business activities.	Ongoing via IAP Energy and Waste group.	Continue	<p>Further engagement with InvestNI and any new agri-food panel to be pursued.</p> <ul style="list-style-type: none"> • Identify market opportunities and barriers • Work with stakeholders to break down barriers • Work with stakeholders to exploit opportunities • Interactions with IAP to be output driven

Action No.	Action details:	Current Status:	Recommendation:	Potential Further Actions Based on Recommendation:
15	Establish an External Stakeholder Group to provide advice which will progress effective delivery of the Action Plan	Elaine Groom (QUESTOR), John O'Brien (FM Professional) and Michael Doran (Action Renewables) agreed to sit on the External Stakeholder Group. Terms of reference have been agreed and meetings held to agree approach of review.		<ul style="list-style-type: none"> Proposals from REESG report to be considered.

Annex B - Proposed Additional Objectives for DARD Renewable Energy Action Plan 2010

DARD CONTROLLED	OTHER DEPARTMENTS	KEY MEASURES
Objective 1 - DARD to be visibly active in the overall Renewable Energy policy development in Northern Ireland		
<p>Actions –</p> <ul style="list-style-type: none"> • To become an intrinsic part of policy development and demonstrate it's visibility through such publications as the SEAP. • To carry out a scoping study of the effectiveness of DARD's input into Renewable Energy Policy. 	<p>Actions –</p> <ul style="list-style-type: none"> • DARD to work with DETI to establish how best the Agricultural Sector can help in meeting the Renewable Energy challenges for NI Plc. 	<ul style="list-style-type: none"> • DARD to continue to be represented on the Sustainable Energy Interdepartmental Working Group (SEIDWG) and contribute to the SEAP • DARD to work with DETI to establish additional actions to integrate activities in the agricultural sector into energy supply chain.
Objective 2 – Strategic part of the Northern Ireland Renewable Energy policy and decision making process		
<p>Actions –</p> <ul style="list-style-type: none"> • DARD to make positive contributions to interdepartmental Working Policy and Decision Making Groups. • DARD to embed itself as a key renewable energy policy/decision maker. 	<p>Actions –</p> <ul style="list-style-type: none"> • DARD to establish clear lines of communications with other Departments with regard to their potential roles, and gain a clearer understanding of how such roles contribute to addressing the renewable energy challenges. 	<ul style="list-style-type: none"> • DARD to continue representations and contributions to inform the decision making process on interdepartmental groups in relation to sustainable energy matters.

DARD CONTROLLED	OTHER DEPARTMENTS	KEY MEASURES
Objective 3 – Agriculture to be a strategic part of the supply chain		
<p>Actions –</p> <ul style="list-style-type: none"> • DARD to promote the resource rich and potential resources within the agricultural industry. • DARD to demonstrate to the energy sector available opportunities for using agricultural resources within the market. • Foresighting should be built into the DARD renewable energy research programme. 	<p>Action –</p> <ul style="list-style-type: none"> • DARD to strengthen links with InvestNI showcasing the economic benefits to various sectors i.e. construction, energy and potential employment opportunities from the Agri renewable energy sector. 	<ul style="list-style-type: none"> • CAFRE to integrate into work programme • DARD to showcase resources within a joint event with InvestNI • DARD to build renewable energy into the energy and innovation work programme • DARD to be represented on any DETI Matrix work on Energy and Waste.

DARD CONTROLLED	OTHER DEPARTMENTS	KEY MEASURES
Objective 4 – Stimulate and facilitate the active development of Renewable Energy within the Agri Sector.		
<p>Actions –</p> <ul style="list-style-type: none"> Encourage Agri sector through continued rural investment to stimulate behavioural changes and educate the sector in relation to potential innovation technologies. 	<p>Actions –</p> <ul style="list-style-type: none"> Promote the agricultural sector's potential to the economy through advantages of AD, fuel security and carbon savings over fossil fuel based energy. 	<ul style="list-style-type: none"> Ensure that within the next NIRD P there are measures embedded to integrate renewable energy <ul style="list-style-type: none"> Expand on work of portal <ul style="list-style-type: none"> Based on recommendations made in Point 13 as regards a market-led approach, ensure measures to simulate behavioural change and education are appropriately aligned
<ul style="list-style-type: none"> DARD to become pro active and use NI Direct to showcase potential opportunities within the agricultural sector for businesses. <ul style="list-style-type: none"> Inform the sector of potential funding opportunities. 	<ul style="list-style-type: none"> Discuss with relevant Department's opportunity to access to Matrix on energy panel for farmers. 	<ul style="list-style-type: none"> DARD to be represented on any DETI Matrix work on Energy and Waste. <ul style="list-style-type: none"> DARD, Rural NI and other websites to contain links to promotions.
Objective 5 – Underpin development by research and provision of information		

DARD CONTROLLED	OTHER DEPARTMENTS	KEY MEASURES
<p>Action -</p> <ul style="list-style-type: none"> • Inform the sector of potential funding opportunities. • DARD to publicise reports to inform Agri sector of potential opportunities and investments. • Consider barriers to change in relation to pulling down funding from various sources and how best to address these issues. 	<p>Action -</p> <ul style="list-style-type: none"> • DARD to work with DOE and DRD to look at potential areas for cross departmental engagement and possible research opportunities. 	<ul style="list-style-type: none"> • Clearly define the opportunities • Actively promote through press and web links • DARD to be active in relation to accessing funding streams through various routes of EU and national levels
<p>Objective 6 – Develop metrics to monitor performance</p>		
<p>Action -</p> <ul style="list-style-type: none"> • Agree on metrics of performance that can be measured • DARD to implement the structured metrics to monitor and record performance 	<p>Action -</p> <ul style="list-style-type: none"> • DARD to work with DETI and DOE to look at potential areas for cross departmental monitoring. 	<ul style="list-style-type: none"> • Clearly define the metrics • Implement a metrics reporting system

Annex C - Funding Routes

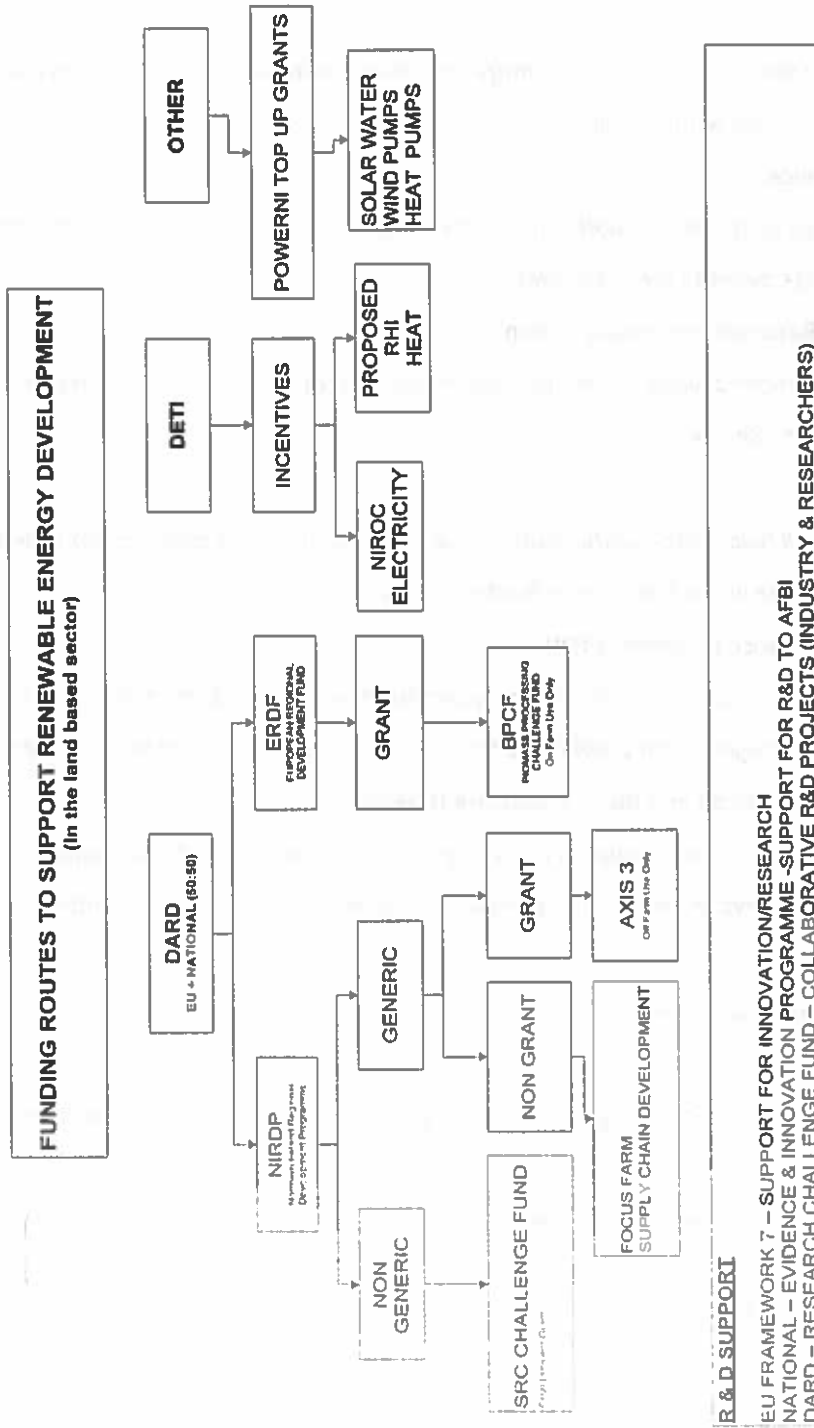


Figure 6-2 - Funding Routes

12 Annex D - Stakeholder presentations

REESG would like to acknowledge and thank the following groups and individuals who presented to them:

- **Ulster Farmers Union**

"Welcome the Practical on Farm Energy Events (PoFRE) and funding through the Biomass Processing Challenge Fund (BPCF)"

- **Northern Ireland Environmental Link**

"Renewable energy requires up front capital investment for long-term payback"

- **InvestNI**

"Invest NI has designated specific resources to identify opportunities in the renewable energy sector and to build awareness of these within local industry."

- **DARD - Forest Service**

"NI forestry policy restated as the sustainable management of forests and steady expansion of forest area to increase the diverse benefits forests provide."

- **Northern Ireland Renewable Industry Group**

"Make the case now for a more developed and accessible grid system to support the rural communities in advance of 2012 NIE Price Review"

- **Biomass Energy**

"The new opportunities will help sustain agriculture as the cornerstone of the rural economy, while at the same time benefitting the wider Northern Ireland economy."

- **Agri-Food and Bioscience Institute (AFBI)**

"Support the development of local renewable energy generation from biomass by addressing technical and economic obstacles to progress and providing best practice guidelines derived from local research"

- **College of Agriculture, Food and Rural Enterprise (CAFRE)**

"To develop, demonstrate and ensure adoption of a range of renewable energy technologies, in partnership with public and private sector organisations, which will assist rural communities"

- **John Gilliland**

"DARD cannot look at delivering in isolation"

- **Thomas Cromie**

"Anaerobic Digestion has potential to transform not just agriculture but also rural communities in NI."

Copies of these presentations can be obtained by contacting:

Kieran Coulter
Climate Change and Renewable Energy Branch
Room 430 Dundonald House
Upper Newtownards Road
BELFAST, BT4 3SB
☎ - 02890 765385
✉ - kieran.coulter@dardni.gov.uk

13 **Annex E - REESG Terms of Reference**

The Terms of Reference (ToR) as communicated to REESG Members in February 2011 are outlined below:

DARD RENEWABLE ENERGY ACTION PLAN 2010 – EXTERNAL OVERSIGHT GROUP

TERMS OF REFERENCE

1. Background.
2. Scope.
3. Operational Terms of Reference.
4. Administrative Guidelines.

1. Background.

In June of this year the Department published a revised Renewable Energy Action Plan informed by the recommendations of the Agricultural Stakeholder Forum on Renewable Energy. The aim of the plan is to strengthen and improve the capability of the sector and to help maximise the opportunities that the development of renewable energy has to offer the land based sector.

The Plan contains 15 recommendations. A key action is the establishment of a Renewable Energy External Stakeholder Group

2. Scope.

The External Stakeholder Group will be appointed to provide advice, set the direction, add value to the delivery actions, review progress and, based on the first year's delivery, advise on the ambition for future Departmental actions to drive the uptake of renewable energy technologies in the land based sector.

The Group will engage with stakeholders, agencies and government as required, and provide advice to Departmental officials tasked with implementation of the Action Plan.

The Group would be established in during early 2011 and will produce a review of the Action Plan after the first year

3. Operational Terms of Reference.

3.1 To provide advice, add value to delivery actions, review progress and advise on direction, by liaising with the delivery agents across the Department and AFBI

3.2 Engage with stakeholders, agencies and government as required, to understand the immediate and future needs of the sector and what can be realistically achieved by the Department against these requirements.

3.3 Review of the Renewable Energy Action Plan 2010 after one year.

Identify positives within the action plan which can be further developed. Identify and maintain an effective and relevant direction of travel in relation to future development of renewable energy in the land based sector.

4. Administrative Guidelines

4.1 Membership.

The External Oversight Group will form a small team of three individuals with strong representation from the land based sector, the renewable energy sector and the banking sector.

4.2 Secretariat Role.

Administrative support will be provided from within Climate Change and Renewable Energy Branch, to support and maintain the work of the External Oversight Group.

4.3 Timeframe.

It is anticipated that the External Oversight Group will meet on a quarterly basis over a rolling two year period.

4.4 Funding.

DARD will provide administrative support and operational running costs, to include travel expenses of members.

14 Annex F - REESG Members

Dr Elaine Groom

Dr Elaine Groom is General Manager of the QUESTOR Centre, an international industry/university cooperative research centre headquartered in Queen's University. She manages research operations of the international partnership in line with members' needs, contributes technical expertise to research operations and develops the technology transfer and commercialisation projects to ensure exploitation of the results of QUESTOR research. As part of the multidisciplinary QUESTOR Applied Technology Unit, Elaine works with member companies and industrial clients developing biogas facilities and providing testing and pilot trials in the area of anaerobic digestion and other areas of relevance to the energy and environmental sectors.

Elaine has more than twenty years' experience of applied research and consultancy in the application of environmental technologies. She graduated from Queen's University with a degree in Botany (1987) and a PhD in Microbiology (1991) and, after industry-related postdoctoral research in Oxford and University of Birmingham, returned to Belfast where she joined QUESTOR to contribute to the setup of the Applied Technology Unit as a self-financing, industrial-outreach unit within the university.

John O'Brien MBA MBIFM

John is an Independent Facilities Management Professional, primarily working in the commercial property sector, across a range of disciplines including; facilities management, management consultancy, procurement, operational support, contract delivery, change management, strategy development, renewable energy technologies and energy efficiency.

Recent activities in the Renewable Energy Sector have included a period as General Manager of Ecowood Energy Systems, one of the largest wood chip producers in Ireland. In 2009 John chaired the Wood Fuel Quality Working Group in the Republic of Ireland, which led to the development of the National Workshop Agreement for Wood Fuel Quality Assurance - Requirements (NWA 4:2009), John also subsequently chaired the Wood Fuel Quality Assurance (WFQA) Scheme Management committee for the first two years of its existence. John has most recently studied at University of Ulster where he received an MBA from the School of International Business. He is a member of the IrBEA (Irish Bioenergy Association) Management Committee.

Michael Doran, BSc, MSc, MRICS, C.Env, MIOD

Michael is the Managing Director of Action Renewables, a renewable energy expert company. Action Renewables carries out feasibility studies for wind turbines, AD, biomass boilers and PV installations. They are also a ROC trading company and the only Northern Ireland based, MCS accreditation body. Michael is responsible for setting the strategic direction of the company and for full P&L accountability.

He is a Chartered Surveyor, and has been on the N.I Council of the RICS in several capacities. He is on the International Board of the Environment and Resources Faculty of the RICS, is a member of the Institute of Directors, is a Chartered Environmentalist, and represents the RICS on the Board of the Society for the Environment. He was a founder member of the Irish Bioenergy Association and was the Irish representative on AEBIOM, the European Biomass Association. He was also on the Energy Crops Committee of DG Agriculture.

15 Annex G - Useful Links

Department of Agriculture and Rural Development (DARD) Renewable Energy Action Plan 2010

http://www.dardni.gov.uk/renewable-energy-action-plan-2010.11.030_renewable_energy_action_plan_2010_final.pdf

DARD – Biomass Processing Challenge Fund

<http://www.dardni.gov.uk/index/grants-and-funding/biomass-processing-challenge-fund.htm>

DARD - Grants and Funding

<http://www.dardni.gov.uk/index/grants-and-funding.htm>

DARD – Renewables

<http://www.dardni.gov.uk/ruralni/index/environment/renewables.htm>

Office of the First Minister and Deputy First Minister Sustainable Development Strategy

<http://www.ofmdfmi.gov.uk/eisusdevstrategy.pdf>

Department of Enterprise, Trade and Investment – Energy

<http://www.detini.gov.uk/deti-energy-index.htm>

16 References

- ⁱ <http://www.dardni.gov.uk/evidence-and-innovation-strategy.pdf>
- ⁱⁱ Northern Ireland Knowledge Economy Index –Baseline Report 2011
- ⁱⁱⁱ BIS (2011) Funding for EU research and Innovation from 2014: A UK Perspective
- ^{iv} http://ec.europa.eu/research/innovation-union/index_en.cfm
- ^v http://ec.europa.eu/resource-efficient-europe/index_en.htm
- ^{vi} <http://ec.europa.eu/enterprise/policies/innovation/policy/lead-market-initiative/#h2-2>
- ^{vii} Ecorys (2011) Potential Economic Growth in the NI Sustainable Energy Sector – A Skills Assessment – Final Report on behalf of DEL http://www.delni.gov.uk/ni_se_final_report_-_pdf_version_-_final.pdf
- ^{viii} www.connected.ni.org
- ^{ix} COM(2010) 546 final
- ^x COM(2012)79
- ^{xi} European Commission (2011) Press release (IP/11/776): Commission launches the "Smart Specialisation platform" to further boost innovation in the EU regions.
- ^{xii} DETI Operating Plan 2011-2012
- ^{xiii} NIAES (2011) IDENTIFICATION OF PRIORITY SKILL AREAS FOR NORTHERN IRELAND
- ^{xiv} <http://www.fraunhofer.de/en/about-fraunhofer/business-model.html>

From the Office of the Minister
Michelle O'Neill MLA



Department of
**Agriculture and
Rural Development**

www.dardni.gov.uk

AN ROINN

**Talmhaíochta agus
Forbartha Tuaithe**

MAINNSTRIC O

**Fairms an
Kintra Fordèrin**

John O'Brien

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Our Ref: INV/493/2012
Date: 11 January 2013

John, a chara

Thank you for your invitation to meet to discuss your report on the DARD Renewable Energy Action Plan (REAP) 2010.

I would be pleased to meet with you to discuss your report findings; subject to any urgent diary commitments arising or Assembly Business being called at short notice.

I am encouraged that you have recognised the progress my Department has made in relation to the REAP. I am keen to ensure that the land based sector is able to fully exploit the opportunities that the development of renewable energy has to offer and welcome your views on how my Department can continue to support the sector.

I have asked my Diary Secretary

to contact you to make the necessary arrangements.

Is mise le meas

MICHELLE O'NEILL MLA
Minister of Agriculture and Rural Development



From:
Sent: 07 November 2015 17:41
To: Private Office DARD
Cc: 'Andrew McAlister'; 'Nicola Murry'; 'RHI Accreditations'
Subject: Grant repayment.

Categories: Blue Dark Steel

Dear Minister


We are encountering significant issues with our renewable heat incentive application.

DARD NER region rural development programme 2007-2013 for renewable energy systems to support our budget accommodation provision in [redacted] n. This project did have some difficulties with our main contractor going out of business and leaving us with significant issues. We took on the role ourselves in applying for the RHI scheme which would be a significant help in the long term sustainability of our project. We were surprised to find that OFGEM required us to pay a significant part of the grant back through our RHI payments but that was something we took on board and were preparing to do. We had been told that we could do this by paying back this sum in instalments each quarter to OFGEM directly as the NER does not have a mechanism by which it can accept repayments.

It would seem now that OFGEM are now saying that because this facility only exists in GB and not in N Ireland that we are now not eligible for the RHI payments. This seems rather odd and difficult to understand. I have asked for clarification from OFGEM but this has so far not been forthcoming.

We have had great support throughout our project from our NER representative, Nicola Murray. I am currently speaking to NER about trying to get this situation looked at again and find out if there is any way around this seeming impasse. We are aware that the project will close in a few weeks and there is the necessity of trying to get things resolved before that.

We would appreciate it if it were possible for those in the minister's office to be aware of the situation and see if there is any way we can have the same arrangements afforded to those in GB for repayment of grants directly through OFGEM in order to be able to access the scheme on equitable terms.





From the Office of the Minister
Michelle O'Neill MLA



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AN ROINN

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BT4 3SB
Telephone: 028 9052 4140
Email: private.office@dardni.gov.uk

Our Ref: COR/1451/2015

Date: 26 November 2015

chara

Thank you for your e-mail of 7 November 2015 outlining your difficulties in obtaining accreditation to the NI Renewable Heat Incentive (NIRHIS) Scheme.

I am advised that since your e-mail to me, my officials and North East Region have agreed to offer you a resolution to your problem. They are willing to accept a lump sum payment for the amount in question as identified to you by the NIRHIS Team.

I am happy that my Department has been able to assist you in this matter.

On your question of applicants in the north of Ireland being afforded the same arrangements as those in Britain under the NIRHIS, this is a question best addressed to the Department of Trade and Investment (DETI) who administer the scheme in the north. You should address your query to:-

Domestic RHI, Energy Division,
Department of Enterprise, Trade and Investment,
Room 44,
Netherleigh,
Massey Avenue,
Belfast, BT4 2JP
Phone: 028 9052 9219
Email: ni.rhi@detini.gov.uk

I hope this information is helpful.

Is mise le meas

MICHELLE O'NEILL MLA

Minister of Agriculture and Rural Development

If you have a hearing difficulty you can contact
the Department via Text Relay. Dial 18002 + number



From: Brian Moreland <Brian.Moreland@moypark.com>
Sent: 08 February 2016 12:13
To: Private Office DARD
Subject: Meeting request with Minister Michelle O'Neill

Categories: Maroon Category

Dear
Thank you for your time on the phone earlier on. I would be grateful if you could please help arrange a meeting with Minister Michelle O'Neill and Mike Mullan, Moy Park's HR Director Europe. The subject of the meeting is to discuss the Renewable Heat Incentive.

Kind regards
Brian Moreland

Brian Moreland
Corporate Responsibility Manager

Moy Park
39 Seagoe Ind Estate,
Portadown,
Craigavon, Co. Armagh, BT63 5QE
Office Phone: 028 3835 2233
Direct Dial / Ext.: 8293
Mobile: 07837 461788
Brian.Moreland@moypark.com
www.moypark.com



Our foundation & our strength is in our values

DETERMINATION

SIMPLICITY

AVAILABILITY

HUMILITY

SINCERITY

DISCIPLINE

OWNERSHIP

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From the Office of the Minister
Michelle O'Neill MLA



Department of
**Agriculture and
Rural Development**

www.dardni.gov.uk

AN ROINN

**Talmhaíochta agus
Forbartha Tuaithe**

MAINISTRÉ O

**Fairms an
Kintra Fodèrin**

Brian Moreland
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Telephone: 028 9052 4140
Email: private.office@dardni.gov.uk

Our Ref: INV/0066/2016
Date: 07 March 2016

Brian, a chara

Thank you for your email of 8 February 2016 requesting a meeting to discuss the Renewable Heat Incentive (RHI).

I would be pleased to meet with Mr. Mike Mullan, Moy Park's HR Director Europe, to discuss the RHI; subject to any urgent diary commitments which may arise in the meantime, or Assembly business which may be called at short notice.

My Diary Secretary will contact you in due course to make the necessary arrangements.

Is mise le meas

MICHELLE O'NEILL MLA
Minister of Agriculture and Rural Development

From:
Sent: 05 April 2016 13:15
To: Private Office DARD
Subject: RE: INV-0066-2016 : Request from Moy Park for a meeting to discuss the Renewable Heat Incentive

PO,

Moypark has been offered the opportunity to meet with officials to discuss the RHI as the Ministers Diary commitments meant she would be unable facilitate this meeting before the end of her term. Moypack have responded by saying it prefers not to organise another meeting at this time.

Thanks

Agri Emissions and Land Branch (AELB)
DARD
Room 430
Dundonald House
Upper Newtownards Road
Belfast
BT4 3SB
Tel.

-----Original Message-----

From: Private.Office@dardni.gov.uk [mailto:Private.Office@dardni.gov.uk]

Sent: 01 April 2016 16:51

To: (DARD)

Cc: Speers, John; Warde Hunter, Louise;

(DARD);

(DARD);

(DARD);

(DARD)

Subject: INV-0066-2016 : Request from Moy Park for a meeting to discuss the Renewable Heat Incentive

Raised By: Brian Moreland

Reference: INV-0066-2016

Subject: INV-0066-2016 : Request from Moy Park for a meeting to discuss the Renewable Heat Incentive

Referred To:

Date Referred: 01/04/2016

The Minister has advised that due to other diary commitments she will be unable to facilitate this meeting before the end of her term and has asked that Officials take forward this meeting.

I would be grateful if you could advise Private Office of the outcome of the meeting.

Regards, _____

Private Office

Copied To For Information:

Speers, John; Warde Hunter, Louise; Climate Change & Renewable Energy Branch; Press Office