**DARD Directed Agri Food and Biosciences Institute (AFBI) Research Work Programme 2015/16**


# Background

The DARD Evidence and Innovation Strategy (EIS)[[1]](#footnote-1), published in 2009, provides a high-level framework for DARD’s evidence gathering and innovation support activities (2009-2013). One of the key principles of the EIS is that DARD-funded evidence gathering and innovation support activities will be both robust and policy-led. Whilst the EIS sets out a framework for research, the detailed evidence and innovation activities are co-ordinated through four Programme Management Boards (**PMB**s), which align broadly to the EIS Strategic Goals.

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| **EIS Goal** |  | **PMB** |
| **Goal 1:** To improve performance in the Marketplace | **PMB1:** Performance in the Marketplace |
| **Goal 2:** To strengthen the Social and Economic Infrastructure of Rural Areas | **PMB2:** Social and Economic Infrastructure in Rural Areas |
| **Goal 3:** To enhance Animal Health and Welfare, Fish and Plant Health | **PMB3**: Animal and Plant Health and Animal Welfare |
| **Goal 4:** To develop a more Sustainable Environment | **PMB4:** Sustainable Environment |

# Programme Development

One of the major roles and responsibilities of each PMB is to review, identify and prioritise investment in evidence gathering or innovation support activity in light of policy needs and/or evidence gaps. Evidence and innovation needs are identified by DARD on an ongoing basis, informed by both informal and formal engagement with stakeholders.

This process ensures the development of an evidence and innovation programme that is appropriately aligned to policy needs, provides a robust evidence base for future policy development, implementation and review and/or supports industry innovation within the scope of DARD’s policy interests.

An overarching Evidence and Innovation Priorities Group (**EIPG**), to which the PMBs report, is responsible for making the final decisions on the overall priority assigned to evidence and innovation requirements and, ultimately, the activities that will be funded in any particular year. EIPG is seeking to achieve a balanced research programme.

Approved proposals agreed through this annual process form part of the work programme delivered by AFBI for DARD[[2]](#footnote-2).

# DARD Directed AFBI Research Work Programme

* Our priority needs are set out in the sections that follow;
* AFBI **is expected to** submit Concept Notes and Full Format Proposals, to address **all of the Evidence and Innovation needs** identified;
* **Proposals falling outside our Evidence and Innovation needs will not be considered**; and;
* **Guideline costs are provided as an indication of the expenditure of previous similar projects and are not target costs. Costs may exceed or come in under these guideline figures. FFPs must reflect the actual costs anticipated for the project. Costs should be profiled as accurately as possible and not simply spread evenly through the duration of a project.**
* The associated timetable and evaluation procedures are provided at **Annex A.**

**Liaison with DARD Policy**

* Further information on each priority need can be obtained from the nominated DARD Policy Lead. AFBI Project Leaders with an interest in responding to an Evidence and Innovation Need are encouraged to contact the nominated DARD Policy Lead at an early stage. Contact details are listed at **Annex B**;
* To facilitate early discussion, outline proposal(s) **must** be submitted by the AFBI Project Leader to the DARD Policy Lead using the Concept Note (CN) which is available on the DARD website;
* CNs must be agreed and signed off by Policy Lead’s by **01 September 2014.** Agreed CNs should be forwarded by AFBI to RPB upon completion.
* **A FFP must be completed for each proposed submission.** The template form can be obtained from the DARD website. There are some minor changes to the FFP from previous years and project leads **must** ensure that the latest version is completed. The AFBI Project leader should work closely with the DARD Policy Lead to ensure that the proposal is the correct fit for the Evidence and Innovation Need identified. In **most cases,** the FFP forms the Economic Appraisal for the proposal.
* A FFP will not be considered if a CN has not been signed off by the Policy Lead.

**Co-Funding Opportunities**

* DARD will seek to identify and liaise with potential co-funders. If AFBI project leader(s) wish to pursue potential co-funding, they should inform SEIPD (contact details below) who will co-ordinate co-funding arrangements with DARD.

**Closing Date**

* The proposal window closes on **30 September 2014** and all FFP(s) received up to this date will be scrutinised by PMBs;
* CNs will not be accepted as a substitute for FFPs; and
* All completed forms should be submitted via the AFBI central contact point to:-

heather.maginnis@dardni.gov.uk ; or

**Heather Maginnis**

Science, Evidence and Innovation Policy Division, DARD

Room 359, Dundonald House

Ballymiscaw

Upper Newtownards Road Belfast

BT4 3SB

**Assessment and Approval Process**

* All FFPs will be scrutinised and, where appropriate, challenged by DARD Policy Leads, and DARD Science Advisory Branch. AFBI should answer any queries promptly;
* FFPs will be selected at random for assessment by DARD Resource Economics Branch. AFBI should answer any queries promptly;
* All FFPs will be assessed, scored and ranked by PMBs;
* EIPG will provide final approval for proposals. Approval will be subject to a satisfactory economic appraisal (mostly within the FFP) and proposals must have a sound scientific basis;
* EIPG will seek to achieve a balance across all PMBs and preference will be given to proposals that demonstrate a holistic, inter-disciplinary approach to addressing the priority need(s) and/or attract co-funding from another source;
* **Work cannot start until EIPG signs off the proposal; and**
* **The outcome of this process is referred to as the DARD Directed AFBI Research Work Programme 2015/16. Publicity or marketing of any of the proposals must acknowledge DARD as the core funder.**

# Evidence and Innovation Needs

Evidence and Innovation needs to be addressed for each Programme Management Board follow (pages 6-13).

**PMB 1 - PERFORMANCE IN THE MARKETPLACE**

The overall objective of PMB 1 is to identify and prioritise evidence gathering and innovation support activity to promote the sustainable economic development of the local agri-food, fisheries and forestry industries. In order to inform policy development and delivery, it is paramount that there is a sound understanding of the complex social, political and economic interactions which affect the operating environment in which these industries function.

PMB 1 aims to achieve this objective through the delivery of evidence and innovation projects in 6 themed areas as outlined in the Evidence and Innovation Strategy (EIS):

Key EIS Themes

1. Impact of policy changes.
2. Knowledge exchange, education and life long learning.
3. Sustainable and competitive production.
4. Sustainable forestry.
5. Sustainable fisheries and aquaculture.
6. Novel and innovative products and processes.

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| **PMB 1 Evidence and Innovation Needs** | **Guideline annual Project Cost** | **Guideline duration** | **DARD Policy** **Lead** |
| **Increased efficiency in production systems**Assessment of measures to increase efficiency of production of all sectors – through use of genomic techniques and or genetic improvement, use of innovative approaches to housing systems, precision in nutrient or feed input requirements and nutrient management; energy and water efficiency; including alternative sources of protein/ protein crop production, grazing system analysis, dry matter yield effects, land use (conacre): Crop rotation/break crops to increase productivity[[3]](#footnote-3). | £400k | 3 Years | **Seamus Murray** |
| **Literature review/desktop exercise – Food safety risk management** To identify existing data on, and factors that affect residues of veterinary medicines in food products; to identify what information gaps exist and make recommendations on how these could be addressed to enable a risk-based approach to testing. | £50k – £100k | 1-2 Years | **Elaine McCrory** |
| **Soil and growing medium management**Assessment of measures to improve the sustainability of soil and growth media management for sustainable grass, arable and horticulture production. Development of precision agriculture in relation to fertiliser use/ nutrient uptake. | £200k | 3 Years | **Seamus Murray** |
| **Enhancing competitiveness, Integrity and resilience of local food supply chain*** Benchmarking competitiveness, integrity and resilience of local food supply chain, including limiting factors and optimising efficiency.
* Desktop exercise to identify suitable sectoral supply chain and business models to improve sustainability and competitiveness of the NI agri-food industry, particularly for the red meat, arable and commercial horticulture and pig sub-sectors.
 | £50k | 2 Years | **Louise Milsopp** |
| **Novel and innovative food products and processes*** Development of novel and innovative food products and processes, including packaging and shelf life extension techniques to meet existing or anticipated market needs related to health/nutrition, food quality, safety and/or efficiency. Development of healthy eating alternatives to processed food ingredients.
 | £150k | 3 Years | **Elaine McCrory** |
| **Biological and non-biological control measures and storage systems**Identifying herbicides, insecticides, biological control measures and optimal storage systems for arable and horticulture sectors. | £150k | 3 Years | **Brian Ervine** |
| **Risk management , food safety and local opportunities arising from global food security challenges*** Assessment of factors, risk and current/emerging threats involved in successful agri-food industry/government management of production and food safety and food assurance issues. Data on, and factors that affect, veterinary medicine usage and integrity of the local supply chain.
* Development of a “Contamination Risk Register” for veterinary medicinal products in animals.
* Assessment of local impacts and opportunities arising from global food security challenges.
 | £50k | 1 Year | **Elaine McCrory** |

**PMB 2 - SOCIAL AND ECONOMIC INFRASTRUCTURE IN RURAL AREAS**

A key objective of PMB 2 is to build the evidence base to inform the Department’s broad rural policy agenda. In particular, it is seeking to use research to develop a more robust and sophisticated understanding of the social and economic characteristics of rural areas, with a particular focus on identifying the specific needs of disadvantaged groups and what this means for the development and equitable delivery of government policy for both the farming and non-farm sector. A second key objective of PMB 2 is to commission cross-cutting economic research that will provide a deeper insight into the impact of policy options right across the Department’s remit and inform future policy development on agri-food industry competitiveness, animal health and welfare and environmental sustainability.

PMB 2 aims to achieve this objective through the delivery of evidence and innovation projects in 3 themed areas as outlined in the Evidence and Innovation Strategy (EIS):

Key Themes.

1. Addressing the economic evidence needed to support policy development, implementation and evaluation.
2. Addressing needs of rural communities.
3. Evidence to facilitate assessment of equality of opportunity aspects of policy development.

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| **PMB 2 Evidence and Innovation Needs** | **Guideline Annual Project Cost** | **Guideline Duration** | **DARD Policy Lead** |
| **An Examination of the economic effects of LFA support in Northern Ireland**At present, support to Less Favoured Areas in northern Ireland amounts to some £25 million per annum. The focus of EU support policy for these areas is changing and there is a need to explore the economic impact of the current arrangements to ensure that any future support address an identified need, is targeted appropriately and provides value for money. Whilst economic effects are the priority, the research may also examine environmental and social effects of LFA support. | £100k | 2 Years | **Rosemary Agnew** |
| **Cost-benefit analysis for intervention and control strategies, whilst accounting for uncertainty, for a number of named plant pests and diseases.**There are a number of newly arrived plant pests and diseases in NI which are currently under eradication, containment or suppression. The evidence need is to improve the robustness of cost-benefit analysis (taking account of economic, environmental and social functions) for interventions and control strategies, whilst accounting for uncertainty, for a number of these plant pests and diseases. The research is likely to be desk based and the outputs are needed in the short term to inform the development of plant health policy in relation to individual plant pests and disease strategies. Pests / diseases of current interest include: (1) Hymenoscyphus pseudoalbidus (anamorph Chalara fraxinea); (2) Phytophora ramorum; (3) Erwina amylovora | £50k | 2 Years | **Stuart Morwood** |
| **Maximising the Benefits to Rural Areas Through Use of Rural Development Funding**An investigation into the effect of grant assistance on recipient groups and organisations both within and outside of rural areas in order to identify commonalities of impact and areas of good and best practice in the utilisation of resources by scheme managers. In particular, the investigation should examine whether there is evidence to suggest that greater refinement in the application / disbursement of rural development funding may increase the positive and sustainable impacts of aid or whether current delivery models maximise outcomes from available funding. The investigation will examine and make an assessment on whether or not current funding models are prone to policy creep; build risk aversion; create grant dependency; or distort local markets. | £50k | 2 Years | **Michael McGuigan** |
| **Desktop exercise - Capital Grants and Agricultural Productivity Growth**An assessment of and recommendations for, the efficient and effective use of capital grants to increase investment that delivers agricultural productivity growth. | £50k | 2 years | **Paul Caskie** |
| **A Study on Rural Proofing and the Rural Champion approach** To assess the impact of rural proofing policy in improving access to services and explore alternative models of delivering effective joined-up government in developing policies/service provision to rural areas. Part of this will be to assess the effectiveness of a rural champion approach in Northern Ireland and to explore how it could be improved to help deliver better outcomes for rural dwellers. | £50k | 2 Years | **Niall Heaney** |
| **Development of sustainable fishing industries**The assessment of the relative impact of alternative policy interventions for the development of a sustainable fishing industry/fishing community (desktop exercise). | £50k | 1 year | **Paddy Campbell** |
| **An assessment of the effectiveness of alternative delivery models for agricultural skills and training**An assessment of the most effective methods and models of delivering training and extension services in terms of impact and value for money in a Northern Ireland context. | £50k | 2 years | **James O’Boyle** |

**PMB 3 - ANIMAL AND PLANT HEALTH AND ANIMAL WELFARE**

The overall objective of PMB3 is to develop a strategic approach to protecting animal and plant health and animal welfare supported by sound scientific evidence. Information, gathered through targeted research, on the wider implications of animal / plant disease control strategies and interventions and animal welfare issues is needed to evaluate and inform the direction of future policy within Northern Ireland and to inform discussions with other Government bodies.

PMB 3 aims to achieve this objective through the delivery of evidence and innovation projects in 8 themed areas as outlined in the Evidence and Innovation Strategy (EIS):

Key Themes

1. Costs, benefits and risk profiles of animal and plant disease prevention and control strategies.
2. Improving detection and control of endemic animal diseases.
3. Developing improved traceability systems.
4. Animal Welfare.
5. Aquaculture and fish health.
6. Plant health.
7. Disease horizon scanning – emerging risks.
8. New techniques/approaches to disease prevention and control

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| **PMB 3 Evidence and Innovation Needs** | **Guideline Annual Project Cost** | **Guideline Duration** | **DARD Policy Lead** |
| **Improved Diagnostics and control of Johnes’ Disease in the NI cattle population**Johnes’ disease remains a significant barrier to farm profitability and trade. A study comprising the following areas will assist in our understanding of its complex interaction with bovine TB pathogenesis and diagnosis developing:* Risk factors and infection outcomes
* Investigating disease transmission dynamics
* Independent evaluation of novel diagnostics
* Evaluation of on-farm interventions
 | £200k | 3 Years | **Carol McKibben** |
| **Pestiviruses in NI tools to support BVD eradication programme**A study comprising a serum survey in sheep: determining the exposure of other ruminants such as deer and genetic typing of viral strains to support the management of the BVD | £150k | 3 Years | **Carol McKibben** |
| * **Effect of disinfection on composting of poultry litter**
* A study to determine whether the approved disinfectant used in the event of a disease outbreak inhibits the composting process and thus preventing the inactivation of the AI virus.
 | £100k | 1 Year | **Denis Savage** |
| **Non Visible Lesioned Reactors (NVLs)** The level of disease control put in place following disclosure of TB reactors is, in part, guided by post mortem results. TB programme actions taken may not be as rigorous where the carcases are NVL. However, recent research indicates that NVLs may play a significant role in the epidemiology. This needs to be investigated further. | £100k | 2 years | **Andrew Kell** |
| **Improve diagnostics of the gamma-interferon test**Investigation to extend use of the gamma-interferon test from 8 hours (as at present) to 24 hours, test new antigens, improve the test and seek economies in the use of this technology to enhance the efficacy. | £200k | 2 years | **Andrew Kell** |
| **Plant Biosecurity**Assessment of the efficacy of current plant health practices and the understanding and attitudes of stakeholders to bio-security measures in plant health. | £150k | 2 years | **Raymond Gamble** |
| **Genomics / whole genome sequencing for bTB**This is the emerging technology to take TB diagnostics beyond what is presently achievable by molecular strain-typing and could build on the recently published AFBI/Glasgow University badger–cattle interaction study, which demonstrated the direction of TB transmission between cattle and badgers in 5 farms sharing the same TB strain type and build on the “test and vaccinate or remove (TVR)” wildlife intervention research. | £200k | 3 years | **Andrew Kell** |

**PMB 4 - SUSTAINABLE ENVIRONMENT**

The overall objective of PMB 4 is to underpin the need to address collectively and individually the environmental considerations which are major factors in health and well being. Such issues include climate change, pollution, air / water quality, bio-diversity, waste management and protection of the landscape and natural resources. The main focus of evidence gathering and innovation support activity is to gain a better understanding of the issues surrounding environmental sustainability and climate change mitigation and the potential economic value attached to their effective management and exploitation. A better appreciation of the interaction between land/marine based industries and the natural environment and the regulatory compliance within and between these industries will help promote enhanced policy making and regulatory capabilities.

PMB 4 aims to achieve this objective through the delivery of evidence and innovation projects in 8 themed areas as outlined in the Evidence and Innovation Strategy (EIS):

Key Themes

1. Understanding and improving the environmental footprint of the agri-food industry.
2. Assessing and improving the impact of agri-environment programmes.
3. Understanding the environmental impact of changes in agricultural land use patterns and intensity.
4. Sustainable forestry.
5. Sustainable waste and manure management.
6. Sustainable fisheries and aquaculture.
7. Flood risk management.
8. Novel and innovative approaches to nutrient management.

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| **PMB 4 Evidence and Innovation Needs** | **Guideline Annual Project Cost** | **Guideline Duration** | **DARD Policy Lead** |
| **Quantification of phosphorus release from sediments in Lough Neagh and factors affecting the recovery of biological water quality.**Research is required to quantify the impact of phosphorus release from sediments in Lough Neagh on water quality. This should include an assessment of the impact of agricultural nitrate reductions on the lake and an estimate of the time scale required to meet nutrient and biological targets. In addition, research is also required to consider factors affecting the recovery of biological quality of rivers and lakes to inform future policy and reporting under the Water Framework Directive. | £200k | 3 years | **Brian Ervine** |
| **Ammonia and odour emissions reductions strategies**Strategies are required which will enable the practical application of ammonia and odour abatement measures in various livestock systems. Research on the relative effectiveness of various options, is required. In addition, research is also required to assess the levels of ammonia emissions from the NI livestock sector, to consider its environmental impact, and potential mitigation options. | £200k  | 2 years  | **Brian Ervine** |
| **Green House Gas – Carbon Sequestration**Evaluation of the potential for changing land use practices to encourage soil and grass carbon sequestration. Research should estimate current soil carbon stocks in grassland in NI. Investigate the influence of grassland age in a wide range of grassland types and ages. Investigate grassland reseeding practices to minimise soil carbon loss due to cultivation. | £200k  | 3 years | **Terence Patton** |
| **Soil and Nutrient Management Practices**Sustainable nutrient management on high phosphorus index soils. Soils above P Index 2 pose a potential risk to water quality. Research is required to provide evidence that continuing livestock manure application to grassland soil maybe compatible with achieving the dual objectives of reducing soil P to Index 2 while maintaining grass production at current levels. | £200k | 3 years | **Brian Ervine** |
| **Managing soil nutrient status to balance production with environmental protection**The Agri-Food Strategy Board Strategic Action Plan ‘Going for Growth’, recommended ‘research into measureable, best practice systems for sustainable intensification on-farm’. Research is required into practical means for farmers to manage their soil nutrient balances, through benchmarking or the adoption of novel approaches or technologies. | £200k | 3 years | **Brian Ervine** |
| **Research to support development of an Agricultural Land Use Strategy (Literature review)**The Agri-Food Strategy Board Strategic Action Plan ‘Going for Growth’, recommended the development of a strategic regional land management policy to determine the most productive use of our limited land. In addition, it noted that it should identify areas best suited for specific agricultural use whilst maintaining and enhancing environmental sustainability. A literature review is required into land management policies in different regions, identifying examples of best practice and challenges which have been overcome.  | £50k | 1 year |  **Peter Scott** |
| **Standardised nutrient excretion figures for laying hens and other poultry production systems**Previous DARD and local poultry sector funded work has established standardised chemical analysis of broiler litter. The nutrient contents and categories of other poultry manures set out in the 2010 NAP Regulations require verification and revision may be necessary to ensure they reflect current local production systems. A survey, including chemical analysis, is required to establish standardised composition information for these manures. | £150k | 1 year | **Brian Ervine** |

**Annex A**

1. **Timetable**

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| **Date** | **Activity** |
| **10 July 2014** | Proposal window opens  |
| **1 September 2014** | Latest date for CN(s) to be agreed by Policy Lead |
| **30 September 2014** | Latest date for FFP(s) submission |
| **October/November 2014** | FFP(s) assessed & scored by PMBs and Science Advisory Branch |
| **December 2014** | EIPG makes final decision on approval of project(s) |
| **April 2015** | Approved projects commence |

1. **Evaluation criteria**

# PMBs will provide a final scoring for each proposal received, based on the following criteria (not in order of importance).

* Ability of objectives to meet policy needs;
* Scientific quality;
* Evidence of collaboration with other scientific groups / industry;
* Provision of additional information to that already known in this area;
* Appropriate project management including risk management;
* Appropriate milestones and deliverables;
* Clear strategy for knowledge exchange;
* Potential for co-funding from other sources and
* Value for Money.
	1. **Additional information**
* FFP forms should be completed in **Arial font size 12.**
	1. **Feedback**
		+ Feedback on unsuccessful proposals will be coordinated by DARD Science, Evidence and Innovation Policy Division and passed to a central contact in AFBI. DARD Policy leads will not provide feedback to AFBI Project Leaders directly.

 **Annex B DARD Contact Details**

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| **DARD Contact** | **Division/Branch** | **Tel. No** | **E mail** |
| Rosemary Agnew | Policy Development Branch  | 028 9052 4074 | Rosemary.Agnew@dardni.gov.uk |
| Paul Caskie | Farm Surveys Branch | 028 9052 4427 | Paul.Caskie@dardni.gov.uk |
| Paul Devine | Science Advisory Branch (SEIPD) | 028 9052 0821 | Paul.Devine2@dardni.gov.uk |
| Brian Ervine | Environmental Policy | 028 9052 5570 | Brian.Ervine@dardni.gov.uk |
| Niall Heaney | Sustainable Rural Communities Branch | 028 9076 5869 | Niall.Heaney@dardni.gov.uk |
| Ian Humes | Sea Fisheries Policy & Grants Branch | 028 9052 5469 | Ian.Humes@dardni.gov.uk |
| Andrew Kell | TB/BR Policy Branch | 028 9052 4982 | Andrew.Kell@dardni.gov.uk |
| Elaine McCrory | Food Policy Branch | 028 9052 4496 | Elaine.McCrory@dardni.gov.uk |
| Michael McGuigan | Rural Development North | 028 9052 4381 | Michael.McGuigan@dardni.gov.uk |
| Carol McKibben | Animal Health Strategy & TSE | 02890525274 | Carol.McKibben@dardni/gov.uk |
| Ann McMahon | Science Advisory Branch (SEIPD) | 028 9052 1478 | Ann.McMahon@dardni.gov.uk |
| Heather Maginnis  | Research Policy Branch (SEIPD) | 028 9052 5036 | Heather.Maginnis@dardni.gov.uk |
| Louise Millsopp | Supply Chain Development | 028 9052 0805 | Louise.Millsopp@dardni.gov.uk |
| Stuart Morwood | Afforestation & Plant Health Branch | 028 9052 4465 | Stuart.Morwood@dardni.gov.uk |
| Seamus Murray | Farm Policy Branch | 028 9052 4493 | Seamus Murray@dardni.gov.uk |
| James O’Boyle | Loughry College Services | 02886768126 | James.O’Boyle@dardni.gov.uk |
| Terence Patton | Climate Change and Renewable Energy Branch | 028 9052 4143 |

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| Terence.Patton@dardni.gov.uk |  |  |
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| Hazel Quinn | Resource Economics Branch | 028 905 25010 | Hazel.Quinn@dardni.gov.uk |
| Jackie Robinson | Research Policy Branch (SEIPD) | 028 9052 4912 | Jackie.Robinson@dardni.gov.uk |
| Denis Savage | Animal Disease Control and Trade Policy Branch | 028 9052 4660 | Denis.Savage@dardni.gov.uk |
| Peter Scott | Climate Change and Renewable Energy Branch | 028 9037 8593 | Peter.Scott@dardni.gov.uk |

1. <http://www.dardni.gov.uk/index/strategies-reports-accounts/dard-research-section/dard-evidence-and-innovation-strategy_2009-2013.htm> [↑](#footnote-ref-1)
2. See <http://www.legislation.gov.uk/nisi/2004/3327/article/6/made> [↑](#footnote-ref-2)
3. Under this Evidence and Innovation need consideration can be given to submission of multiple-sector focused research proposals or research proposals with several strands and broader scope, (this is not essential), in this situation costs would be expected to exceed the indicated guideline costs. [↑](#footnote-ref-3)