

Biodiversity and Ecosystem Service Sustainability (BESS)

Implementation Plan 2011-2017

1. Introduction

This *Implementation Plan* details the method of execution of the *Biodiversity and Ecosystem Service Sustainability (BESS) Programme*, the science of which is laid out in the Research Programme's *Science Plan*¹. This plan describes the implementation of the main deliverables in the 6-year research programme and the mechanisms for exploitation of the knowledge gained in these areas. The BESS programme will inform policy and societal need for a greater understanding of biodiversity, ecosystem functioning and ecosystem service sustainability.

The Implementation Plan is a living document which will be periodically updated² to address programme delivery issues such as on-going liaison between projects, science meetings, reporting and general programme coordination activities.

2. The Research Programme's Goals

- To define how biodiversity within landscapes underpins the delivery of different ecosystem services at a range of scales and across gradients.
- To establish whether there are critical levels of biodiversity required to deliver different kinds of services under different driver-pressure scenarios, as well as which enhance the resilience of ecosystems to those different drivers.
- To develop novel tools and indicators appropriate for tracking and measuring changes in biodiversity and ecosystem services under those different scenarios.

The full Science Plan of the BESS programme is available on
<http://www.nerc.ac.uk/research/programmes/bess/resources.asp>

3. Delivering the Research Programme

Research activities in the BESS programme will focus on landscapes within the UK which:

- deliver important multiple functions and services;
- are currently subject to rapid change;
- are where future drivers will have the greatest likely impact;
- are where there is the most pressing need to close the knowledge gaps about biodiversity-ecosystem service linkages.

The priority **focal landscapes** which meet these criteria will be:

- Lowland agricultural multifunctional landscapes³
- Freshwater, brackish and near-coast marine wetland landscapes⁴

¹ <http://www.nerc.ac.uk/research/programmes/bess/resources>

² version control shown in Annex 2

³ which could include woodland areas

- Upland landscapes
- Urban landscapes

The three over-arching BESS programme goals will be addressed via the three linked *Science Themes* listed below and which are set out in detail in the programme Science Plan.

1. Functional relationships between biodiversity and ecosystem services
2. Resilience of biodiversity-ecosystem service relationships to changing conditions
3. Monitoring and evaluation of ecosystem services

The science will be delivered through funded interdisciplinary, cross-theme projects, cross-theme Working Groups and through science coordination and programme management activities such as targeted knowledge exchange and outreach activities.

The programme's research activities will be delivered via several main grants funding rounds (see Section 5) addressing research across the programme *Goals* and *Science Themes*.

The **first funding round** was announced in June 2011 for research consortium grants involving multiple institutions (minimum of 3) addressing multiple programme themes and types of ecosystem service. Four awards were made, each being between £2.5 million and £3 million⁵. The round had a budget of c£10 million, with BBSRC contributing funding of c.£0.7million to the Wessex BESS project. Projects started in summer/autumn 2012.

A **second funding round** was announced in October 2012 for the following grant types:

- i. Fellowship awards of maximum 3 year duration. This call has an indicative budget of c. £700,000 and it is expected two fellowships will be awarded.
- ii. Research grants of maximum two year duration, with each proposed project having a cost to NERC between £100,000 and £150,000. This call has an indicative budget of c. £900,000 and it is expected between six and nine awards will be made.
- iii. Small grants of maximum one year duration, with each project having a cost to NERC between £15,000 and £20,000. This call has an indicative budget of c. £120,000 and it is expected between six and eight awards will be made.

Any additional funding opportunities will depend on NERC's and the Directorate's success in securing additional co-funding.

To foster programme integration, achieve added-value and the production of high-quality deliverables, the programme will support pre- and post-award activities to stimulate innovation and new collaborations, avoid duplication of effort and allow effective project alignment and interaction.

⁴ including salt marsh, estuarine and tidal flat areas

⁵ Standard NERC funding rules apply with awards paid at 80% of the full Economic Cost.

4. Programme Management

The BESS programme will be governed under the principles of the NERC policy for Governing and Management Investments⁶, and will be undertaken by a number of bodies as outlined below. The relationship of these bodies and full terms of reference are shown in Annex 1, and membership of these bodies is shown on the NERC programme web pages⁷.

4.1 Programme Executive Board (PEB)

The BESS programme is managed by NERC. The PEB is responsible for the strategic direction and management of the programme and the delivery of the programme's objectives. The PEB will be chaired by NERC and will include the programme Director. Membership may be supplemented at a later date if necessary.

4.2 Programme Management Unit (PMU)

The PMU consists of the Directorate and the NERC Secretariat. It is responsible for the overall management, coordination and delivery of the programme.

4.3 Directorate

The Directorate was appointed following an open procurement exercise carried out according to UK Public sector and OJEU regulations. The Directorate is housed at the University of York and is responsible for ensuring the integrated delivery of the BESS programme.

4.4 Secretariat

The Secretariat is based at NERC Swindon office. It provides secretariat function for the PEB, manages the delivery of the grant funding calls and works with the Directorate on programme management and coordination.

4.5 Programme Advisory Group (PAG)

The PAG was appointed following an open call and an assessment exercise undertaken by the PEB. The PAG provide independent advice to the PEB via the Director on the strategic direction of the programme. Membership may be reviewed annually to meet the needs of the programme.

⁶ www.nerc.ac.uk/about/delivery/processes/investments.asp

⁷ <http://www.nerc.ac.uk/research/programmes/bess/management.asp>

5. Programme Activities and schedule

5.1 Programme timeline (for first two years)

	FY10/11	FY11/12 (Apr-Mar)				FY12/13 (Apr-Mar)			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
PEB in place									
Directorate in place									
PAG in place									
Round 1 AO									
Round 1 deadline									
Round 2 AO*									
Round 2 deadline*									

5.2 First funding round

The programme's first funding round was via an open *Announcement of Opportunity* in June 2011 for research consortium grants to deliver against all programme *Goals and Science Themes*. The consortia projects were required to involve multiple institutions addressing multiple programme themes and types of ecosystem service and be in the range of £2.25 million - £3 million and of ~ 4 years duration.

Applicants were required to submit an Expression of Interest (EOI) prior to submitting a full bid. 29 EOIs were received, followed by 21 full proposals being submitted. Following expert international peer review, 11 proposals were invited to present their project proposal to an expert panel.

The Programme Executive Board (PEB) subsequently agreed to fund the following 4 proposals:

Urban BESS: Fragments, functions and flows – the scaling of biodiversity and ecosystem services in urban ecosystems. Lead PI: Prof James Harris, Cranfield University. Total award made £2,344,195

DURESS: Diversity in Upland Rivers for Ecosystem Service Sustainability. Lead PI: Dr Isabelle Durance, Cardiff University. Total award made £2,393,030

Wessex BESS: Biodiversity and the provision of multiple ecosystem services in current and future lowland multifunctional landscapes. Lead PI: Professor James Bullock, NERC Centre for Ecology and Hydrology. Total award made £2,801,424

CBESS: A hierarchical approach to the examination of the relationship between biodiversity and ecosystem service flows across coastal margins. Lead PI: Professor David Paterson, University of St Andrews. Total award made £2,269,180

Timings:

3 rd June 2011	Announcement of Opportunity published
June-July 2011	Directorate briefing sessions
19 th July 2011	deadline for submission of 'Expression of Interest'
14 th September 2011	deadline for submission of full proposals
28 th Nov – 13 Dec 2011	PI response period
April 2012	Awards made

Spring/summer 2012 projects start

5.3 Second funding round

A second announcement of opportunity was published in October 2012 for the following grant types, which will complement and extend the existing BESS research portfolio:

- i. Fellowship awards of maximum 3 year duration. This call has an indicative budget of c. £700,000 and it is expected two fellowships will be awarded.

The fellowships will be required to address one of the following areas:

- Scaling issues in biodiversity, ecosystem functioning and service delivery;
- Issues of patchiness and connectivity in biodiversity, ecosystem functioning and service delivery;
- Sustainable agricultural systems and food security;
- Non-linear processes, dynamics and thresholds in relationships between natural capital stocks and flows of services;
- Integrating biodiversity-functioning-service relationships across major gradients, such as catchments to coasts.

- ii. Research grants of maximum two year duration, with each proposed project having a cost to NERC between £100,000 and £150,000. This call has an indicative budget of c. £900,000 and it is expected between six and nine awards will be made.

These research grants are required to address one of the following areas:

- Scaling issues in biodiversity, ecosystem functioning and service delivery;
- The application and integration of Earths Observation approaches to the assessment of relationships between biodiversity, food security and delivery of multiple ecosystem services;
- Non-linear processes, dynamics and thresholds in relationships between natural capital stocks and flows of ecosystem services;

- iii. Small grants of maximum one year duration, with each project having a cost to NERC between £15,000 and £20,000. This call has an indicative budget of c. £120,000 and it is expected between six and eight awards will be made.

The small grants are required to address on the following areas:

- Engineering resilience in biodiversity, ecosystem functioning and service delivery;
- Novel and emergent technologies for sustaining biodiversity, ecosystem functioning and service delivery;
- Functional modelling of indicators of natural capital stocks and flows of services;
- Analysis of historical time-series of appropriate indicators of natural capital stocks and flows of services;
- Foresight Land Use Futures and the delivery of ecosystem services.

Applications submitted through the Joint Electronic Submission system will undergo independent expert peer review. The Programme Executive Board will take the recommendations of the expert panel and agree a portfolio of proposals to fund, which are excellent research and meet the strategic needs of the programme.

Timings:

1st October 2012

AO published:

6th December 2012

Deadline for submission of full proposals through JeS

wc 13th May 2013 Expert panel and PEB meetings

5.4 *BESS Studentships*

An announcement was issued in April 2012, for funding for five interdisciplinary BESS studentships. The studentships were required to be fully interdisciplinary – having one natural science and one social science supervisor – and the project had to be congruent to the BESS science plan.

The following five studentships were awarded:

1. Plymouth Marine Laboratory and University of St Andrews - The impact of multiple climate stressors on coastal biodiversity and associated ecosystem services
2. University of Sheffield - Cultural and educational services from green space: Environmental and social determinants (CASE award)
3. University of York and University of Cardiff - The effects of storminess on coastal ecosystem services and wellbeing
4. Cranfield University - Matching scales: Impact of natural scales on planning, decision and policy environment
5. University of Sheffield and University of Bradford - Ecological priorities and real-world governance in the restoration of wetlands in the Humberhead Levels landscape: Do they differ and how can this be overcome?

5.5 *Tansley Programme*

The Tansley Programme comprises a five-year (2012-2016 incl.) series of workshops and working groups hosted at the Silwood Park Campus of Imperial College London, and based around the general topics relating to ecosystems, ecosystem functions and services, natural capital and ecosystem service valuation, benefits to people, sustainable use of natural capital, global change biology and biodiversity science. The first two years of the programme are funded from BESS.

Calls for workshop proposals will be issued twice-yearly, with the call open to all applicants and funding to be awarded by a Steering Committee chaired by Professor Georgina Mace FRS, University College London.

5.6 *Programme integration*

Science integration across projects will be managed and funded by the Directorate, including maintaining a working group of the key researchers leading work at the sites, maintaining contact with all project holders, co-ordinating exchange between project holders, running Directorate workshops, seminars and science meetings.

Each PI is responsible for the input of their component organisation within the consortium. The lead PI for each consortium project and/or research platform will be the key person responsible for co-ordination and integration of the research within the project or site and they will meet regularly with the Directorate to report on progress and be part of a working group of BESS researchers. Applicants are expected to allocate costs in their application budget to ensure they are able to participate in programme integration activities, such as attending meetings and workshops organised by the Directorate.

6. Partnerships and collaboration

Research project collaborations between UK scientists, research institutions, disciplines and other similar national and international programmes are strongly encouraged, where appropriate, to provide a global perspective and to draw on international scientists, techniques and facilities, and to make best use of existing national capability where appropriate in order to deliver more effectively the programme's overall *Goals*. The pros and cons of using new versus existing sites will need to be fully articulated and justified.

BESS has clear linkages with other UK initiatives including the NERC programmes Ecosystem Services and Poverty Alleviation (ESPA), Valuing Nature Network (VNN), the Environmental Virtual Observatory pilot (EVOp), Macronutrient Cycles, and the Insect Pollinator Initiative (IPI). There are also potential links to the Defra Demonstration Catchments and Natural England's Pilot Areas programmes as well as CEH's Environmental Change Network, which contributes to the wider European Long-Term Ecosystem Research Network. BESS is expected to be congruent with the aims of a second phase of the National Ecosystem Assessment, will inform the work of the *Nature Improvement Areas* initiative, and will be a major contributor to the Living with Environmental Change (LWEC) programme.

Programme partnerships will be sought, particularly with relevant UK government departments and agencies and Research Councils, to provide both direct funding and in-kind contributions to the programme.

BESS will link with similar work internationally, including the landscape-scale research being pursued within the European Long Term Ecological Research programme⁸ and its US equivalent⁹, as well as developing linkages with global programmes and initiatives such as Diversitas¹⁰ and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services¹¹.

7. Project and Programme monitoring and evaluation

The BESS Directorate will make extensive use of the web-based Monitoring, Evaluation and Communication (BESS-MEC) system, a relational database containing information on the overall aims and science questions that need to be addressed by BESS, the specific aims and objectives of the research programmes funded to meet the BESS goals and the relationships and linkages (integration) between the component research activities. The database will be populated initially by the successful PIs as a condition of award, the fields required by BESS-MEC matching those in grant applications. Thereafter, the PIs are prompted by the software to report on progress at the agreed milestones. The

⁸ <http://www.lter-europe.net>

⁹ <http://www.lternet.edu>

¹⁰ <http://www.diversitas-international.org>

¹¹ <http://www.ipbes.net>

tool allows assessment of progress towards meeting the aims of the individual research projects and the overall BESS programme goals, which can be monitored regularly and evaluated against agreed milestones and success criteria, and actions taken by the Directorate as appropriate.

8. Communications and Knowledge Exchange

BESS stakeholders include: those who make the day-to-day decisions in managing biodiversity (e.g. landowners, NGOs with estates), those in policy and public life who will need to take an ecosystem approach to environmental management (e.g. planners, local authorities, politicians, policy advisors, government departments) and groups with an interest in biodiversity maintenance, such as conservation organisations and pressure groups. Knowledge exchange with these groups will be implemented through the Directorate's communication strategy which includes: regular meetings of stakeholders and researchers co-ordinated and organised by the Directorate; brief staff exchange schemes and secondments (between BESS projects and other key delivery partners); a communications strategy that engages with the media continuously through the BESS programme by press releases, briefing documents and dedicated web content; seminar series for academics and students; and online content distributed through various channels including social media and videos. In addition, each funded project will have included a Pathways to Impact strategy outlining project-specific engagement plans.

Further information can be found in the BESS Communication, Engagement and Knowledge Exchange Strategy and the BESS Communications Implementation plan¹².

9. Data Management

Effective data management is integral to the achievement of the BESS programme goals and the development of a legacy for the programme. The BESS programme will develop a new, interdisciplinary, biodiversity science community, and data management within the programme will be geared towards ensuring that any data generated through BESS research projects are collated in a way that will best serve the developing needs of this community. The principles and guidelines for data management within the BESS programme have therefore been developed with this in mind, and have been guided by those adopted by the Rural Economy and Land Use programme (RELU).

9.1 Data Management Principles

The principles covering data management within the BESS programme are as follows:

1. Publicly-funded research data are long-term resources which have value within and beyond the BESS programme
2. Data generated from BESS projects must be well-managed to enable both the originating project, other BESS projects and other researchers, to exploit them to the maximum extent possible.

¹² <http://www.nerc-bess.net/index.php/documents>

3. BESS researchers are expected to make their data available in a timely manner for archiving and re-use by other researchers.
4. Long-term, post-programme data management will be the responsibility of NERC via existing data service providers

To ensure adherence to these principles, all BESS projects will need to:

- develop data management plans, which must be approved by the BESS Directorate
- include explicitly any costs for making data generated through the project available as described above.

9.2 Data Support and Archiving

Since all projects within BESS will be interdisciplinary across the natural and social sciences, the BESS Directorate will provide some data support as follows:

- Advice to award holders on the development of data management plans
- Advice regarding issues of data quality and archiving
- Review of what data (both quantitative and qualitative) the project will generate
- Advice on the most appropriate place for data to be archived

For advice on issues relating to ethics, confidentiality, data protection, copyright, intellectual property rights, freedom of information and information regulation, award holders are expected to make use of the guidance provided by their own institutions and abide fully by any rules and regulations imposed specifically by those institutions.

There will be no specific Data Archive set up for the BESS programme. Data from BESS projects will be archived via existing systems. Details are yet to be finalised, but possibilities for quantitative data include the Centre for Ecology and Hydrology's Environmental Information Data Centre (EIDC). Qualitative data generated from BESS may be held in the same location or separately. Whatever the specific location of the data, different data files will be linked via metadata at the project and programme level.

9.3 Responsibilities of Award Holders

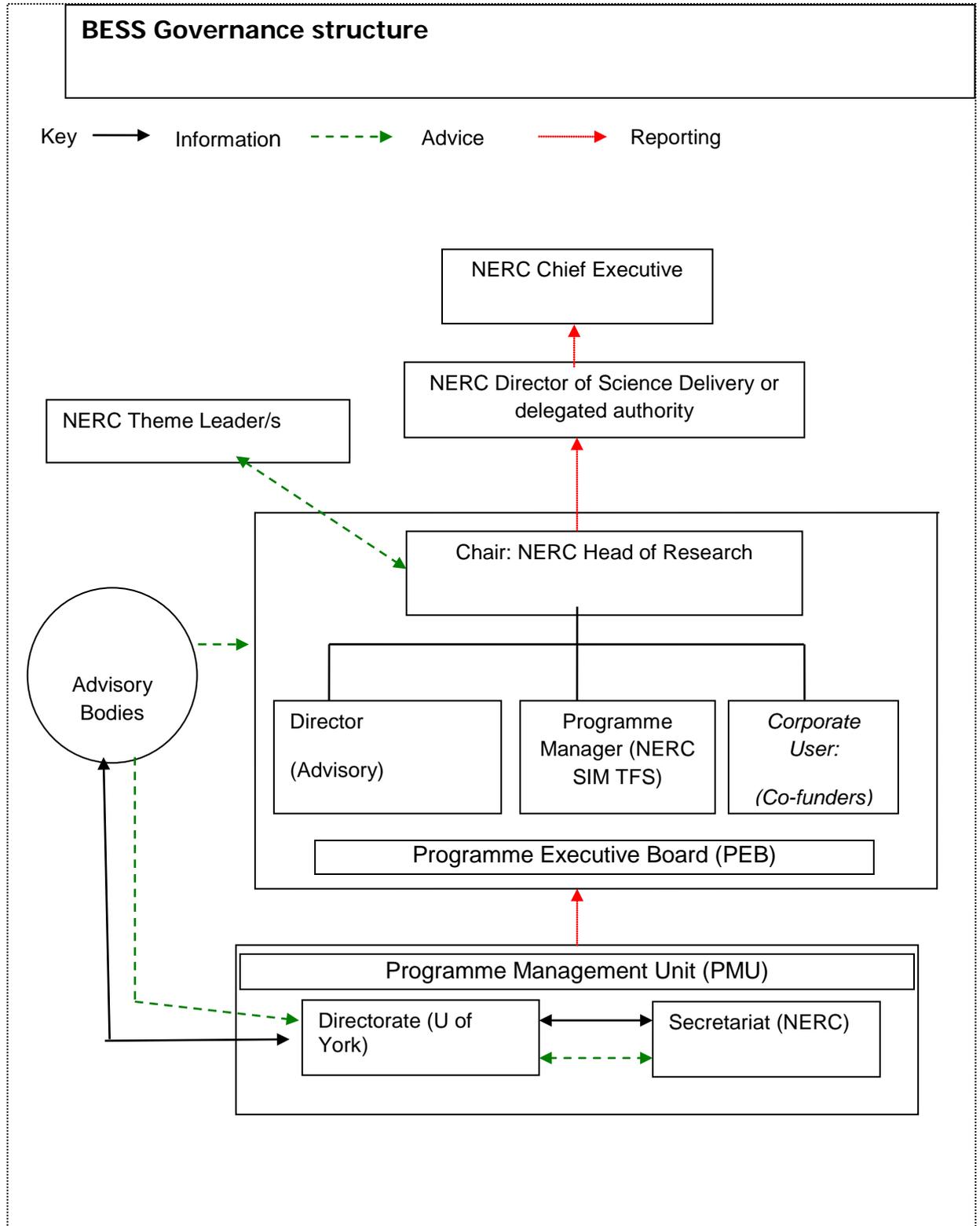
During the lifetime of a project, proper data management is the responsibility of the award holder. Award holders have the following specific responsibilities:

1. BESS award holders will be expected to submit a brief Project Data Management Plan within two months of receiving an award letter. This will be submitted to the BESS Directorate for approval. A framework for the Data Management Plan will be provided, covering the following areas: data acquisition; quality assurance; backup procedures; and data availability. Projects will also be required to provide a first point of contact for data management issues.

2. NERC expects BESS researchers to be guided by the professional codes of conduct governing their fields of work. This includes any issues regarding ethics, confidentiality, data protection, copyright, intellectual property rights, freedom of information and information regulation. NERC expects applicants for BESS funds to fully anticipate and resolve any potential difficulties arising from the above, and to demonstrate that this has been done at the proposal stage.
3. All holders of BESS awards should consult with the BESS Secretariat prior to responding to any requests from third parties for access to any datasets generated through BESS projects. They will then refer you to the appropriate person in NERC. This includes any requests which specifically invoke the Environmental Information Regulations.
4. Datasets (both quantitative and qualitative, and including model outputs) resulting from BESS projects should be offered for archiving within 3 months of project completion, together with any supporting information (metadata) in accordance with NERC Data Archiving guidance and support.
5. BESS recognises the needs for an appropriate balance between the protection of data originators' intellectual property rights and the potential benefits that may arise via use by other researchers. Individual originators of datasets will therefore be permitted a reasonable time to work exclusively on, and publish the results of, their data. PIs may therefore request that data be embargoed for up to 1 year from the date of archiving. All data requests from other researchers within the timeframe of the BESS programme would be discussed with the originator of the data, and secondary users would be expected to provide due acknowledgement of the originator(s), such as co-authorship, specific reference to the data source or a share of any financial reward.
6. Award holders will be encouraged via the Directorate to explore the sharing and exchange of data with other BESS projects and researchers at all stages of the programme, to maximise its potential value.
7. Award holders must fulfil their data management obligations before the release of final grant payments.

For further information please refer to the BESS Data Management Strategy (http://www.nerc-bess.net/documents/BESS_Data_Strategy_140912.pdf)

Annex 1 – Governance structure and Terms of Reference



Programme Executive Board (PEB) Terms of Reference

Purpose

1. The Programme Executive Board is responsible for the strategic direction and management of the programme and the delivery of the programme's objectives.

Composition

2. The Programme Executive Board, in line with NERC's widely accepted project management standards of Prince2 principles, will consist of:
 - NERC Science and Innovation Manager (SIM) for Terrestrial and Freshwater Sciences who will represent NERC's interests as executive and funder and will act as PEB Chair¹³
 - programme director as senior supplier accountable for the delivery of the Directorate responsibilities.
 - Ex officio members may include the programme deputy director and the responsible NERC Senior Science Programme Officer.
3. The PEB may be supplemented by additional members as necessary at a later date (for example co-funding partners)

Operation

4. The PEB will ordinarily meet every six months. More frequent meetings may be required during the programme initiation period and when funding calls are planned.
5. Urgent matters arising between meetings may be dealt with on a "no-objection" basis by email within a specified period of time (to be agreed by PEB)
6. There will be an annual review meeting to monitor and evaluate progress of the programme. This will typically take place at the start of a new financial year.
7. The Secretariat functions for the Programme Executive Board will be carried out by the Secretariat at NERC.
8. The Secretariat will advise the Chair on the agenda and provide necessary papers.
9. If the (lack of) availability of the Chair would prevent a meeting being held to the required schedule, then the NERC Senior Science Programme Officer will chair the meeting.

¹³ Chair responsibilities may transfer to the Programme Manager at a later date

Function and Powers

Programme Governance and Management

10. Set the performance management metrics - objectives, targets, milestones and risks;
11. Approve the Science and Implementation Plan based on programme specification or proposal and TAP and ensure their execution;
12. Approve and ensure that the Data Management Plan for the Programme is developed and implemented in accordance with the NERC Data Policy;
13. Approve and ensure the development and implementation of the Knowledge Exchange Plan, promoting transfer of the research outcomes to the user community, in accordance with the NERC policy on the management and exploitation of intellectual property.
14. Approve and ensure the implementation of a Science in Society Communication Strategy to promote the programme's various activities and outcomes to a wide audience;
15. Allocate resources including financial, e.g., profiling of funds within the programme budget, and awards for research and procurement for services;
16. Advise on and foster the development of international collaborative activities;
17. Advise on and foster the development of user engagement;
18. Agree and approve terms of reference and composition of the Programme Advisory Group;
19. Agree on the method and operation of the Executive Board including frequency of meetings, quorum, membership composition and the mechanisms for varying this.
20. Agree and approve terms of reference for Directorate and recruitment and selection of Directorate.

Programme Monitoring and Reporting

21. Monitor the progress, and evaluate the results of the programme as a whole, and of individual projects based on feedback from the Directorate;
22. Report to NERC Director of Science Delivery or their delegated Programme Manager with quarterly progress reports against the schedule for deliverable (outputs, outcomes). NERC will use this information to support our internal system for quarterly reporting against strategic deliverables (STAR). Quarterly reports should also capture any key achievements, to help NERC report highlights throughout the year, e.g. to DIUS and in highlight documents;
23. Approve Annual Programme Reports and a Final Programme Report produced by the Directorate;

Accountability

24. The PEB will be accountable to the NERC Director of Science Delivery, or delegated authority, and to the NERC Chief Executive.

Programme Management Unit

The Programme Management Unit consists of the Directorate and the NERC Secretariat. It is responsible for the overall management, coordination and delivery of the Programme.

Directorate

Purpose

1. To ensure the integrated delivery of the BESS programme by developing, in conjunction with the PEB, strategies for research, knowledge exchange, communications and data management, and implementing them.

Composition

2. The Director will oversee the Directorate and provide overall scientific leadership of the programme.
3. The Directorate will include a number of support staff as required to fulfil its objectives.

Operation

4. The function of the Directorate as supplied by the host organisation will be under contract to NERC.
5. Any staff employed within the Directorate will be under contract to the Directorate host organisation.

Function and Powers

The Director will be required to:

6. play a strategic and proactive role in the development and execution of the BESS programme; in consultation with the PEB and appropriate expert advisors, the Director will develop and define the approach, direction and scope of the programme, in order to meet the strategic needs;
7. provide overall intellectual leadership of the programme, maintaining an oversight of the research activities funded, and ensuring progress against the delivery of the programmes objectives;
8. maintain a wider view of research being undertaken in this area (nationally and internationally) and develop contacts with other relevant research initiatives to promote synergies and collaboration;
9. working in consultation with the PEB and NERC Swindon Office (SO), identify opportunities for co-funding and collaboration in order to maximise impact, and assist in negotiations thereof;
10. represent BESS in a wide variety of fora, nationally and internationally;

11. attend all PAG meetings, and PEB meetings as required, reporting on programme progress and providing further information as requested;
12. manage the BESS Directorate budget and personnel;
13. ensure routine liaison between the Directorate and award holders, to provide assurance to the PEB that projects are on schedule and meeting their objectives; and
14. undertake small scale integrative research activities that will provide a synthesis of programme research activities and approaches targeted around furthering impact and knowledge exchange.

The Directorate:

15. The Directorate will oversee the day-to-day management¹⁴ and coordination of the programme's research activities, and will be responsible for:

Programme Strategy

16. In collaboration with the PAG and the PEB, prepare a strategy for the Programme and publish written Science, Implementation, Data Management, and Communications and Impact Plans, with agreed targets and objectives against which progress can be assessed and measured
17. In consultation and collaboration with the PEB, establish a Programme Advisory Group (PAG) composed of scientists and experts of high standing in relevant fields, in order to provide strategic and independent, high quality advice to the PEB [NB: PAG members will be approved and appointed by the PEB]
18. In collaboration with the PAG, PEB and NERC SO, plan and write targeted calls for proposals, in order to ensure funding opportunities are framed in order to deliver the research appropriate to meeting the objectives of the programme science plan
19. Ensure overall scientific integration of the programme, securing effective exchange of information and coordination of the programmes various activities, for example by running regular workshops and seminars
20. Ensure synthesis and consistency of approach and methods across the programme, for example by establishing a working group of the key researchers

Liaison

21. Maintain contact with all Programme participants (the Director to visit each project holder at least once a year) and be their point of contact on science-related issues
22. Foster development of a strong, integrated BESS community
23. Subject to intellectual property considerations, in consultation with the PEB, promote, facilitate and co-ordinate the exchange of information and integration between project participants, other relevant UK-based and international research programmes, and the user

¹⁴ Overall programme governance will remain with NERC Swindon Office, including issuing grants calls and budget management.

community, in order to foster partnerships and to encourage a strong and integrated collaborative research community that extends beyond those directly funded through BESS

24. Maintain regular contact with members of the PEB, PAG and NERC SO

Advice to applicants

25. Provide scientific synopses of Grant Moderating Panel's recommendations and comments for the Programme Administrator to feed back to applicants
26. In consultation with the PEB and NERC SO, to advise research teams on any necessary pre-award adjustments to projects, including negotiation of revisions and conditions
27. To provide assistance and guidance to researchers on the progress of projects and the dissemination of findings
28. To provide scientific advice to any potential applicants for funding awards.

Promotion and Communication

29. In collaboration with the PEB and the PAG, develop a communication strategy to ensure effective communication of the Programme's objectives, activities and research findings
30. In consultation with NERC SO, develop and maintain a website for BESS that facilitates communication with and between the BESS community and other interested parties
31. In consultation with the PEB, publicise the programme to the widest possible community through the most appropriate media (with support from NERC Communications team) and produce at least one output per year suitable for non-scientific audiences
32. In consultation with the PEB, PAG and NERC SO, plan and deliver science meetings, workshops and other activities as required
33. Liaise with the PEB to prepare the specification for a final Programme event to publicise the results and achievements of the Programme
34. At the end of the programme, plan in consultation with the PEB and NERC Communications, the preparation of a high quality illustrated report summarising key findings and achievements of the research [NB: This report will be for a public audience and is in addition to the Final Report for the Programme Executive Board].

Knowledge Exchange, Partnership and Co-funding

35. Work with the PEB and NERC SO to identify potential sources of co-funding and/or collaboration, including ensuring links to existing national datasets
36. In collaboration with the PEB, develop a written Impact Plan and implement arrangements for securing maximum knowledge exchange to users at all stages of the programme, and to promote exploitation of project results to help ensure government financial investment will result in increased competitiveness, wealth creation or improved quality of life
37. Provide assistance to proposers/researchers regarding knowledge exchange of projects and provide guidelines on the protection of intellectual property

38. Support the programme through bids for NERC's Knowledge Exchange funds, where appropriate and as required.

Data Management (joint activity with NERC SO and NERC Data Centre Staff)

39. In collaboration with the NERC Data Management Coordinator and Data Centres, develop a written Data Management Plan for approval by the Programme Executive Board, and implement arrangements to ensure the establishment of mechanisms for quality assurance of data and for the dissemination of data sets and models produced during the programme, according to the NERC Data Policy
40. Monitor PI adherence to the Programme Data Management Plan and any project data management plans and ensure that PIs submit data in a timely manner.

Post-Programme Evaluation

41. Ensure that key information relating to Directorate activities is made available to the PEB and NERC SO in an orderly form at the end of the Directorate contract/agreement
42. Produce a written Final Report, for approval by the Programme Executive Board, setting out the achievements of the Programme.

Progress Monitoring and Reporting

43. Monitor progress of research projects against agreed milestones and deliverables, and include in written progress report to the PEB and PAG, as required
44. Maintain an overview of progress against Programme scientific objectives and delivery/implementation plans and include in written progress report to the PEB and PAG, as required
45. Provide a summary of scientific progress (including, but not limited to, information on projects generated as a result of the OPM reports, and information on integrative activities that provide the Programme's added value) to be incorporated into written annual progress reports to the PEB and NERC SO
46. In collaboration with NERC SO, ensure that each PI submits to NERC an annual Output and Performance Report, using electronic submission via the Research Outputs Database, to meet deadlines set by NERC
47. Review Final Reports of Research Grants, providing comments to the NERC Programme Administrator
48. Liaise with the Programme Administrator and NERC Evaluation Team to ensure that a database of these reports is maintained and can be accessed as a resource for developing the Programme's Final Report
49. Attend progress meetings with the PEB annually and at other times as requested
50. Contribute appropriate case studies to NERC Science Impacts Database¹⁵

¹⁵ <http://sid.nerc.ac.uk/>

51. Contribute three key programme highlights each year that can be considered by the NERC Achievements Panel for inclusion in the NERC Annual Report

Administration

52. Provide support for the PAG, organising meetings as requested by the PEB, and engage with this group as needed to assist on the evaluation of the projects and programmes delivery against objectives

Accountability

53. The Directorate contract will be held by NERC and the Science and Innovation Manager will manage the Director's contract and terms and conditions of service on behalf of the PEB.
54. The Director will ultimately be responsible to the PEB for delivery of his objectives.
55. Any other Directorate staff will be responsible to the Director.
56. The Directorate contract and performance will be appraised annually against the Programme Management plan.

Secretariat

Composition

1. Senior Science Programmes Officer
2. Science Programmes Officer

Operation

3. The Senior Science Programmes Officer and Science Programmes Officer will be part-time.
4. The Secretariat will be supported by the following service teams within NERC and the Shared Services Centre Ltd.
 - Finance – financial management and reporting and including audit functions
 - Contracting and Procurement – responsible for the procurement of goods and services for all the Research Councils
 - Joint Electronic Submission (Je-S) System – electronic system used to create proposals to be sent to the RC's, peer review proposals, project reporting
 - Research Grants Team – processing and issuing of grants received through Je-S
 - Admin support – as and when needed for meetings, travel and accommodation bookings
 - Communications – assistance with Programme launch and finale meetings, and publicising NERC-funded activities

Functions and Powers

6. liaison and information sharing (on grants, budget etc) with Director and his/her staff
7. liaison with NERC internal service teams (finance, grants, Je-S, procurement, communications, admin, etc)
8. provide Secretariat for PEB meetings (instigate and work with Director to formulate agenda and agree authorship of meeting papers, compiling, quality control and distributing papers, logistics, taking minutes, monitoring progress on actions)
9. provide advice on administrative and legal procedures for calls (to Director and community)
10. following agreement by PEB on call content and process, coordinate publication of calls and peer review process (checking eligibility, broad remit check, assignment of peer reviewers and proposing moderating panel members in consultation with the Director, logistics for peer review, sending out feedback, coordinating award of funds on advice of PEB)
11. contact for post-award queries and admin from researchers and NERC internal teams (extensions, virement of funds, staff changes, budget profiling etc. i.e. will consult with Director on issues affecting the research)
12. Coordinate annual reporting of output and performance monitoring of awards using NERC's Research Outputs Database (an electronic system) – assist Director where necessary to remind award holder to submit OPMs, send passwords to Director to enable them to extract the data and write the programme annual report. The annual report is used to capture highlights, publications, policy interactions etc.
13. coordinate award final reporting through Je-S (as above, ensuring director gets the right info)
14. day-to-day management of ESPA budget
15. records management of key documents

Accountability

16. The Senior Science Programmes Officer and Science Programmes Officer will be responsible to the Programme Manager.

Terms and Conditions

17. The Secretariat will be provided by NERC.
18. The fulfilment of individual roles within the Secretariat will be the responsibility of the host organisation.

Programme Advisory Group (PAG)

Purpose

1. The Programme Advisory Group (PAG) is tasked to provide independent advice to the BESS Programme Executive Board (PEB), via the Director, on the strategic direction of the programme. This includes ensuring the integration of the programmes science and knowledge exchange activities, and recommending the award of research funds when requested. The

Directorate and Programme Executive Board will retain responsibility for how such advice is used.

2. In particular, the PAG is required to carry out the following tasks:
 - Advise on setting out of programme objectives in a Science and Implementation Plan and how to ensure their execution;
 - Advise on the strategic direction of the programme, including specification of the scientific content of published announcements of opportunity;
 - Advise on the development of other national and international collaborative activities including emerging and future opportunities, and links with other relevant initiatives;
 - Advise on the development of user engagement;
 - If requested, to contribute to the review of proposals and applications made to the programme for research funds and provide the Programme Executive Board with recommendations on the allocation of funding resources;
 - Advise on data management;
 - Advise on appropriate ways to monitor, evaluate and steer the progress of the programme towards its purpose and goals;
 - Report as required to the Programme Executive Board.

Composition

3. The Programme Advisory Group will comprise approximately eight members from both the research and stakeholder sectors, with the appropriate level of expertise relevant to the BESS programme.
4. There will be an open call for membership of the PAG. Final selection and appointment will be made by the Programme Executive Board.

Operation

5. The PAG will normally meet twice a year for the duration of the programme, but more frequent meetings may be required during the first year of implementation of the BESS programme. Where possible and desirable meetings will be via videoconference.
6. By exception, PAG members may also be approached individually or collectively for advice outside the scheduled meetings.

7. The Secretariat function for the PAG will be carried out by the BESS Directorate.
8. PAG meeting agendas will be set by the BESS Director, in consultation with the PAG Chair and the PEB.

Terms and conditions

9. Members of the PAG will typically be appointed for two years, with the possibility of renewal. Membership of the PAG will be reviewed annually and adjusted if necessary according to the needs of the Programme.
10. NERC will cover all reasonable travel and subsistence costs incurred through advisory group membership responsibilities; however the NERC is unable to pay members for their time spent on such activities.
11. The members of the Programme Advisory Group will be accountable to the Programme Executive Board, through the Director.

Vested Interests

12. NERC attaches great importance to protecting the integrity of Council and the members of Committees including Advisory Bodies. All business of the PAG will be guided by Council's policy on Vested Interests.
13. The Chair of the PAG must act in an entirely independent capacity and will not be eligible to apply for research funding from the programme.
14. Members of the PAG who would ordinarily be eligible to apply for NERC funding, may submit an application to the programme as a principal investigator or as a co-investigator but will be required to leave the meeting while that proposal is being discussed.

Annex 2 – Document version control

Version	Date	Approved by	Reason for change
1.0	03 June 2011	PEB	n/a
1.1	25 August 2011	DB	clarify award funding level
1.2	24 October 2012	DB	Updated Programme activities and schedule with new calls, and PEB ToR