



Minutes of the 11th meeting of NERC Council in UK Research and Innovation (redacted)

NATURAL ENVIRONMENT RESEARCH COUNCIL

Eleventh meeting of NERC Council in UK Research and Innovation held via Zoom on Thursday, 10 December 2020.

Members present:

Professor Sir Duncan Wingham (Executive Chair), Nick Folland (Senior Independent Member), Judith Batchelar, Professor Hannah Cloke, Dr Matthew Harwood, Dr Rebecca Heaton, Professor Louise Heathwaite, Professor Sir Stephen Holgate, Professor Karin Lochte, Clare Matterson, Gordon McGregor, Professor John Pyle, Professor Dame Julia Slingo; Professor Gideon Henderson, CSA, Defra (part), Professor Graham Underwood, Chair, Science Committee

NERC/UKRI Directors (Head Office): Nigel Bird (Director, Major Projects, NERC), Sue Donaldson (Chief People Officer, UKRI) (part), Victoria McMyn (Chief Operating Officer, NERC), Alison Robinson (Deputy Executive Chair), Professor Susan Waldron (Director, Research and Skills), Dr Iain Williams (Director, Strategic Partnerships)

Apologies: None

Other attendees: Corrina Urquhart (entire meeting), Dame Ottoline Leyser (CEO, UKRI) for item 2, Paul Gemmill for item 5, Professor Mary Fowler, Dr Peter Costigan and Fiona Goff for item 8, Sophie Hodgson for item 9

Secretariat: Helen Page

Introductory items

1. Executive Chair's welcome and introductions

1.1 Duncan Wingham welcomed members to the eleventh meeting of NERC Council in UKRI and formally welcomed Professor John Pyle, Judith Batchelar and Professor Hannah Cloke to their first meeting of NERC Council.

1.2 Duncan Wingham congratulated those in the environmental science community who had been recognised in this year's Queen's Birthday Honours including:

- **Knighthood: Professor Sir Stephen Holgate**, for his services to medical research
- **CBE: Professor Ed Hill**, in recognition of his services to ocean and environmental sciences
- **CBE: Professor Yadvinder Malhi**, for services to ecosystem science
- **OBE: Professor Jason Lowe**, for services to climate science.
- **OBE: Professor Simon Pollard**, for services to environmental risk management
- **OBE: Professor Charlotte Williams**, for services to chemistry

- **MBE: Professor Chris Evans**, for services to environmental research
- **MBE: Dr Andrew Gunn**, for services to environmental research

Duncan Wingham reminded Council that he encouraged and welcomed proposals for the honours process.

- 1.3 Duncan Wingham highlighted that, to mark the 200th anniversary of the discovery of Antarctica, 26 places had been named in honour of NERC staff and scientists connected to NERC (part and present) including Professor Dame Jane Francis, Director, British Antarctic Survey (BAS), Dr Katherine Giles, former NERC independent research fellow and Professor Seymour Laxon former Director, University College London.
- 1.4 Duncan Wingham asked members for any updates to their declared interests or any vested interests in the items being discussed today. None were declared.
- 1.5 Duncan Wingham asked members for any amendments and matters arising from the minutes of the previous meeting. No amendments were made, and the minutes of the tenth meeting were confirmed as a true record.
 - Duncan Wingham advised that the majority of the actions listed on the Decisions and Actions paper were completed or on the forward agenda and provided some progress updates:
the meeting with the Helmholtz Association had been delayed by the pandemic so this action would remain open with a view to following it up once a Spending Review settlement was known
 - Black Lives Matter: Duncan Wingham asked Alison Robinson to provide an update on the development of the principles to use as a basis for future discussion. Alison Robinson commented that the principles were in development and a series of round tables with the academic community planned for early 2021 with a view to discussing this issue further at the March 2021 Council meeting
 - Gender Balance of Highlight Topics: Duncan Wingham asked Susan Waldron to provide an update. Susan Waldron explained that the data for those who had submitted ideas for consideration in 2020 had been compared to data from 2019 to see whether there had been any impact on the gender of those submitting ideas caused by the pandemic. Although there were fewer ideas submitted in 2020 than 2019 as a whole, there was only a slight variance in females submitting ideas (from 30% to 25%) which did not show a significant impact. In response to a Council query on whether there was an effective structure in place to capture gender balance, Susan Waldron explained that this was under consideration by NERC Executive with a discussion planned in December. Graham Underwood clarified that the data for those submitting applications was available, it was the data for the idea submissions which was not readily available as this was not provided when considering the ideas to reduce bias in the decision making process.

2. Dame Ottoline Leyser

- 2.1 Duncan Wingham welcomed Dame Ottoline Leyser to NERC Council.
- 2.2 Ottoline Leyser commented that she welcomed the opportunity to visit the Council meetings and learn more about the priorities across the community.

She invited views from Council on:

- i. How UKRI, given the importance of the sustainability agenda, might drive a wide sustainability imperative across both UKRI and the research and innovation system

whilst continuing to deliver growth and prosperity in a sustainable way. Ottoline Leyser acknowledged that NERC was in a pivotal and pole position to shape this agenda.

- ii. How UKRI might capitalise on the breadth and depth of expertise across the councils.
- iii. How UKRI might strengthen their argument for multi-year settlements for all of its budgets in 2021.

2.3 Council took the opportunity to discuss the following issues with Ottoline Leyser:

- i. Council highlighted that the sixth budget had recently been published by the Climate Change Committee and that there would be a role for NERC science to contribute to understanding the biodiversity 'trade-offs' in the recommendations, for example on land use, and ensuring an evidence base for policy and priority setting.
- ii. Council asked how the move away from a 'Principal Investigator' (PI) model and the increased focus on recognising all those involved in research, such as technicians, might develop in both a UKRI sense and within individual research councils.
- iii. Council queried whether the mechanisms were in place to encourage the widest collaboration on the range of societal and environmental challenges we are facing.
- iv. Council asked how UKRI were ensuring that they will meet the ambition to achieve net zero across the organisation.
- v. Council commented that transformative change would be required at universities to encourage interdisciplinarity and queried whether UKRI might be able to incentivise this.
- vi. Council asked how NERC might increase visibility of the benefits of environmental science and its benefit to the economy.

2.4 Ottoline Leyser commented that it would be important to ensure that Government focus on net zero was widened to include other sustainability criteria and she welcomed the recent announcement that Defra had been awarded funding in the Spending Review to allow joint work, for instance, on topics such as sustainable biodiversity assessments in the context of developing Agricultural Policy. Gideon Henderson commented that further discussion on these issues with UKRI would be welcomed by Defra. He highlighted that a component of the funding awarded to Defra was to monitor and measure the landscape and it would be important to consider the substantial changes required with regard to land use to meet the target of net zero whilst continuing to consider biodiversity, air and water quality.

2.5 Ottoline Leyser highlighted the importance of recognising and acknowledging the essential contribution of the entire team to create a more inclusive and attractive environment within the university sector. She explained that one of the drivers for the PI model was the way in which funding was calculated in the Research Excellence Framework (REF) which adversely affected the support staff and suggested that consideration be given to the way in which the research system was counted in the REF. Consideration should also be given to funding being allocated to a broader group rather than just to a PI and suggested a review of the balance of the UK dual support system might help to shift the narrative.

Ottoline Leyser added that UKRI had developed a resumé for researchers as part of Reforming our Business (RoB) which would provide a standard format and enable better comparisons to be made to encourage diversity.

2.6 Ottoline Leyser commented that UKRI was in a prime position within the research and innovation system to promote an integrated approach. The UKRI Spending Review bid had the research councils at the foundation and acknowledged the importance of investment in the research councils to support bottom-up collaboration and build deeper engagement with their communities. Ottoline Leyser added that work with wider Government Departments would require co-investment and would only be possible once the departments had received a Spending Review settlement. Ottoline Leyser highlighted the importance of the sustainability priority and the need to take an overarching view of activity across the system, taking into account Government and Industry priorities, to identify what might be missing and create appropriate funding opportunities which would be dependent on the outcome of

the next Spending Review.

- 2.7 Ottoline Leyser explained that Duncan Wingham was leading on Net Zero across UKRI and that a plan was in place to ensure that sustainability was key to everything that UKRI did. Duncan Wingham added that the plan would be discussed by the UKRI Board in early 2021 and emphasised that considerable change would be required to meet the target of net zero.
- 2.8 Ottoline Leyser suggested that a key element to the success of changing the way in which universities worked would be to drive an ambition amongst students to work in a more interdisciplinary way which would feed into universities.
- 2.9 Ottoline Leyser stated that there was continued support following the Stern review regarding the net zero agenda and how it was important to place environmental considerations within the context of economic benefit and emphasised the importance of presenting the evidence in a way that focused on the solutions.

3. Executive Chair's update

- 3.1 Duncan Wingham gave an oral update on some of the key activities since the previous Council meeting.

- i. RRS Sir David Attenborough

Duncan Wingham informed Council that the handover of the RRS *Sir David Attenborough* had now taken place and he thanked everyone involved for their efforts.

Council asked for a formal thank you to be recorded to Nigel Bird for his role in delivering the ship.

- ii. UK Geoenergy Observatory (UKGEOS) Virtual Opening Ceremony

Duncan Wingham informed Council that he had contributed to the opening of the first of the UK Geoenergy Observatories in Glasgow earlier that week.

- iii. Open Access update

Duncan Wingham advised that the public consultation on Open Access had now been completed and submissions had been evaluated. The intention was to make an informal submission to the Minister prior to a discussion with the UKRI Board in early 2021. A formal announcement on the outcome was expected in May 2021.

- iv. Reforming our Business

Duncan Wingham explained that the Reforming our Business agenda was key to the Spending Review negotiations. The key elements would be to reduce the amount of paperwork required for grant applications and to replace the current funding system for which Duncan Wingham would be the Senior Responsible Owner.

- v. PhD extensions

Duncan Wingham reminded Council that one of the actions which had been taken in UKRI to reduce the impact of COVID-19 included the offer to PhD students of extending their funding for a minimum of six months. As a follow up action, it had been agreed to provide a further £19 million directly to universities to support those most affected by the pandemic.

Duncan Wingham informed Council that this decision had resulted in some criticism from the community and it was evident that the communication might have been clearer in particular in emphasising that it was not possible to provide any additional support for existing students without compromising future PhD students. Duncan Wingham added

that a meeting was planned with grant holders of NERC Doctoral Training Partnerships (DTPs) to discuss their concerns and explain the constraints.

- vi. UK Infrastructure Advisory Committee
Duncan Wingham informed Council that the first meeting of the UKRI infrastructure advisory committee had recently taken place chaired by Professor Mark Thomson, the Executive Chair of STFC, and that a formal outcome was awaited.

Items for discussion

4. The UKRI 'Clean Environment and Sustainable Growth' Theme (NERC 20/37) (*Slide, item 4*)

4.1 Duncan Wingham introduced this item and explained that 'Clean Environment and Sustainable Growth' was one of the themes included in the UKRI Spending Review bid and presented a slide which provided further detail on the framework.

4.2 Duncan Wingham explained that the themes included in the bid were broad and related to issues of national importance which might be pursued through 'bottom-up' cross-council and council specific activity. Duncan Wingham added that further detail on the proposed activities that might be supported across UKRI was available in Annex B and that the environmental priorities had been broken down into four areas:

- build a net zero, carbon-neutral future
- sustain a clean, biodiverse environment
- circularise the UK economy
- facilitate sustainable behaviours and efficient markets

Duncan Wingham added that research councils were keen to pursue bottom-up activity under this theme.

4.3 Duncan Wingham highlighted that it remained unclear whether budget would be available within UKRI to pursue this agenda and cautioned that Government focus remained on net zero and mitigation so it would be important to maintain width if the focus of any top-down funds proved to be narrow.

4.4 Council welcomed the paper which was helpful and clear and provided some comments:

i. Council emphasised the importance of the levelling up agenda particularly in working with the devolved administrations on land use. It would also be important to work internationally on net zero and consider the potential contribution of developing countries on adaptation.

ii. Gideon Henderson commented that mitigation was a major driver in Government, particularly within BEIS, but added that other government departments had more diverse interests. He explained that, in Defra, the Environment Bill was currently in progress and contained legal obligations to set and meet targets on air quality, water quality biodiversity and waste. He emphasised the importance of working with other government departments and Duncan Wingham agreed that a broad conversation on land use between NERC and Defra would be useful. Gideon Henderson commented that there were huge opportunities for UK growth and translational research and he welcomed the ambition of the paper and suggested that UKRI needed to work in a broad and collaborative way to deliver on this.

iii. Council highlighted the importance of the role of NERC in pursuing the adaptation agenda and promoting its importance within Government.

iv. Council suggested that a more proactive approach to innovation was required to improve

engagement between NERC and Innovate UK. Council suggested that the work on the Infrastructure Roadmap might help in any review of innovation.

- v. Council queried whether the co-benefits of health and environment had been considered.
 - vi. Council commented that the paper did not include the use of hydrogen as a domestic fuel and the impact of its use, such as the effect on indoor air quality.
- 4.5 Duncan Wingham thanked Council for their comments and reminded them that the Spending Review bid was partly filtered by Government interest which explained some of the focus on mitigation. In response to the query regarding hydrogen, Duncan Wingham confirmed that this was within NERC remit should it choose to pursue this as a separate initiative. He commented that health was not currently included under this theme although this would be welcomed. Duncan Wingham finished by commenting that this would be a rapidly evolving landscape and that wider engagement would be sought once the framework was finalised.

5. Reforming Our Business (*Slides, item 5*)

- 5.1 Duncan Wingham welcomed Paul Gemmill, Portfolio Director, Reforming our Business (RoB), to the meeting to provide an update on the project.
- 5.2 Paul Gemmill presented slides to give an overview of the scope of RoB, the aim of which was to make UKRI's operations simpler and better for both staff and stakeholders. A key element of the project would be to deliver a simpler and better funding system for which Duncan Wingham was the Senior Responsible Owner.
- 5.3 Paul Gemmill explained that there were 13 priority areas which were being considered for the new funding programme with six priorities as the initial focus; two-stage application process, single resumé format for researchers, simplified outcomes monitoring and reporting, simplified end of award process, bureaucracy costs calculated and TRAC reviewed and improved. He outlined the timetable to March 2021.
- 5.4 Council raised the following queries:
- how UKRI would maintain simplicity in a complex funding landscape
 - whether UKRI had consulted with 'digital natives' to ensure the latest technology was being considered
 - whether there was an expectation to capture the results of previous UKRI funding
 - whether consideration had been given to flexibility, particularly with regard to timescales and the wide variety of funding schemes.
- 5.5 Paul Gemmill responded that the complexity of the funding would continue to provide challenges although the new system would be modular and more flexible than the current system. He added that an imminent review of bureaucracy at BEIS along with ongoing conversations might provide opportunities to address this further.
- 5.6 Paul Gemmill agreed to report back in response to the question on capturing outcomes of previous UKRI funding. He emphasised, however, that the intention was to reduce the amount of information being requested from applicants, particularly at the initial stage and to use existing material already available where possible.
- 5.7 Duncan Wingham added that the system had much greater flexibility and it would be important to ensure that the flexibility of the system was matched by more flexible ways of working in future.
- 5.8 Duncan Wingham thanked Paul Gemmill for his useful overview of the project.

6. Strategic Tensions within the NERC Science Budget (NERC 20/38)

- 6.1 Duncan Wingham introduced this item and explained that, in advance of the forthcoming Spending Review settlement, he wanted to highlight to Council a range of historic underlying tensions within the existing NERC budget and the actions NERC had taken to manage this.
- 6.2 Duncan Wingham explained that the main pressures included: unmet demand for Discovery Science; limited opportunities for NERC-directed Strategic Science and Innovation due to reduction in budget; and the distribution of scientific funding within the National Capability portfolio.
- 6.3 Council welcomed the paper and the opportunity to consider the tensions and how to resolve them. Council acknowledged the effort which had been made by NERC to address these tensions.

Discovery Science

- 6.4 Council supported the importance of Discovery Science, particularly for early career scientists. Council highlighted the importance of this funding mechanism for both the UK and for UKRI as Discovery Science was a core element and unique to UKRI. Council added that an increased focus on the outcomes and impact would be important and opportunities to shape the community considered.
- 6.5 Duncan Wingham commented that there was limited evidence that the outcomes of Discovery Science were of higher quality in comparison to the outcomes from Strategic Science. He added that there were some other sources of Discovery Science funding from Quality Related research funding (QR) and European Research Council (ERC) funding.

Strategic Science and Innovation

- 6.6 Council commented that it would be important to consider the success of the strategic initiatives to inform future decision making and enable stakeholders to understand the priorities that were important to NERC.

National Capability

7. HMG Comprehensive Spending Review 2020 (NERC 20/39) (Slide, item 7)

- 7.1 Alison Robinson introduced this item explaining that NERC had not yet been asked to submit a Spending Review (SR) bid. She added that the expectation was that a submission may be made in January 2021 but there remained some uncertainty regarding the information which might be requested. Duncan Wingham added that there was a possibility that NERC may not ultimately be asked to submit a Spending Review bid with information being requested in a different format.
- 7.2 Alison Robinson presented a slide which outlined the NERC-wide priorities for the Spending Review approach and invited Council comment on the progress made in developing the framework to advance NERC thinking in anticipation of a spending review bid.
- 7.3 Council welcomed the opportunity to view the Spending Review approach on one slide which was clear and helpful. In discussion, Council raised the following points:
 - i. The importance of considering the interface between the NERC-wide priorities 'Nurturing People and Ideas' and 'World Class capability and Infrastructure'
 - ii. To bring in more of a sense of 'what' would be funded and what the outputs might be alongside 'how' we would deliver a spending review outcome

- iii. The importance of human behavioural change and working closely with the other councils to ensure we have the expertise to drive the change
- iv. The involvement of industry in the broadest sense and consideration of innovative ways of connecting with society to influence behaviour change and inform future environmental science
- v. The recognition of both the environmental societal challenges and the solutions
- vi. The importance of innovative public engagement and working across Government Departments and how linkage to COP26 might be explored
- vii. The benefits of National Capability to be better articulated
- viii. The 'Productive, Resilient and Healthy Environments' to be represented as central to the bid.

7.4 Alison Robinson responded that the opportunities for public engagement and working with industry would be welcomed. She added that some thought had already been given to 'what' might be done and this would continue to be developed. She thanked Council for their comments which would be used to develop the NERC preparatory work further. Duncan Wingham commented that it would be important to differentiate between what should be funded by NERC as opposed to what UKRI should fund.

8. Evaluation of NERC Centres 2020: results and next steps (NERC 20/40)

8.1 Duncan Wingham welcomed Professor Mary Fowler and Dr Peter Costigan, the Evaluation of Centres Panel Chairs, to the meeting.

8.2 Fiona Goff observed this item.

8.3 Iain Williams introduced this item and reminded Council that an evaluation of the research centres had taken place in the summer 2020 using the Research Excellence Framework (REF) methodology.

8.4 Professor Mary Fowler was invited to comment on the evaluation and explained that some adjustments had been required to conduct the evaluation virtually and she expressed her thanks to Fiona Goff for the efficient and effective process. She highlighted that one of the key changes from the previous evaluation related to the number of outputs submitted which resulted in comparisons being difficult to make between the research centres and the Higher Education Institutions (HEIs) until the 2021 REF was completed.

8.5 Council noted that, although a direct comparison was not possible, the results showed that the quality of the centres' science as a whole was broadly commensurate with HEIs (approximately equating to the lower tier of the Russell Group of universities).

8.6 Dr Peter Costigan added that there had been an increased focus on Equality, Diversity and Inclusion (EDI) in the latest evaluation. He also explained that the differences between the impact scores for research centres and HEIs may appear exaggerated due to the small sample of case studies available. He added that there was a lack of emphasis on collaborative work across the centres within the environment statement.

8.10 Duncan Wingham thanked Mary Fowler and Peter Costigan for their excellent work on behalf of NERC Council. He clarified that the intention would be to repeat the assessment within a similar timeframe.

9. Consideration of the outline proposals for Round 2 of NERC National Capability Multi-Centre Science (NERC 20/41) (Slides, item 9)

9.1 Iain Williams introduced this item and presented slides. Sophie Hodgson observed this item.

9.2 Iain Williams explained that the NERC research centres had been invited to submit outline

proposals and that the six outline proposals were detailed in Annex A. The proposals had been reviewed by Science Committee in November and Graham Underwood was invited to comment on the discussion.

9.3 Graham Underwood commented that a thorough discussion of each proposal had taken place using the criteria outlined in the paper along with the Council steer to ensure the proposals were novel and ambitious. The feedback from Science Committee was provided in Annex B and Graham Underwood explained that Science Committee had considered some of the proposals to be promising whilst others required further development.

9.4 Iain Williams confirmed that the feedback from Science Committee and Council would be shared with the centres and Principal Investigators (PIs). He invited comment from Council on the outline proposals and whether they were likely to meet the objectives of the multi-centre science programme including meeting the NERC Delivery Plan priorities.

10. NERC financial forecasts 2020/21 (NERC 20/42)

10.1 Duncan Wingham introduced this item and highlighted a significant underspend in the NERC budget caused by delaying planned research activities due to COVID-19. He explained that some of the underspend would be used to repay UKRI finance for the overspend which they had previously absorbed.

10.2 Duncan Wingham explained that there was one risk to highlight with regard to an anticipated significant decrease in Official Development Assistance (ODA).

11. Review of the Top Risks at December 2020 (NERC 20/43)

11.1 Duncan Wingham introduced this item and asked for comment from Council.

11.2 Council commented that they welcomed the escalated risk on EDI representation in NERC funding.

11.3 Council were content that the risks were being managed appropriately and no further comments were made.

12. Unconfirmed minutes of the 6th meeting of Science Committee: November 2020 (NERC 20/44)

12.1 Graham Underwood updated Council on the sixth meeting of Science Committee held in November 2020.

12.2 Graham Underwood informed Council that four new members had recently been recruited to Science Committee and an announcement on the appointments would be made soon.

12.3 Graham Underwood commented that items discussed at the recent Science Committee meeting had included EDI data and issues and the Pushing the Frontiers scheme including the role of PIs and the importance of recognising the research infrastructure as a whole. Science Committee had also reviewed their Terms of Reference now that the committee had been established for one year.

12.4 Duncan Wingham expressed thanks, on behalf of NERC Council, to Graham Underwood for an excellent first year as Chair of Science Committee.

13. Rolling Programme (NERC 20/45)

13.1 Duncan Wingham reminded members that this item provided an opportunity for them to suggest items for forthcoming meetings.

13.2 Council made some suggestions of items for future meetings:

- i. It was agreed to share the anonymised outcome from the Changing the Environment first stage panel meeting (taking place January 2021) at the next Council meeting to provide reassurance on the process and gain Council feedback ahead of the full proposal stage.
- ii. It was agreed to investigate whether a future presentation on strategic issues at Defra might be arranged.
Stephen Holgate offered to explore ways in which to improve engagement with MRC
- iii. It was suggested that NERC identify role models within the research community to exemplify the diversity of the research community and Duncan Wingham confirmed that a broader discussion on EDI was scheduled for the next meeting
- iv. It was suggested that regular updates on sustainability and/or media updates might be provided to Council in future
- v. It was agreed to consider the issues surrounding ODA funding at a future meeting.

ACTION: Add Council suggestions to the rolling programme

14. Any Other Business

14.1 Duncan Wingham thanked Council for a productive meeting.

14.2 The meeting was closed.