



## Minutes of the 25<sup>th</sup> meeting of NERC Council in UK Research and Innovation

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### NATURAL ENVIRONMENT RESEARCH COUNCIL

Twenty-fifth meeting of NERC Council in UK Research and Innovation held at Lancaster University on Thursday, 20 June 2024.

**Members present:**

Professor Louise Heathwaite (NERC Executive Chair), Cathrine Armour, Judith Batchelar (part, via Zoom), Professor Hannah Cloke, Professor Kevin Gaston, Professor Mike Kendall, Michael Lewis, Peter Liss, Clare Matterson, Gordon McGregor, Professor John Pyle

Professor David Hannah, Chair, Science Committee, Professor Gideon Henderson, CSA, Defra, Charlie McNichol-Fardon, Chair, Future Leaders Council

**NERC/UKRI Directors (Head Office):** Alison Robinson (Deputy Executive Chair and Interim Chief Operating Officer) Dr Iain Williams (Director, Strategic Partnerships), Siobhan Peters (UKRI, Chief Finance Officer) (Item 4 only) (via Zoom)

**Apologies:** Rashik Parmar, Professor Sir Stephen Holgate

**Other attendees:** Tracy Shimmield, incoming Interim Director Research and Skills (from 1 July 2024), Kate Hamer and Liam Haydon, Item 2, Michaela Simpson, Item 5 (via Zoom)

**Secretariat:** Helen Page, Katrina Lewis

### Introductory items

**1. Executive Chair's welcome, unconfirmed minutes of the 24<sup>th</sup> meeting of NERC Council and Decisions and Actions (Oral)**

1.1 Louise Heathwaite welcomed members to the twenty-fifth meeting of NERC Council and noted that apologies had been received for the meeting from Stephen Holgate and Rashik Parmar.

1.2 Louise Heathwaite welcomed Cathrine Armour and Kevin Gaston to their first NERC Council meeting following their appointment start date of 1 April 2024.

1.3 Louise Heathwaite welcomed Tracy Shimmield who was attending the meeting as an observer, prior to commencing her interim appointment as Director, Research and Skills on 1 July 2024.

1.4 Louise Heathwaite reminded members to ensure their declared interests were kept updated via the self-service portal, adding that updates might also be sent to Helen Page who would update the portal on members behalf. Louise Heathwaite asked if there were any vested interests in any of the items being discussed today. None were declared.

- 1.5 Louise Heathwaite congratulated those in the environmental science community who had been recognised in the King's Birthday Honours including:
- **Knighthood:** Professor James Ferguson Skea, CBE FRSE. Emeritus Professor, Centre for Environmental Policy, Imperial College London and International Institute for Environment and Development for services to Climate Science
  - **Dame Commander of the Order of the British Empire:** Professor Judith Petts, CBE for services to Higher Education and sustainability
  - **OBE:** Professor Harriet Ann Bulkeley, FBA. Professor of Geography and Deputy Executive Dean, Research, Durham University for services to Geography and to Environmental Governance
  - **OBE:** Professor Geoffrey Michael Gadd, Boyd Baxter Chair of Biology, University of Dundee for services to Mycology and Environmental Microbiology
  - **OBE:** Professor Rachel Ann Mills, Senior Vice President (Academic), King's College London, for services to Marine Science
  - **MBE:** Professor Angus Atkinson, Senior Marine Ecologist, Plymouth Marine Laboratory for services to Polar Marine Research and Conservation
- 1.6 Gideon Henderson added that an MBE had also been awarded to Dr Louise Ball, Defra for services to Science and Technology.
- 1.7 Louise Heathwaite asked members for any amendments and matters arising from the minutes of the previous meeting. No amendments were made, and the minutes of the twenty-fourth meeting were confirmed as an accurate record.
- 2. Council retreat: discussion of outcomes (Oral), Slide, Item 2**
- 2.1 Louise Heathwaite introduced this session which provided an opportunity to reflect on the Council retreat the previous day, adding that she was keen to receive feedback from Council members on any ideas for improving the format for future retreats.
- 2.2 Liam Haydon outlined the key themes which had been discussed at the NERC Council retreat, presenting a visual illustration which had captured discussion under four headings:
- Introduction from the NERC Executive Chair (the year ahead)
  - national risks in a global context
  - the NERC 'domains'
  - NERC leadership within the UK Research and Development system
- 2.3 Liam Haydon invited Council to share reflections on the retreat, noting that the visual illustration might still be revised if any key points were missing or needed augmenting.
- 2.4 Louise Heathwaite extended thanks, on behalf of Council, to all of those who had helped in the organisation of the retreat. She added that thanks should also be extended to Professor Christopher Smith, Sir Ian Boyd, Dr Doug Gurr and Professor Chris Pearce who had introduced the sessions and helped to provoke discussion.
- 2.5 Council agreed that the retreat had provided an opportunity for some stimulating and rich discussions and agreed that the visual illustration was a novel way of capturing the outcomes and had encapsulated a wide range of the discussions.

- 2.6 Council suggested that it would be useful to provide a benchmark of the current position for the next retreat as context to the questions posed. The following points were raised in discussion:
- **national risks in a global context:**
    - a suggestion to re-word some of the questions to avoid overlap
    - a suggestion to extend the time provided for this session
  - **the NERC domains:**
    - generally well received, particularly the sessions on subsurface and terrestrial
    - a suggestion to either allocate people to a particular session or encourage more movement between sessions
    - the focus on NERC domains was less useful for encouraging interdisciplinary work
  - **NERC leadership within the UK Research and Development system:**
    - a suggestion to include some activity, given its timing immediately after lunch
- 2.7 Charlie McNichol-Fardon commented that the Future Leaders Council (FLC) had found the retreat engaging and had welcomed the opportunity to forge connections with other members of NERC boards and committees. She asked how the ideas captured at the retreat would be taken forward into future planning and whether Council might have a role to play in this.
- 2.8 David Hannah added that Science Committee (SC) had also enjoyed the retreat adding that the format had worked well and would help SC to understand its role in feeding into future planning.
- 2.9 Council suggested that a framework for prioritisation might help in the planning phase noting that NERC, as a funder, would not be in a position to resolve all the issues raised but did have a role to play in shaping, influencing, facilitating and convening. Louise Heathwaite added that a better understanding of the outcomes of NERC funding would help to improve future funding opportunities and create some circularity. She added that both SC and the FLC would have roles to play in helping NERC learn from what we are investing in to ensure the quality of NERC funding opportunities attracts talent to NERC given the increasing opportunities for funding across UKRI.

[Gordon McGregor joined the meeting]

- 2.10 Council highlighted the importance of funding opportunities demonstrating career path and progression to ensure NERC was both attracting and retaining talent. Council added that it would be important to attract new talent to NERC by exploring the barriers for those who were not currently applying for funding and how best to stimulate interest in environmental science. Charlie McNichol-Fardon commented that it would be important to ensure there was also consideration of attracting talent with diversity of thought and ensuring those from underrepresented groups were included.
- 2.11 Alison Robinson confirmed that Council would be involved as the planning took shape and there would be further discussion on the plans at both the September and December Council meetings.
- ACTION: Items to be added to the agendas for both September and December on taking forward the ideas captured at the Council retreat**
- 2.12 Gideon Henderson asked for more detail on the UKRI Strategic Themes including on the planned cross-council approach on People and Careers, as outlined in the UKRI strategy. Louise Heathwaite commented that the UKRI themes were key to encouraging cross-council working, adding that it would be important to have a Council discussion on Talent and Skills including reviewing the evidence of numbers choosing to study environmental science.

**ACTION: Discussion on Talent and Skills to include evidence on the numbers choosing to study environmental science**

2.13 Alison Robinson commented on some of the key areas for further consideration, noting the:

- importance of defining the role of NERC and how that fitted within UKRI
- need for a fresh approach given the new environment
- opportunity to improve staff morale by taking a long-term strategic approach
- key suggestions for the next retreat, including the clearer focus
- opportunity for Council to raise topics for discussion at the joint session with BBSRC in September

2.14 Council commented on the difficulties surrounding attracting talent to environmental science and in STEM (science, technology, engineering and mathematics) areas more broadly, noting that it would be important to strengthen public engagement in this area.

2.15 Louise Heathwaite thanked Council for its comments which would be taken into account for future planning.

### **3. Executive Chair update**

3.1 Louise Heathwaite provided some reflections since joining NERC, noting that her induction was ongoing and that it had been a period of intense activity given the forthcoming General Election and uncertainty surrounding the Spending Review. She extended her thanks to the NERC Executive, especially to Alison Robinson, for their support and to NERC Head Office who had been providing excellent briefings during this induction period. Louise Heathwaite thanked Mike Kendall and Rashik Parmar for their help in the recruitment of Tracy Shimmield noting this was a welcome appointment.

3.2 Louise Heathwaite explained that one of her areas of focus since joining as NERC Executive Chair had been on financial matters, including the budgets for 2023/24 and 2024/25 adding that there had also been some recent discussion around partitioning of budgets (including the Antarctic Logistics Infrastructure (ALI) partition). She added that she had already met with the NERC Associate Directors to discuss key topics and was keen to initiate a series of visits to NERC research centres and universities over the coming months. Louise Heathwaite informed Council that she would be taking on the role of Sustainability Champion for UKRI from September and acknowledged the excellent work done by Alison Robinson and Susan Simon (MRC) in this area.

3.3 Louise Heathwaite informed Council that, since assuming the role, she had met with the Director General for Science, Innovation and Growth at the Department for Science, Innovation and Technology (DSIT), Alex Jones, the UKRI Board Chair and Ottoline Leyser, UKRI CEO. She added that she was a member of the UKRI Executive Committee (ExCo) where there was a focus on the UKRI Strategic Themes, noting that it had been decided that the Executive Chairs would also meet outside of ExCo to focus on matters of a more scientific nature.

3.4 Louise Heathwaite reminded Council that the next meeting in September would include a joint session with BBSRC Council and invited members to send through topics for discussion to feed into the planning.

3.5 Louise Heathwaite highlighted some topics for future meetings including:

- Future Marine Research Infrastructure (FMRI) (September Council)
- National Capability (December Council)
- Trusted Research (December Council)
- Building a Green Future (timing TBC)



- 3.6 Louise Heathwaite advised Council that a NERC Public Engagement Showcase was being held in Cardiff in October 2024. Council members would receive an invite to join an event on Friday, 18 October.

#### **4. Update from UKRI**

- 4.1 Louise Heathwaite welcomed Siobhan Peters, Chief Financial Officer, UKRI to her first NERC Council meeting.

- 4.2 Siobhan Peters provided an update on some of the current UKRI priorities:

##### Budget 2024/25

Siobhan Peters explained that UKRI was in the third year of a three-year Spending Review adding that it would be important to ensure a balanced budget by financial year end. She explained that there had been an initial over commitment of budget to avoid an underspend, adding that it would be key to ensure forecasting and budget management was robust. Siobhan Peters commented that it was not yet clear whether a one-year rollover or a full Spending Review would be implemented after the election, adding that UKRI was continuing to plan for both possibilities.

##### UKRI Organisational Change

Siobhan Peters informed Council that BBSRC would have a new Executive Chair, Professor Anne Ferguson-Smith, who was due to start in July adding that recruitment was also underway to replace the CEO, Innovate UK and the Executive Chair, STFC.

Siobhan Peters reminded Council that the UKRI CEO, Ottoline Leyser, would step down from her role in June 2025 and that the role was currently being advertised. She added that some additional operational changes were taking place at UKRI with the appointments of:

- a Chief Information Officer (Christine Ashton)
- a Chief of External Affairs and Communications (Poli Stuart-Lacey)
- an acting Chief of Planning and Strategy (Dan Shah)

##### Services for HR, Accounting, Reporting and Procurement (SHARP) programme

Siobhan Peters explained that SHARP was due to go live towards the end of 2024 and that UKRI was currently at the business engagement stage. She added that the new system was more user-friendly and that there would be support provided for staff during the implementation stage.

##### The Funding Service

Siobhan Peters explained that the Funding Service was now live with the majority of grant applications now being received through it. She added that the next stage would involve the transition of post award and live grant management into the system and that this phase would require some additional consideration before proceeding.

- 4.3 Louise Heathwaite thanked Siobhan Peters for her update.
- 4.4 Council asked whether NERC Council would have a role to play in preparing for the forthcoming Spending Review (SR). Louise Heathwaite commented that the ideas produced at the retreat would feed into SR planning and reminded Council that UKRI would not submit a bid into the Spending Review as this would be part of the submission by the Department of Science, Innovation and Technology (DSIT). She added that the Executive Chairs had been invited to join a newly formed Spending Review working group. Alison Robinson confirmed that there would be a discussion on the SR at the September Council

meeting.

## Items for discussion

### 5. UKRI Organisational Change Programme (NERC 24/12)

- 5.1 Alison Robinson introduced this item to outline the aims of the UKRI organisational change programme and potential impact for NERC. She noted that Siobhan Peters had outlined the UKRI-wide focus of these change programmes as part of the previous agenda item. Michaela Simpson observed (via Zoom).
- 5.2 Alison Robinson reminded Council that NERC comprised of three elements: NERC Head Office; British Antarctic Survey (BAS) and the British Geological Survey (BGS) and that the change programmes impacted each part of the organisation in different ways.
- 5.3 Alison Robinson commented that there were some concerns that the forthcoming system changes being implemented as part of the Operating Model, such as Simpler Better Funding (SBF) and the introduction of service catalogues would lead to an increased workload for teams within NERC Head Office who were already working at capacity with some signals of low staff morale. She added that NERC had highlighted its business-critical requirements into the Services for HR, Accounting, Reporting and Procurement (SHARP) programme, for example, the challenges caused by having a self-service element within SHARP for field workers in BAS and BGS. She added that NERC had raised concerns over how the systems would integrate and noted that the delay to the implementation of SBF was likely to have cost implications.
- 5.4 Alison Robinson informed Council that one element to the organisational change programme was a People and Culture programme which had some positive elements, noting that it would be important to prioritise staff welfare given the various pressures at the moment. She added that the results of a recent staff survey were currently being collated.
- 5.5 Council expressed its concern that there were issues with staff morale and asked whether remote working was exacerbating the situation.
- 5.6 Council asked for clarification on whether the role of SBF in providing evidence to fund the best ideas was a new functionality and also queried whether the potential for the removal of call deadlines might lead to a decline in applications. Alison Robinson explained that one of the aims of SBF was harmonisation and that there was currently no data to suggest that removing the deadline would lead to fewer applications.
- 5.7 Council noted that the recent staff survey would provide a good starting point to address staff concerns. Gideon Henderson added that a 'you said, we did' method might be a useful approach. Alison Robinson agreed to provide an update on the results of the survey at the September Council meeting.  
**ACTION: Item to be added to the September Council agenda on the results of the staff survey**
- 5.8 Council raised some concern about the risks associated with the implementation of SHARP as well as the cost caused by delays. Alison Robinson commented that the delay to implementation would provide an opportunity to resolve any issues, acknowledging that any additional cost would need to be met from existing budgets across UKRI.
- 5.9 David Hannah shared some concerns raised by members of SC including with regard to the science classification proposals which were likely to become less granular making evidence tracking more difficult. He added that it would be important to communicate the change to the research community at an early stage. Alison Robinson commented that there were ongoing conversations on these issues and confirmed that she would continue

to highlight the importance of communicating the changes with the community.

## **6. Science Presentations (Oral) Slides, item 7**

6.1 Louise Heathwaite welcomed Dan Read and John Remedios to the NERC Council meeting. They had been invited to present to Council on:

- cutting edge molecular biology and environmental pollution using eDNA, Dr Dan Read, UK Centre for Ecology and Hydrology
- adding value to DSIT Space Strategy and UK COP activities through NCEO and its science work, Professor John Remedios, National Centre for Earth Observation to the meeting

Both presentations have been made available on the Council SharePoint site.

6.2 In his presentation, Dan Read provided an introduction to environmental DNA, outlined some case studies and some of the challenges and opportunities. In discussion, following the presentation, Council made the following comments:

- what was the pace, scale and accessibility of this research and was it international
- what might NERC do to enable data collection and data sharing
- whether there was any potential link to domestic gardens
- whether there might be value in linking up with the National Education Nature Park (co-run by the Natural History Museum and Royal Horticultural Society)
- who looked after the data library

6.3 Dan Read commented that work was already happening at pace with a lot of work in generating big data sets with the challenge being how to make the data available and interoperable. He added that global collaboration was starting to take place and acknowledged the key role that the UK DNA working group had in bringing together government agencies, end users, academic communities and commercial companies.

6.4 Dan Read informed Council that there was a need for a UK specific data library which would link to the Barcode of Life Data System (BOLD).

[Mike Kendall left the meeting]

6.5 John Remedios presented on the work of NCEO and how this contributed both to the UK national space strategy and in supporting the preparation for the Climate Conference of the Parties (COP).

6.6 Council raised the following comments in discussion:

- whether NCEO worked with Innovate UK to secure innovation funding
- whether NCEO worked closely with Copernicus
- how NCEO might secure additional funding in the context of a decreasing investment in space in the UK
- whether NCEO might provide insight on methane emissions given the move from coal fired to gas and liquefied natural gas plants
- whether there were opportunities to create verification tools to help with carbon reporting

6.7 John Remedios commented that it would welcome a strategic interest in this area from Innovate UK and confirmed that he welcomed the opportunity to re-connect with Copernicus.

6.8 Louise Heathwaite thanked both speakers for an interesting session.

## **7 Future Leaders Council: agenda and annual report (NERC 24/15)**

- 7.1 Charlie McNichol-Fardon provided an update on the topics for discussion at the last meeting of the FLC held in June at the British Antarctic Survey (BAS). Topics had included: an explanation of the Spending Review process; FLC annual self-assessment; risk management; scope of the role modelling scheme; Hydrogenated Vegetable Oil marine fuel trials. She added that members had also been provided with a tour of BAS.
- 7.2 Charlie McNichol-Fardon expressed her thanks, on behalf of the FLC, to Council members for their role in the establishment of the FLC which had enjoyed a successful first year.
- 7.3 Charlie McNichol-Fardon reminded Council that it had been provided with a copy of the FLC's first annual report, adding that the FLC had covered topics in its first year such as: NERC's net zero pathway; Diversity and Inclusion and NERC Public Engagement strategy. There was an acknowledgement that the FLC would welcome greater involvement in NERC's digital strategy and approaches and it was agreed to seek FLC input on progress made with the digital strategy since its publication.
- 7.4 Charlie McNichol-Fardon thanked Council members who had engaged with the FLC in the first year and invited Council members to continue to engage with the FLC as members found this enriched their experience.
- 7.5 Charlie McNichol-Fardon asked Council to agree whether the report might be published and also invited suggestions for future topics for discussion at the FLC as well as comments on the format of the annual report.
- 7.6 Council members congratulated the FLC on a successful first year which was reflected in the excellent report and agreed that it would be useful to publish the annual report, noting the need to be clear, for example, on what had been spent as part of the Diversity and Inclusion funding line.
- DECISION: The Future Leaders Council annual report to be published following a final review**
- 7.7 Gideon Henderson commented that one area where it would be useful to gain FLC input would be on talent and skills.
- 7.8 David Hannah informed Council that there were synergies in the discussions held at SC and FLC and noted that the FLC had been invited to join SC for dinner at its October meeting.
- 7.9 Council commented positively on both the high level of engagement from the FLC at the Council retreat and the leadership provided for the FLC by Charlie McNichol-Fardon.
- 7.10 Council suggested that the FLC might provide a role model for other boards/committees within UKRI and Alison Robinson agreed that the model should be widely promoted and that there was already some interest in the model from MRC.
- 8. NERC Financial Outturn 2023/24 and Draft Budget 2024/25 (NERC 24/13) Slides, item 9**
- 8.1 Cathrine Armour, Judith Batchelar and Tracy Shimmield left the meeting for this item due to a conflict of interest (NB: the finance paper and slides were not shared).
- 8.2 Alison Robinson presented a slide to illustrate some of the key financial issues, adding that NERC had a broadly balanced budget in 2024/25 but with limited headroom and significant cost pressures.

- 8.3 Alison Robinson explained that NERC was working closely with UKRI finance, BAS and BGS to ensure financial controls were in place. She added that ensuring community success in gaining funding through the UKRI collective funds would also be important.
- 8.4 Louise Heathwaite highlighted the importance of taking a long-term view, ideally over a ten-year period to produce a forward look over based on prioritisation of ideas.
- 8.5 Council expressed some concern over the current financial situation for NERC and noted that universities were facing similar budgetary pressures. Council asked whether it would be asked to consider the issue of the increased budget which would be required for using biofuels for the NERC ships and Alison Robinson advised that Council would be consulted on this at the September meeting, noting this was a key intervention to meet net zero as ships were the largest source of carbon emissions within NERC.

## **9. NERC Top Risks – Quarterly Risk Review (NERC 24/14)**

- 9.1 Alison Robinson informed Council that she had been reviewing and implementing changes to the risk management process since assuming responsibility for it.
- 9.2 Alison Robinson highlighted two key risks for NERC: a new risk related to budget and an increased risk related to the international airbridge and replacement aircraft.
- 9.3 Gideon Henderson suggested a risk be added related to low staff morale.

## **10. Update by Chief Scientific Adviser, Defra (Oral)**

10.1 Gideon Henderson provided an update under the following headings:

- pre-election period and planning for a new Government
- UK Research & Development budget
- international
- engagement with Horizon Europe
- new Defra Non-Executive Directors: Julian Glover, Kate Rock, Nick Folland
- launch of Defra R&D fellowship scheme
- joint working with UKRI
- National Capability

## **11. Rolling programme of business) (NERC 24/16)**

11.1 Helen Page reminded Council members that suggestions for agenda items might be submitted to her at any point.

## **12. Any Other Business (Oral)**

12.1 David Hannah informed Council members that the next meeting of Science Committee would take place on 3 July. He outlined that some of the topics for discussion at the next meeting would include: Strategic Research Investments; NERC community composition; infrastructure pipeline; National Capability.

12.2 David Hannah reminded Council members that a recruitment campaign for four new members of Science Committee was underway and advised that interviews would take place in October. He expressed his thanks to Rashik Parmar, Karen Hanghøj and Tracy Shimmield who would take part in the interview panel.

**Annex:** NERC Council retreat visualisation



# NERC COUNCIL RETREAT 2024

## BUILDING a GREEN FUTURE

We can WORK ANYWHERE across the UKRI PORTFOLIO - we need to IDENTIFY where we will be most EFFECTIVE

How do we CAPITALISE on our EARTH VISION?

We are in the BUSINESS of COST AVOIDANCE by MITIGATING the EFFECTS of CLIMATE CHANGE.

## OUR ROLE in ADDRESSING CHALLENGES

It's about telling **KILLER STORIES**

- BUILDING RESILIENCE
- FOREWARNING GLOBAL RISK.
- DOING NECESSARY SCIENCE despite REPUTATIONAL RISK.

BE SAVVY about how we COMMUNICATE - some LOCAL STORIES RESONATE STRONGEST NATIONALLY - and INTERNATIONALLY!

SPENDING REVIEW -

We have to THINK BIG!



WE MUST COMMUNICATE with BOTH NUMBERS and STORIES!



Can we be the FUNDER of CHOICE for UK RESEARCHERS?



- BE BRAVE in our FUNDING DECISIONS!
- COLLABORATE with OTHER DEPARTMENTS.

- PIONEER DEVELOPMENTS in MONITORING and OBSERVATION.

## NATIONAL RISK in a GLOBAL CONTEXT

We need both TECHNICAL and SYSTEMIC SOLUTIONS & MITIGATE AGAINST RISKS

### DISRUPTIVE TECH

Can we use what we ALREADY HAVE in a DISRUPTIVE WAY? - LOOKING in OUR OWN BACK YARD

COMMUNICATING our VALUE

SECURITY - NEW CONFLICTS OVER BOTH EMERGING and TRADITIONAL RESOURCES.

We need BETTER RISK ASSESSMENT & FORECASTING CAPABILITY

There is NO MEASURE of the AGGREGATE RISK BURDEN & how this is INCREASING over time!

DISRUPTIVE TECH - PROCESSING DATA we ALREADY HAVE in a TIMELY WAY!

SECURITY - SCIENCE can act as a branch of DIPLOMACY

RECOGNISE and REWARD SCIENCE DIPLOMACY.

OTHERWISE we are just RUNNING AROUND putting out SMALL FIRES

SYSTEMIC RISK - INTEROPERABILITY of DATA & PEOPLE

FORWARD MODELLING - ARTICULATE CO-BENEFITS of ADDRESSING RISK

PRIDE - REFLECT the UK'S INTERNATIONAL STANDING back home.

WORKING better with DEVOLVED ADMINISTRATIONS

## LEADERSHIP

We have an OPPORTUNITY to STEER the DIRECTION of ENVIRONMENTAL RESEARCH & POLICY!

Are we ASKING the RIGHT QUESTIONS? - Is the DATA adequate?

WORKING with and UPSKILLING PARTNERS.

REQUIRES an INTERDISCIPLINARY APPROACH.

NON PROFITS SHARING RESOURCES.

FOCUS on CITIES

GROWING our TRANSLATIONAL ACTIVITY

BALANCE CHALLENGE-LED PROGRAMMES with DISCOVERY RESEARCH

Is there a BETTER WAY of BRINGING COLLABORATORS TOGETHER?

WHOLE EARTH SYSTEMS.

BALANCE + INFLUENCE TOP DOWN & BOTTOM UP APPROACHES.

## BOOSTING PROSPERITY

LOCAL DATA FEEDING into NATIONAL SYSTEMS - CITIZEN SCIENCE!

INCENTIVISE People to do the RIGHT THING

## SKILLS GAPS

NEED & UNDERSTAND TRIGGER POINTS

IDENTIFY what PEOPLE CARE about and BUILD stories around this...

## NEW MARKETS

SUSTAINABLE MINING and NATURAL HYDROGEN

IMPROVE IMAGE of the SECTOR & ATTRACT TALENT

## DOING MORE

CAN GOVERNMENT act more LIKE VENTURE CAPITAL, investing more in GREEN SOLUTIONS?

IMPROVED MODELLING - SCENARIO PLANNING.

USE DATA to INFORM MARKETS - REQUIRED METRICS and TARGETS.

INVEST in WORLD LEADING TESTING FACILITIES

GET BETTER at PARTNERING with INDUSTRY.

TAKE the LEAD in new AREAS of SPACE JUNK!

DOING RESEARCH at SCALE!