

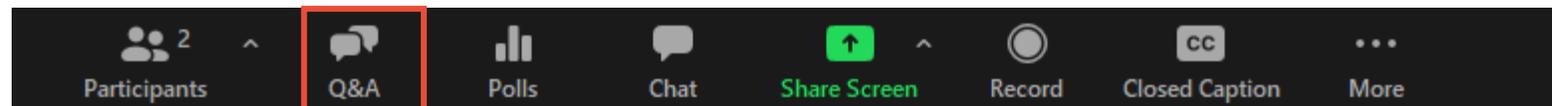


Natural  
Environment  
Research Council

# Highlight Topic Ideas Webinar

Welcome. We will be with you shortly.  
Please use the Q&A feature to post questions

6 April 2022



# With you today



Dr Jen Jennings  
Associate  
Directors,  
Discovery and  
Highlight Science,  
Talent and Skills



Vicki Durbridge  
Head of Discovery  
and Highlight  
Science, Talent and  
Skills



Dr Jess Lucia  
Programme  
Manager,  
Discovery and  
Highlight Science,  
Talent and Skills

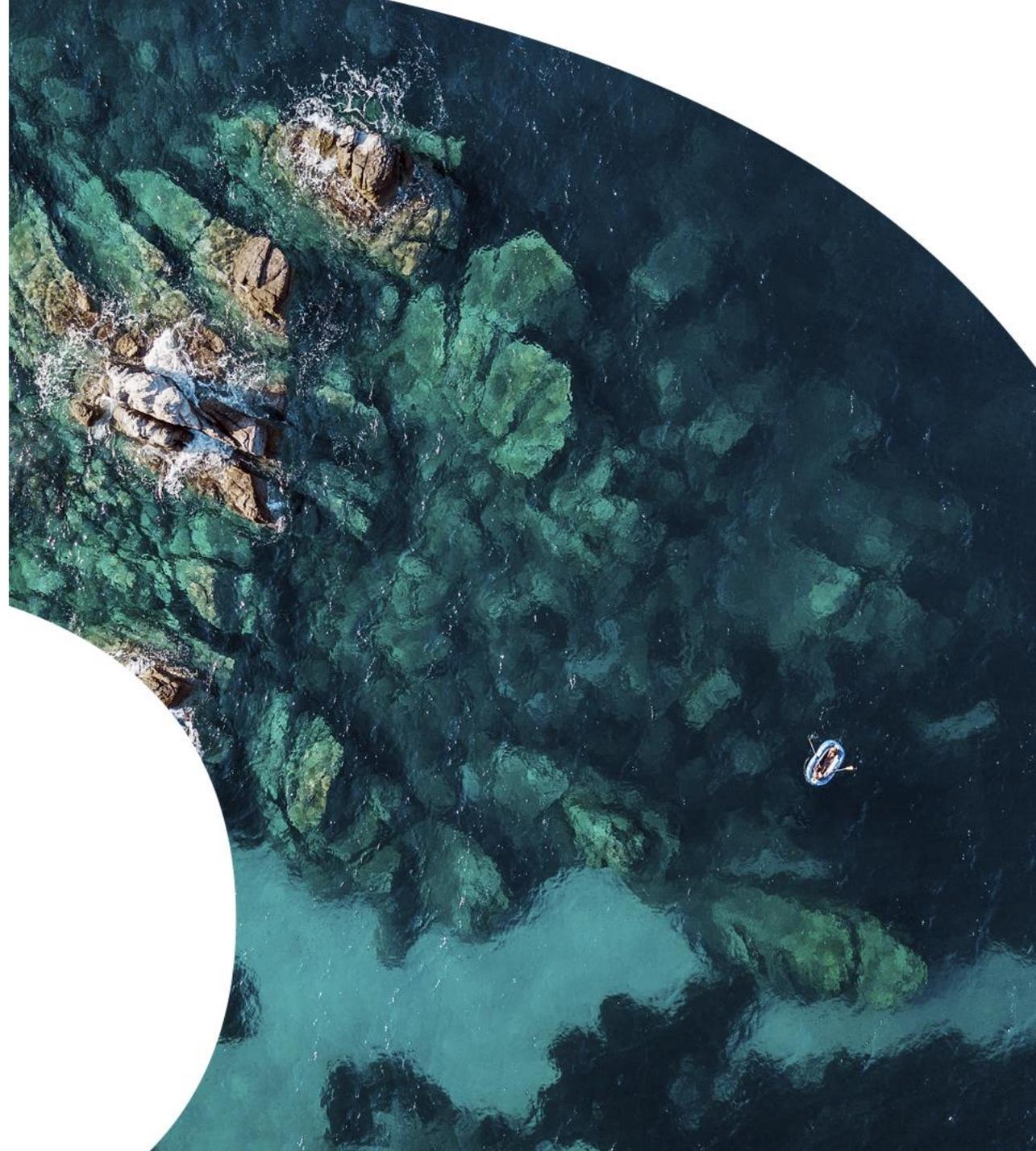


Professor Dan  
Parsons  
University of Hull  
NERC Science  
Committee  
member



Dr Kathryn  
Goodenough  
British Geological  
Survey

- 1 Introduction**
- 2 History**
- 3 Commissioning process**
- 4 Summary of rounds so far**
- 5 The Science Committee**
- 6 Investigator perspective**
- 7 The future**
- 8 Q&A**





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# Introduction



# UKRI Strategy 2022-2027

Our strategic objectives provide the framework for how we will achieve our vision and realise our principles through world-class:



Making the UK the most attractive destination for talented people and teams from the UK and around the world.

Advancing the frontiers of human knowledge and innovation by enabling the UK to seize opportunities from emerging research trends, multidisciplinary approaches and new concepts and markets.

Securing the UK's position as a globally leading research and innovation nation with outstanding institutions, infrastructures, sectors and clusters across the breadth of the country.

Delivering the government's vision for the UK as an innovation nation, through concerted action of Innovate UK and wider UKRI.

Making UKRI the most efficient, effective and agile organisation it can be.

# A new Delivery Plan ... in the process of refreshment



Environmental Solutions



Pushing the Frontiers of Understanding



Productive Environment



Healthy Environment



Resilient Environment



Digital Environment



Global Environment



Best Environment for Research and Innovation

- Launched 2019
- Designed to be a rolling document
- Refresh in train.

<https://nerc.ukri.org/about/perform/reporting/reports/>

# Delivery Plan Leads

## Environmental Solutions



Dr. Sophie Laurie & Dr. Shewly Choudhury  
Associate Directors, Interdisciplinary Programme Design & Management  
[sophielshewlyc.jbshr@nerc.ukri.org](mailto:sophielshewlyc.jbshr@nerc.ukri.org)

## Healthy Environment\*



Dr. Caroline Culshaw  
Head of Healthy Environment  
[caroline.culshaw@nerc.ukri.org](mailto:caroline.culshaw@nerc.ukri.org)

## Global Environment



Dr. Sarah Webb  
Associate Director, International  
[sarah.webb@nerc.ukri.org](mailto:sarah.webb@nerc.ukri.org)

## Pushing the Frontiers of Understanding



Dr. Jen Jennings  
Associate Director, Discovery and Highlight Science, Talent and Skills  
[jennifer.jennings@nerc.ukri.org](mailto:jennifer.jennings@nerc.ukri.org)

## Resilient Environment\*



Wendy Matcham  
Head of Resilient Environment  
[Wendy.matcham@nerc.ukri.org](mailto:Wendy.matcham@nerc.ukri.org)

## Best Environment for Research and Innovation



Dr. Sophie Hodgson  
Associate Director, National Capability  
[Sophie.hodgson@nerc.ukri.org](mailto:Sophie.hodgson@nerc.ukri.org)

## Productive Environment\*



Dr. Beth House  
Head of Productive Environment  
[Beth.house@nerc.ukri.org](mailto:Beth.house@nerc.ukri.org)

## Digital Environment



Dr. Anna Angus-Smyth  
Associate Director, Digital Environment, Infrastructure and Data  
[Anna.angus-symth@nerc.ukri.org](mailto:Anna.angus-symth@nerc.ukri.org)



Dr. Sarah Turner  
Associate Director, Strategic Programmes  
[Sarah.turner@nerc.ukri.org](mailto:Sarah.turner@nerc.ukri.org)

\* Overseen by Sarah Turner - Associate Director, Strategic Programme Delivery

# NERC Core budget 21/22

Discovery Science & Fellowships	53
Strategic Research & Innovation	66
Talent and Skills (TS)	35

**£154M**

Strategic Research and Innovation (SRI)  
24%

Discovery Science (DS)  
19%

Talent and Skills (TS)  
13%

Public Engagement (PE)  
0%

Enabling Change (EC)  
3%

NC Science (Single)  
5%

NC Science (Multiple)  
3%

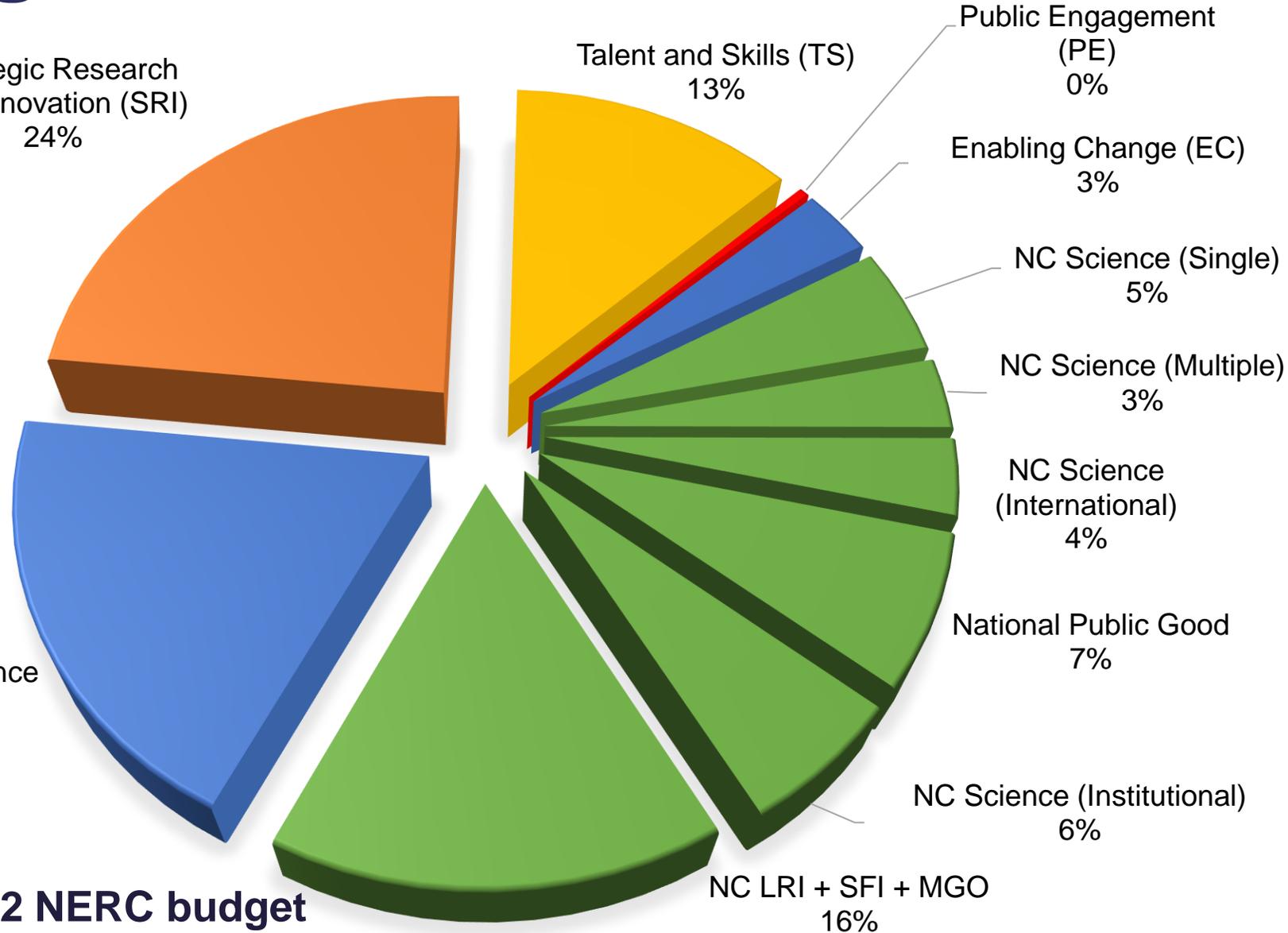
NC Science (International)  
4%

National Public Good  
7%

NC Science (Institutional)  
6%

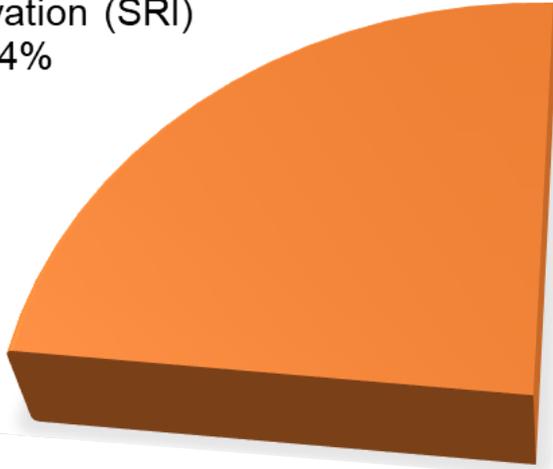
NC LRI + SFI + MGO  
16%

**Total FY 21/22 NERC budget  
£276.4m**



# Strategic Research and Innovation – core funds

Strategic Research  
and Innovation (SRI)  
24%



- **Highlight Topics: c.£16M annual call budget**
  - Focus strategic research on defined topic areas. Grants can be worth up to £4m and last up to four years.
- **Strategic Research and Innovation priorities**
  - Large scale complex programmes that take time to develop and deliver. Programmes typically range in size from £5m to £20m depending on their scope and partnership funding.
- **Partnership and Opportunities (P&O):**
  - Provides a timely response to opportunities for NERC to partner with other research funders. Programme size and scope will vary according to the opportunity.

# What is a Highlight Topic?

- Strategic research focused on a defined topic area
- ‘Bottom-up’ approach for community generated ideas
- Science Committee considers the ideas - taking account of current strategic research landscape, and recommends which NERC should pursue as topics
- When the topics have been decided, NERC publishes an open funding call for new HT research proposals



# What is a Highlight Topic?

- Number of topics published depends on available budget
- More topics are published than available funding will support, so not all topics may be funded
- Ensures effective competition and science excellence
- Grants awarded for up to 4 years and between £2.5 - 5m (100% FEC)



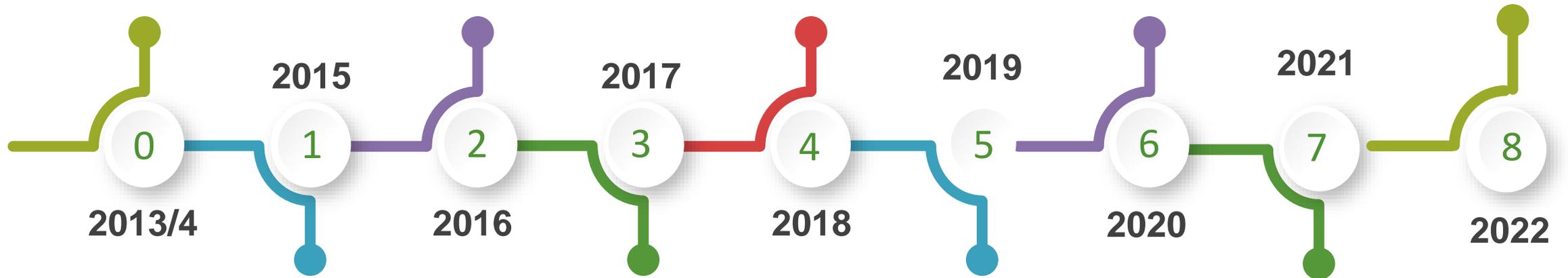


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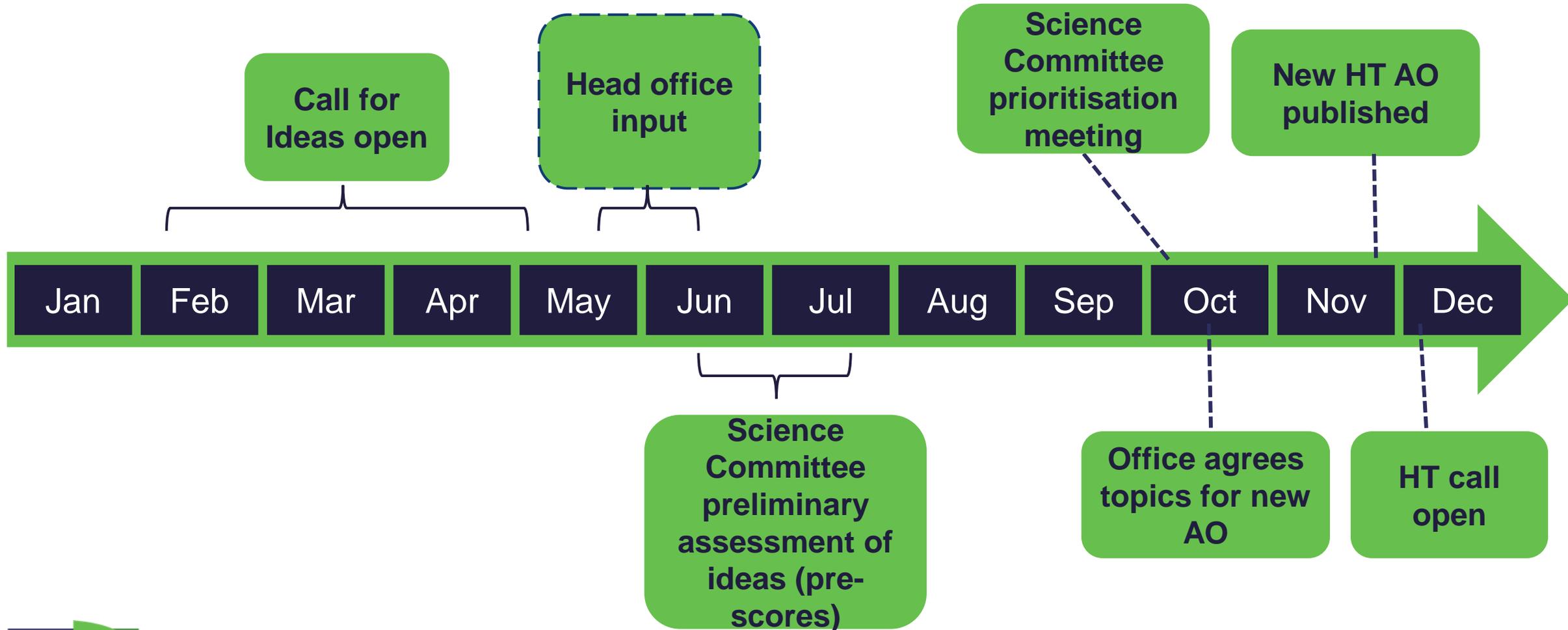
# Commissioning process



# Highlight topic funding rounds



# Annual timeline – Highlight Topic ideas



# Strategic Programme Delivery domains

## Healthy



R&I to reduce environmental degradation and to promote healthy life on Earth

## Resilient



R&I to increase understanding of environmental change and risks to improve mitigation strategies

## Productive



R&I to understand the interactions between the economy and environment, and enable a shift to a circular, resource-efficient economy

## Terrestrial, Freshwater, Earth



Disciplinary expertise and community knowledge to deliver excellent R&I

## Atmospheric & Polar



Disciplinary expertise and community knowledge to deliver excellent R&I

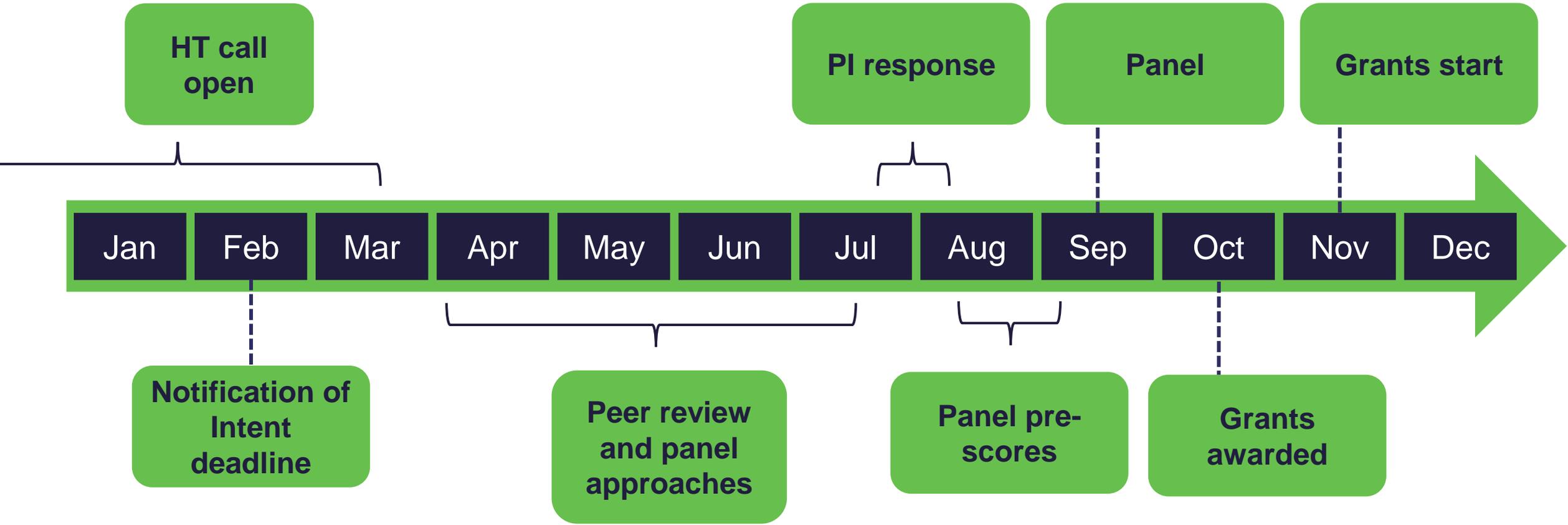
## Marine



Disciplinary expertise and community knowledge to deliver excellent R&I

**Invest in NERC's strategic research and innovation portfolio – approx. £100m core annual investment through several funding streams**

# Annual timeline – Highlight Topics funding call





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# Summary of rounds so far



# Ideas – summary 2014-2021

<b>Year</b>	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
<b>Round no.</b>	R1	R2	R3	R4	R5	R6	R7	R8
<b>Received</b>	155	58	19	76	35	60	39	56
<b>(No. topics)</b>	4	4	4	10	7	7	6	7

# Highlight topics – summary 2015-2021

Round/ year	Budget	Total awarded	Topics	Total proposals	Funded	Success rate (%)
	£M	£M*				
<b>1 2015</b>	12	12	4	29	8	29
<b>2 2016</b>	16	16	4	40	8	20
<b>3 2017</b>	9	12**	4	12	5	42
<b>4 2018</b>	24	25	10	67	14	21
<b>5 2019</b>	16	15	7	40	7	18
<b>6 2020</b>	16	17	7	42	8	19
<b>7 2021</b>	16	19***	6	25	9	36
<b>8 2022</b>	19	TBC	7	TBC	TBC	TBC
		<b>116</b>	<b>6 (avr.)</b>	<b>255</b>	<b>59</b>	<b>26 (avr.)</b>

\*rounded to the nearest million

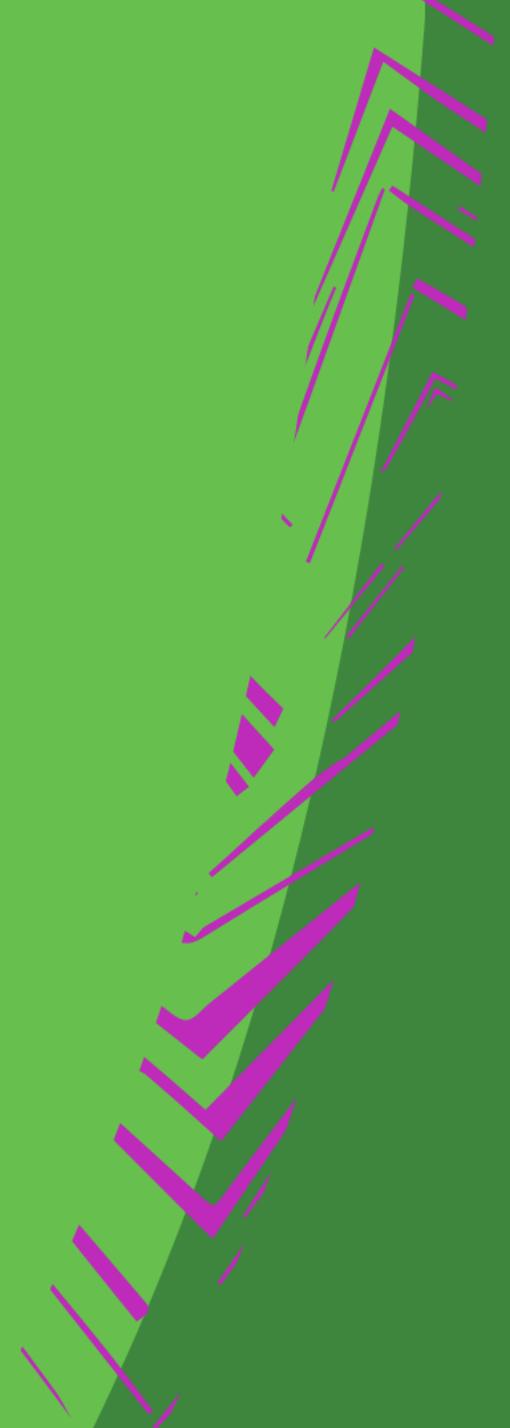
\*\*total awarded exceeds budget in Round 3, as more core funds were allocated to HTs

\*\*\*total awarded exceeds budget in Round 7, as uplift allocated from within SRI



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# The Science Committee





UNIVERSITY  
OF HULL

ENERGY AND  
ENVIRONMENT INSTITUTE

# NERC Highlight Topics Webinar

*- A view from the inside*

**Daniel R. Parsons**

D.Parsons@Hull.ac.uk

# The Criteria (and their order)

- Potential for scientific excellence
- Timeliness and urgency of research questions(s)
- Extent to which the topic is already being (or recent) funded
- How will contribute to the delivery of the long-term ambitions outlined in our Delivery Plan
- Potential for economic and/or societal impact
- Potential of the partnerships
- Readiness of UK research community and infrastructure

# Strategic or not Strategic

- "Strategic priorities" do not trump everything in HT
  - Scientific excellence is key.
  - Fit to delivery plan is much lower in priority
  - Needs to be important.... (minor tension)
  - Science Committee now ranks these and half of SC are not academics...
  - So, proposals that also have economic or societal impact do get fair hearing...
  - But, this is a minor impact and is largely incremental or at the edges.

# Now or Never.....

- Must be a feeling in SC that this must be done and must be done asap  
\*note the timeliness and urgency criteria
- Could be due to a social need but also....
  - Opportunity to seize international intellectual leadership
  - Opportunity that has been created by a new methodological advance
- Distinguishes HTs from Large Grants which are more like 'this is very cool science and it needs a critical mass to get done...'
- The urgency aspect is important for HTs.

# Wide or tight....

- Open enough that ideally a wide community of researchers could apply to the HT, but...
- Project Scope and Science advances should be clearly defined and tight enough to generate ~5 proposals as opposed to 25 proposals
- Too wide and the distinctiveness and urgency can be lost and it becomes challenging for excellence to stand out....

# Community Driven?

- SC look to see how the HT came about...
- Real evidence that this is community driven...
- Networks and groups working to common area are key
- The question in the proposal about how the idea was generated
  - Evidence of consultation and discussion
  - Not just a few people who have an idea....
  - ...but that there has been an enthusiastic and inclusive discussion.
  - Note - this is not necessary (especially if that creates an activation barrier that keeps people from submitting a HT), but it can swing the vote
- Project team diversity....
  - Is not an assessment criteria but increasingly taking note



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# Investigator perspective





KATHRYN GOODENOUGH

PI, LITHIUM FOR FUTURE TECHNOLOGY (LIFT)

# The Highlight Topic Process



British  
Geological  
Survey

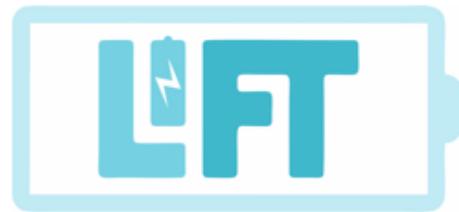
# 1: Proposing an idea

- Prepare in advance – involve the relevant community as much as possible, e.g. by holding workshops that can then be described in the relevant section of the form
- The idea should be really timely – we proposed “Understanding global lithium resources and cycles to enable a low carbon future” just as the shift to electric vehicles was beginning to dominate headlines
- Write the idea so it plays to the strengths of the team proposing it
- The idea needs to have a very clear focus and include some tractable research questions – other HT ideas I’ve been involved in have failed for being too broad
- There is a fine balance to strike – you are transferring ownership of the idea to NERC & other groups will also be able to put in proposals – so you need to provide enough info for your idea to be selected but still retain something for the proposal!

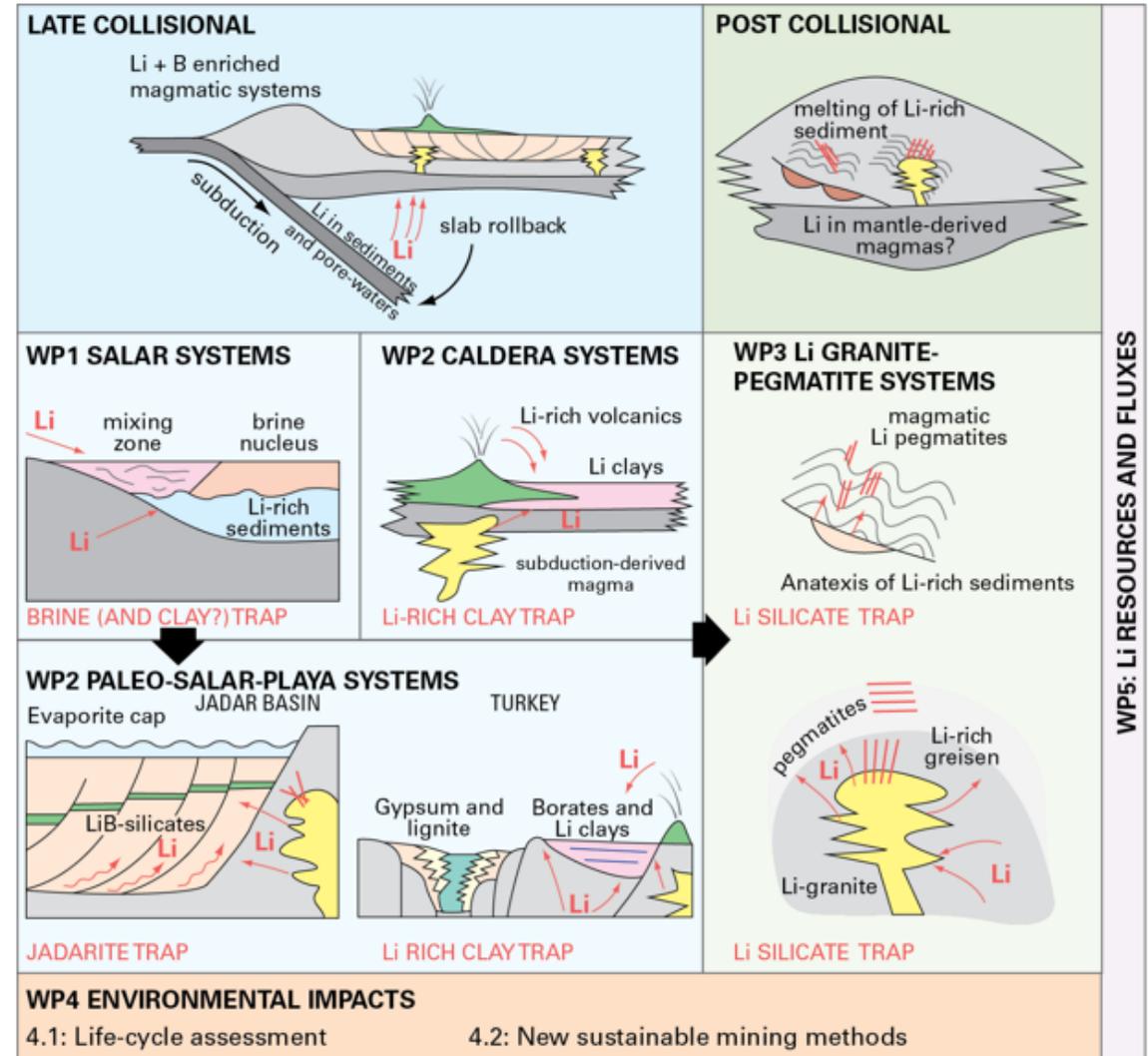
## 2: When your idea is selected

- If your idea is selected NERC will confirm by email – so you have a headstart
- I contacted all likely co-Is straight away, to ensure that we could put forward the strongest consortium
- NERC doesn't fund overlapping research – so if the idea was tightly focused, it's likely that only one proposal for that idea will be funded – and so there is potential for some competition between consortia
- If at all possible, best to collaborate not compete!
- Assessment is on research excellence & fit to scheme – ensure your proposal aims to answer all the questions raised in the original idea
- Strong project partners are really useful here, and clearly demonstrate the relevance of your topic

# 3: The Lithium for Future Technology project



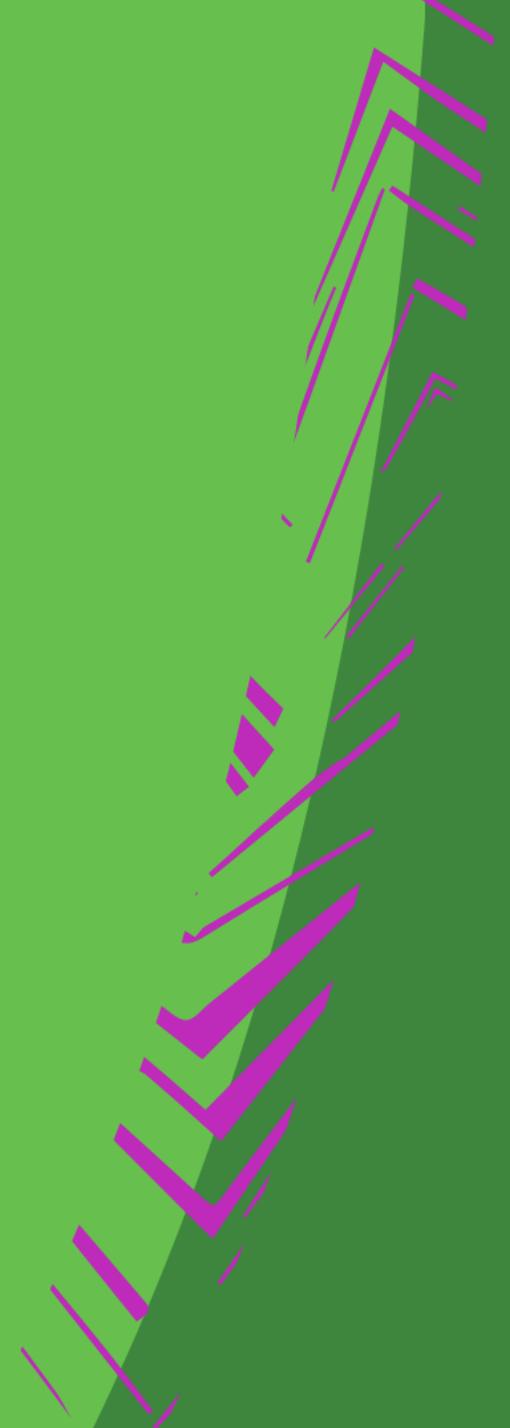
- Nov 2020 – Nov 2023; £2.5M
- 5 funded organisations: British Geological Survey, Natural History Museum, Universities of Exeter, Southampton and Edinburgh
- 16 PI/Co-Is, 7 researchers, international Project Partners and Advisory Board
- Timely: focusing on resources of Li for batteries in electric vehicles
- Investigating geological cycles of lithium through all mineralisation settings, from brines to volcano-sedimentary systems to granites and pegmatites
- Also investigating environmental impacts & sustainable extraction to develop a mineral system model





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# The future



# 2022 and beyond...

- Currently commissioning Highlight Topic Round 8 and the Ideas call for Round 9 is open
- Peer review challenges
  - Reviewers
  - Panel composition
- Web presence refresh
- Delivery plan ambition: monitoring and evaluation – developing an evaluation framework
- 10-year review in 2024/5?



Any queries, contact us:

[idea@nerc.ukri.org](mailto:idea@nerc.ukri.org)

[highlighttopics@nerc.ukri.org](mailto:highlighttopics@nerc.ukri.org)

# Big Ideas

- compelling, adventurous, and ambitious research needs with transformational potential in areas of strategic importance to NERC and our key stakeholders in business and policy
- on a much larger scale than can be achieved through a single research grant
- can come from any individual or group, and from any interested parties, including those who use environmental science, such as business, policymakers and non-governmental organisations



# What is a Big Idea?

We particularly encourage ideas that:

1. require multi-disciplinary approaches, or require new ways of collaborative working
2. promote the linking up of NERC investment with government and industry research priorities, and foster collaboration between researchers, policymakers and businesses
3. build research community capability in emerging technologies, research areas, and disciplinary interfaces





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# Thank you

[idea@nerc.ukri.org](mailto:idea@nerc.ukri.org)

[highlighttopics@nerc.ukri.org](mailto:highlighttopics@nerc.ukri.org)