

Faraday Battery Challenge - Round 6 Innovation Competition

Applicant briefing

Date: **17 May 2023**

The webinar will start at 10.00.

- We are currently on mute, whilst waiting for more people to join
- Please ensure that you are dialled in, either by computer or phone, so that you can hear the briefing.
- If you have any audio issues, please dial in from a fixed line.
- The briefing will be recorded and available for you

The UKRI logo consists of the letters 'UK' stacked above 'RI' in a white, bold, sans-serif font, set against a dark blue square background.

UK
RI

The Innovate UK logo features the text 'Innovate' above 'UK' in a white, sans-serif font, positioned to the right of a stylized purple graphic of three overlapping squares.

Innovate
UK

An aerial photograph of a large solar farm, showing rows of dark blue solar panels arranged in a grid pattern across a green field. The panels are tilted at an angle. A road or path runs horizontally through the middle of the field.

Welcome

Agenda

10.00 Welcome and Introductions, Nikoleta Piperidou, IUK KTN

10.10 Introduction to the Faraday Battery Challenge, Dr Matt Stock, IUK

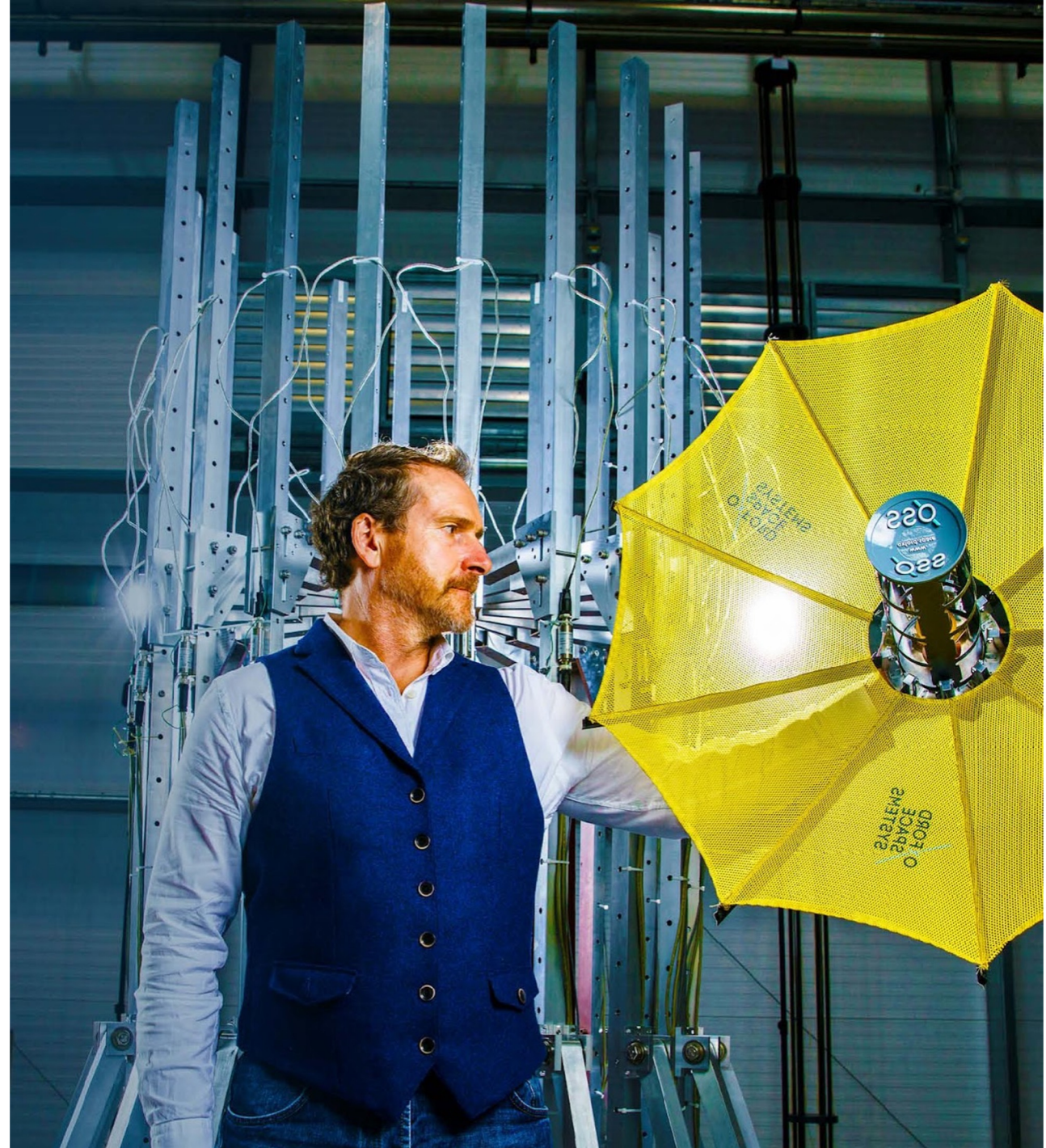
10:25 Competition Scope, Dr Jennifer Channell, IUK

10.45 How to apply, Kelly McGrath, IUK

11.10 Q&A

11.50 Top Tips for a Good Application

12.00 Close



Innovate UK KTN

www.ktn-uk.org





About Us

Innovate UK KTN exists to connect innovators with new partners and new opportunities beyond their existing thinking – accelerating ambitious ideas into real-world solutions.



Cross-Sector Battery Systems Innovation Network: ukbatteriesnetwork.org

The screenshot shows the homepage of the UK Batteries Network. At the top left is the UKRI KTN logo with the tagline 'Charging the battery revolution network'. A navigation menu includes 'About', 'Cross Sectoral Opportunities', 'News', 'Events', 'Reports', 'Networking Hub', and 'Battery Systems Landscape Map'. The main content area features a large image of a group of people in a meeting. Below this is a purple banner with the text 'Welcome to the UK Batteries Network' and a registration prompt: 'Register to join a growing, open and collaborative community - the Cross-Sector Battery Systems Innovation Network'. A box lists benefits of signing up, such as receiving a newsletter and accessing the networking hub. At the bottom, there is a red banner with the text 'Ready to get started? Enter the Networking hub' and a 'Dashboard' button. A footer section contains three cards: 'About', 'Battery Targets to 2035' Discussion Document', and 'Podcast Series: The Battery Caffè'.

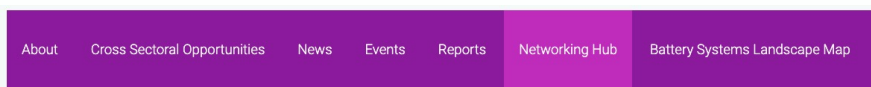
- **Stay informed:** Sign up to our newsletter for news, insights, funding opportunities and future sessions
- **Connect:** Register to the platform and share your challenges and solutions with other members in the networking hub
- **Showcase your capabilities:** Explore our landscape map and add your organisation

Find your partners – networking hub



Charging the battery revolution network

Networking Hub



How it works

The networking hub platform is designed to share real world challenges, match suppliers and develop an eco system to breed innovation.

Simply navigate in the different sections and request to connect.

- 1 Create posts about your battery related challenges or solutions
- 2 View battery-related solutions and challenges that other members have posted
- 3 Start networking by clicking on 'Send an introduction request' at the bottom of each post
- 4 Check your [dashboard](#) to manage and engage with your new connections

Looking for a partner to collaborate on various projects

We are an early stage-how startup with Technology know-how of advanced high energy density electrodes for Li-ion and Na-ion batteries. Looking for a partner who has full facility Electrochemistry lab.

[Read more](#)

Looking for partners to develop a full concept test on Lead-Acid or Nickel-iron batteries project

A UK based SME, who previously developed a prototype in light-weight Lead acid batteries using titanium fibres, is now looking for partners to develop a full concept test.

[Read more](#)

Seeking a Partner for the Faraday Battery Challenge

Alp Technologies is a renewable energy engineering start-up based in London focusing on developing renewable energy technologies for low-income countries. Our key innovation is M-BRIC, an energy storage system that can utilise end-of-life Li-ion battery cells and uses predictive maintenance and AI to improve system performance and detect possible faults. We are seeking to partner with an academic institution to apply for the Faraday Battery Challenge.

[Read more](#)



Surgeries



Please join us on **Wednesday 31st May** or **Wednesday 7th June** for a 'Surgery and Consortia Building' webinar.

These surgeries are an opportunity for you to understand more about the Round 6 Faraday Battery Challenge Competition.

Applicants will be able to ask questions to the Innovate UK Faraday Battery Challenge team relating to scope, use case and eligibility around the competition. Please note that this session **will not** cover the Competition Process.

The Q&A session will be followed by networking as well as an opportunity to meet with the FBC team for 1:1 meetings.

Thank you!

Nikoleta Piperidou
KTM – Energy & Infrastructure
nikoleta.piperidou@iuk.ktn-uk.org





Round 6 Briefing

17th May 2023



UK Research
and Innovation



The Faraday Battery Challenge Team



Tony Harper
Director



Claire Spooner
Deputy Director



Dr Thomas Bartlett
Deputy Director



Dr Jennifer Channell
Innovation Lead - Batteries



Oyebola Bello
Programme Manager -
Batteries



Sirisha Mulagala
Programme Manager



Robert Peckham
Impact and Performance
Manager



Amanda Cox
Portfolio Support Analyst



Matt Silver
Innovation Lead – Investors
& International

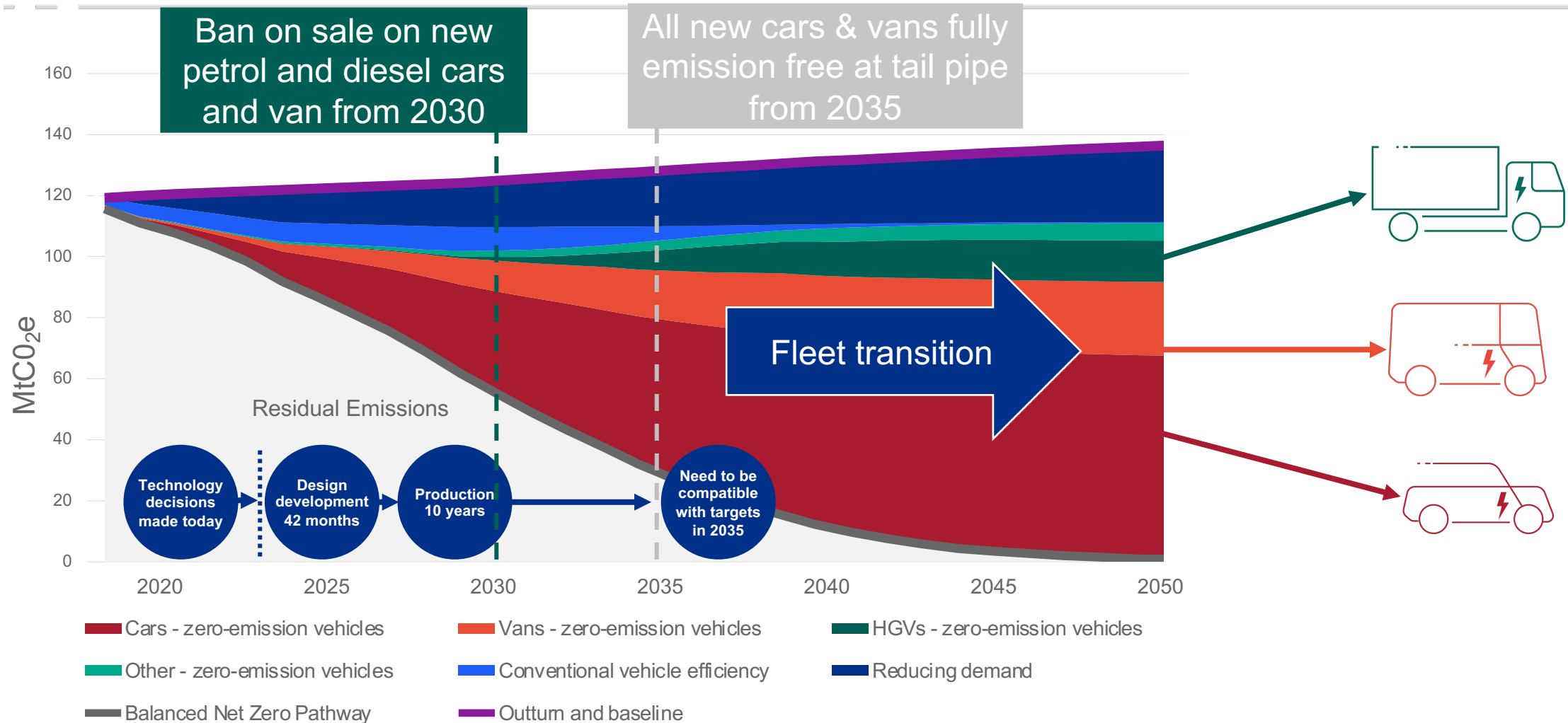


Dr Diogo Vieira Carvalho
Innovation Lead - Batteries



Dr Matt Stock
Head of Battery Technology

Batteries enabling the pathway to net zero



Source: BEIS (2020) Provisional UK greenhouse gas emissions national statistics 2019. CCC analysis

Why the Faraday Battery Challenge?



1

NET
ZERO

To ensure the UK automotive industry meets its net zero commitments in the required timescale by enabling development and scale-up of sustainable battery technologies.

2



To prosper from a just and fair transition to battery electrification across the nation through the development of a world class intellectual and physical supply chain.

Faraday Battery Challenge



Faraday Battery Challenge Programme



Discover



Develop



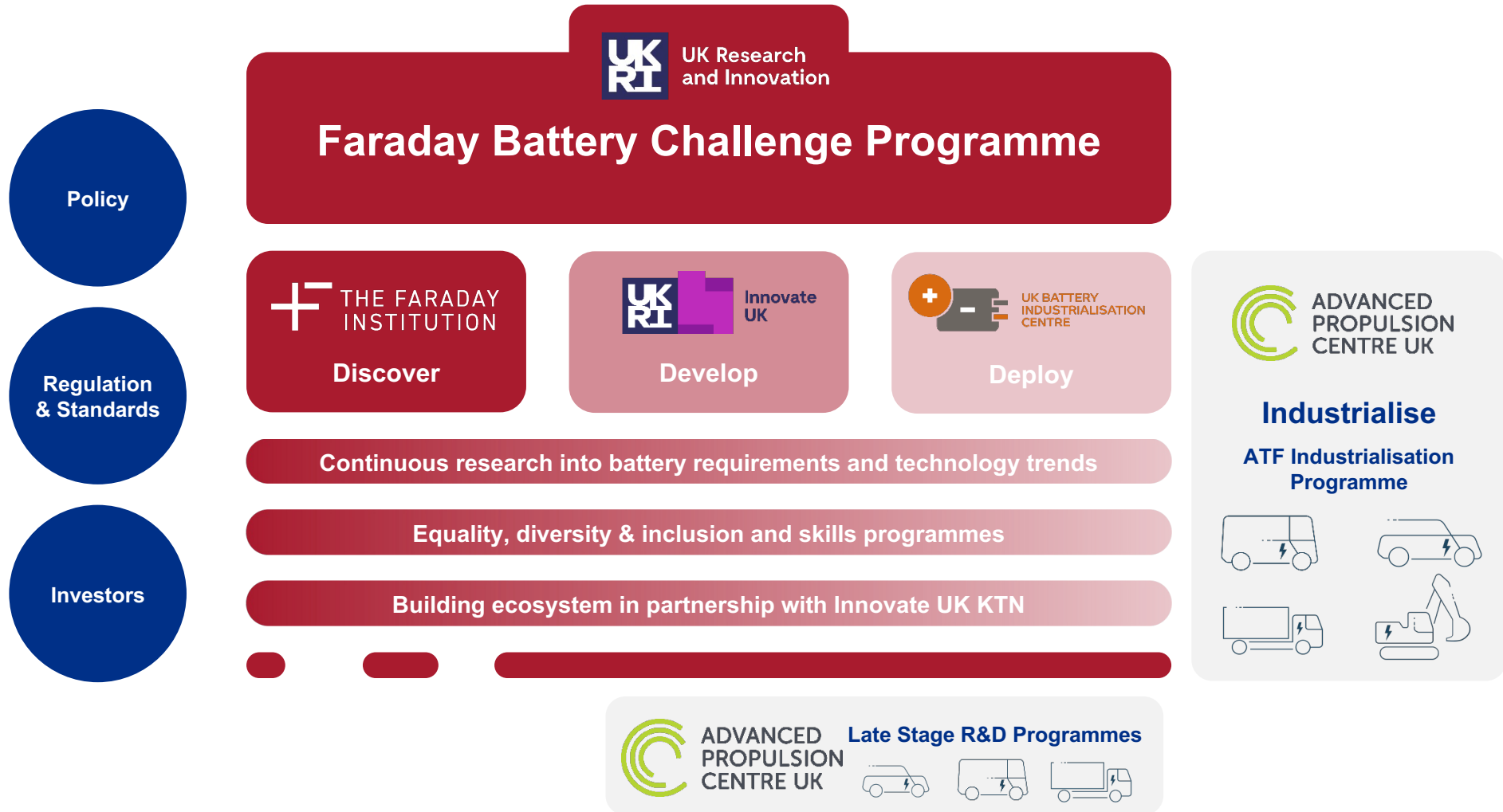
Deploy

Continuous research into battery requirements and technology trends

Equality, diversity & inclusion and skills programmes

Building ecosystem in partnership with Innovate UK KTN

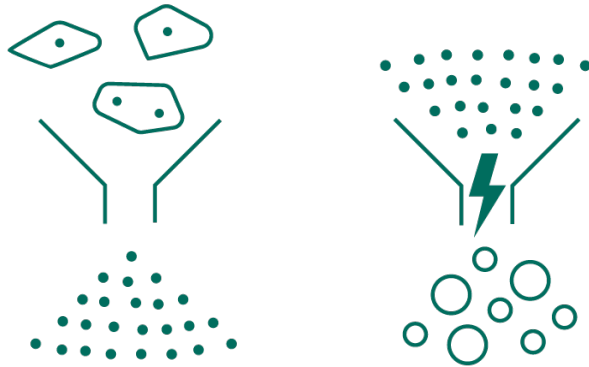
...as part of a wider ecosystem



Infrastructure support



1) Flexible Industrialisation Line (FIL) upgrade at UKBIC



2) Cell materials scale-up capital infrastructure support

3) Grant to subsidise SME's to access UKBIC



Auto Council Priorities to achieve 2030/35



1. Support OEM platform transition activities



2. Embed the EV supply chain in the UK

3. Reduce the cost



and improve the performance of EV through continuous R&D and technology innovation

4. Innovate to drive toward Net Zero through the value chain and through life



Automotive Council 6 Big Plays



1

Secure a Ni-rich supply chain

2

>350Wh/kg at pack level

3

High performance, modest volume

4

Low cost, good enough

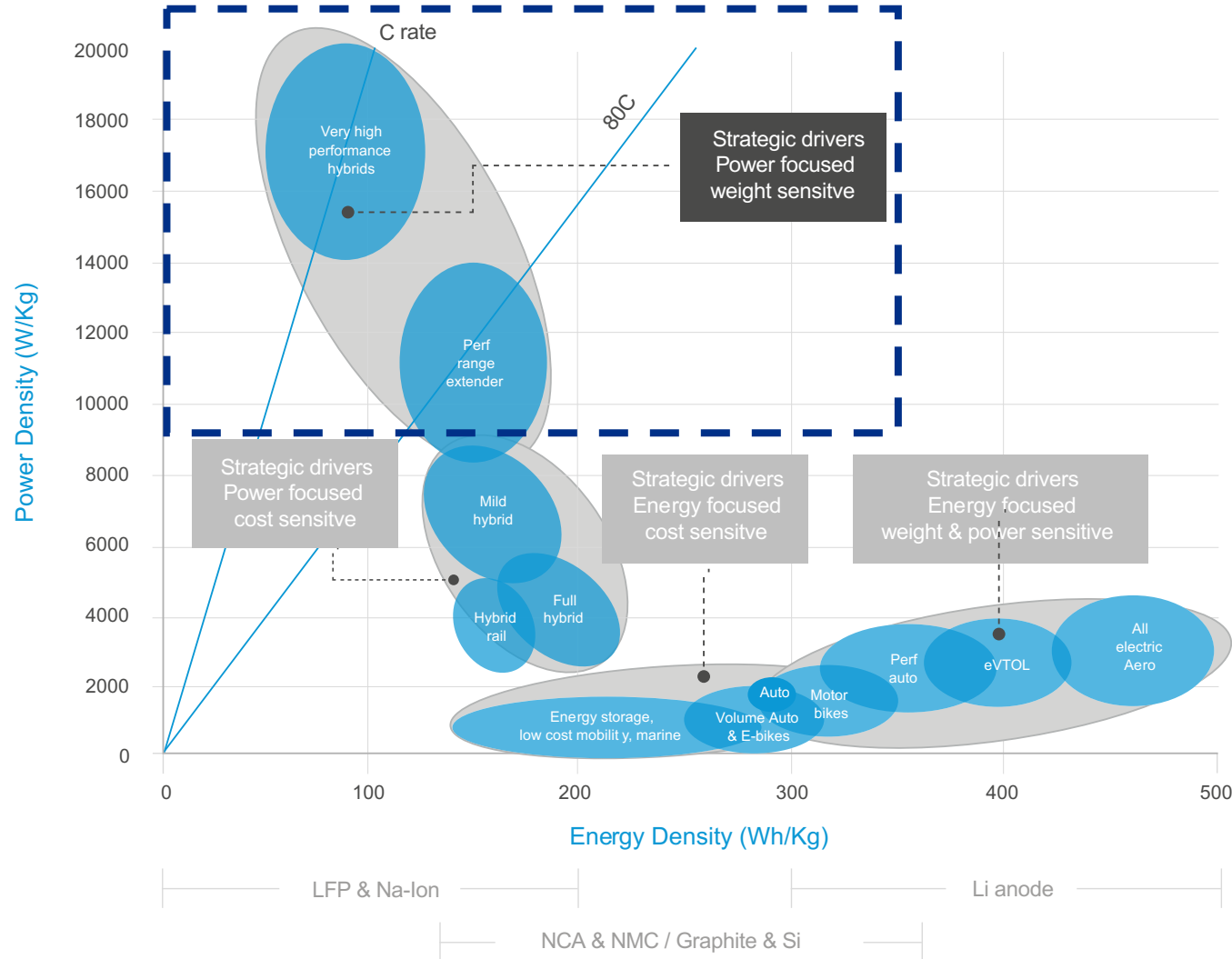
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Sustainable battery sector

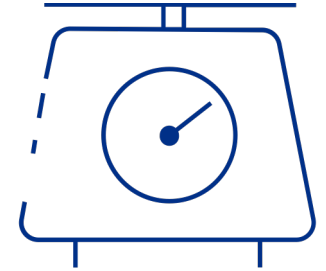
6

Digitalisation

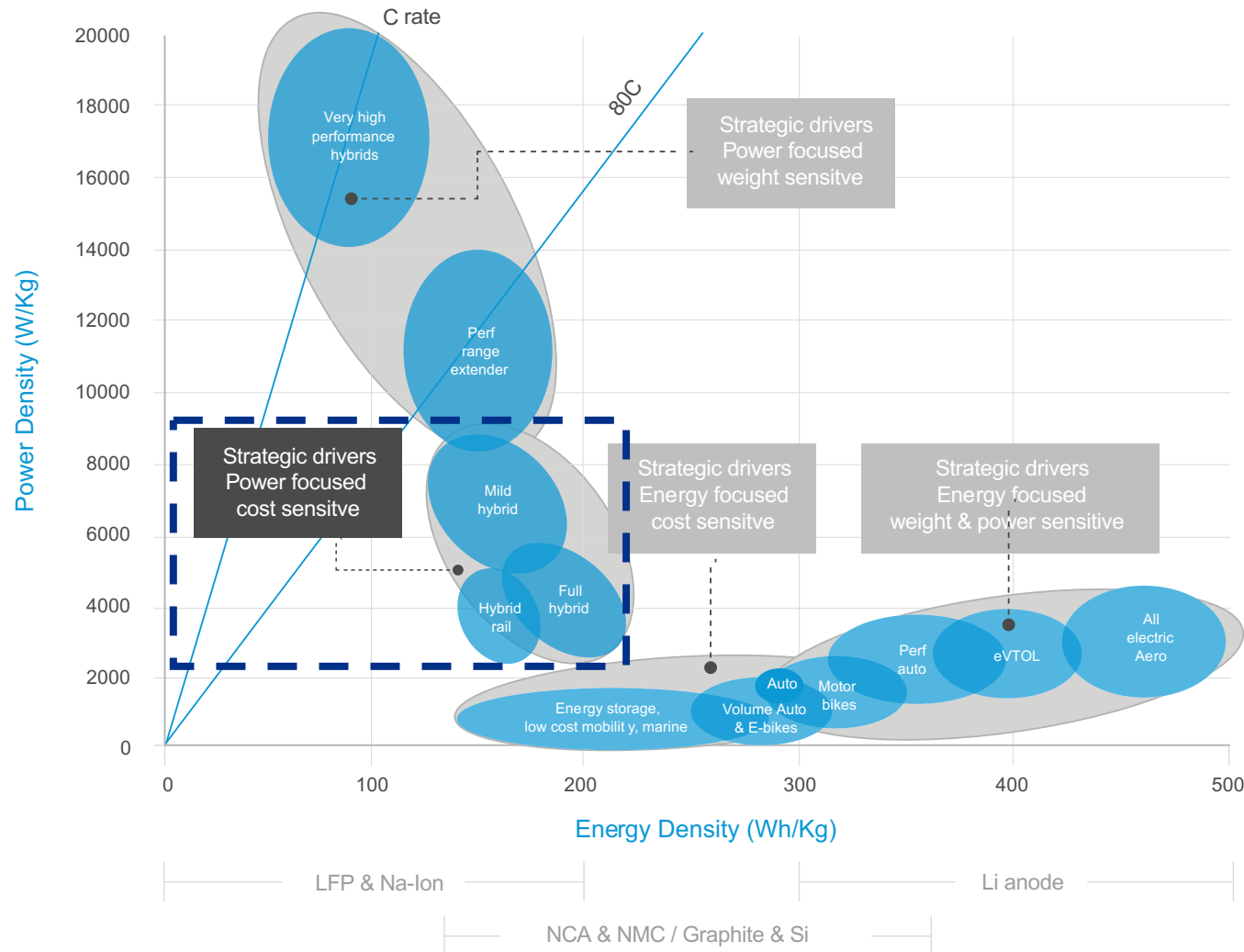
Cross-sector batteries



Power focused but weight sensitive:
cost and volumetric energy density will still be factors



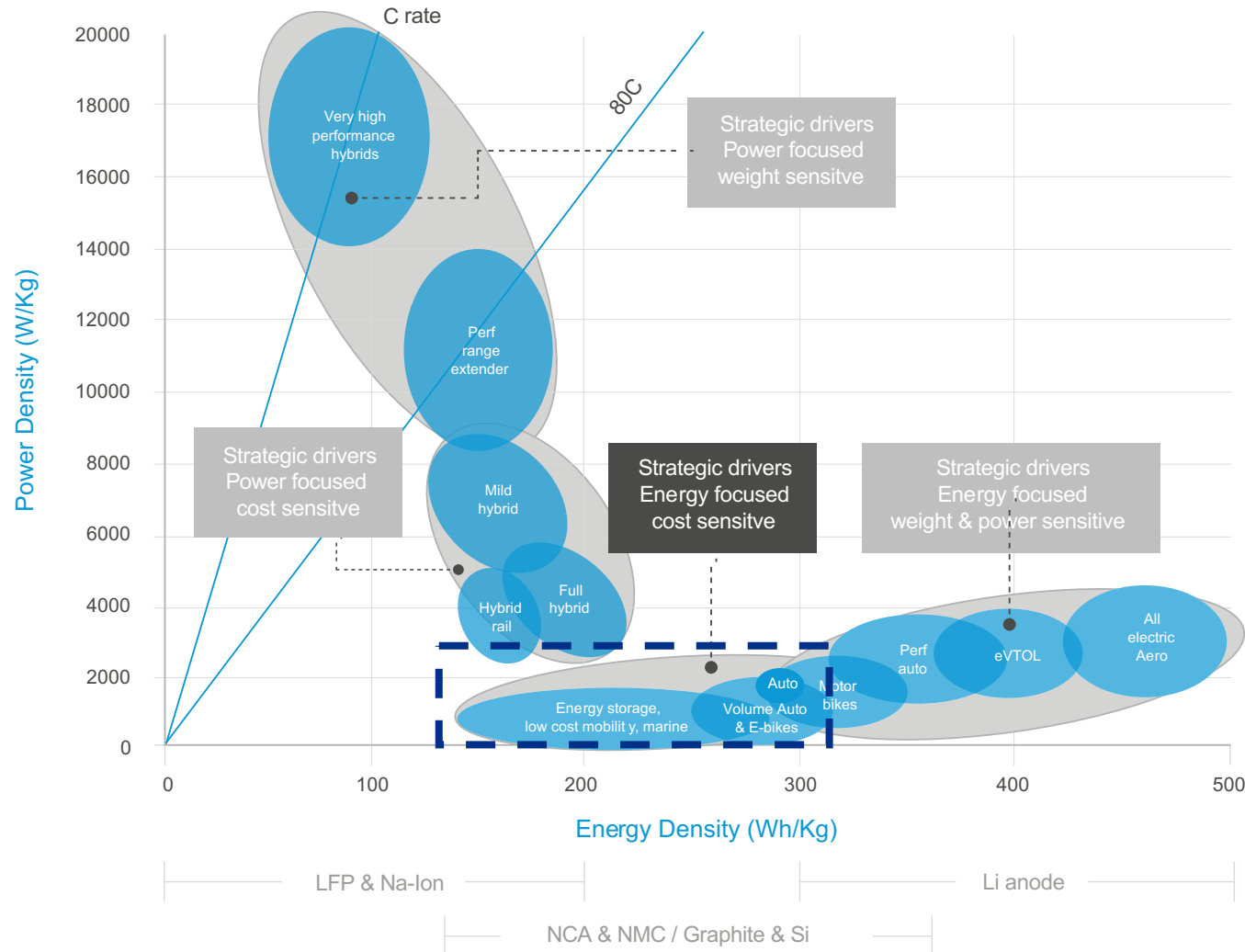
Cross-sector batteries



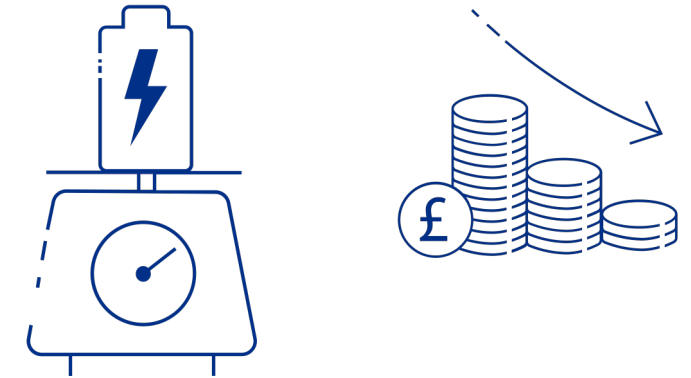
Power focused but cost sensitive:
support volume hybridisation of powertrains



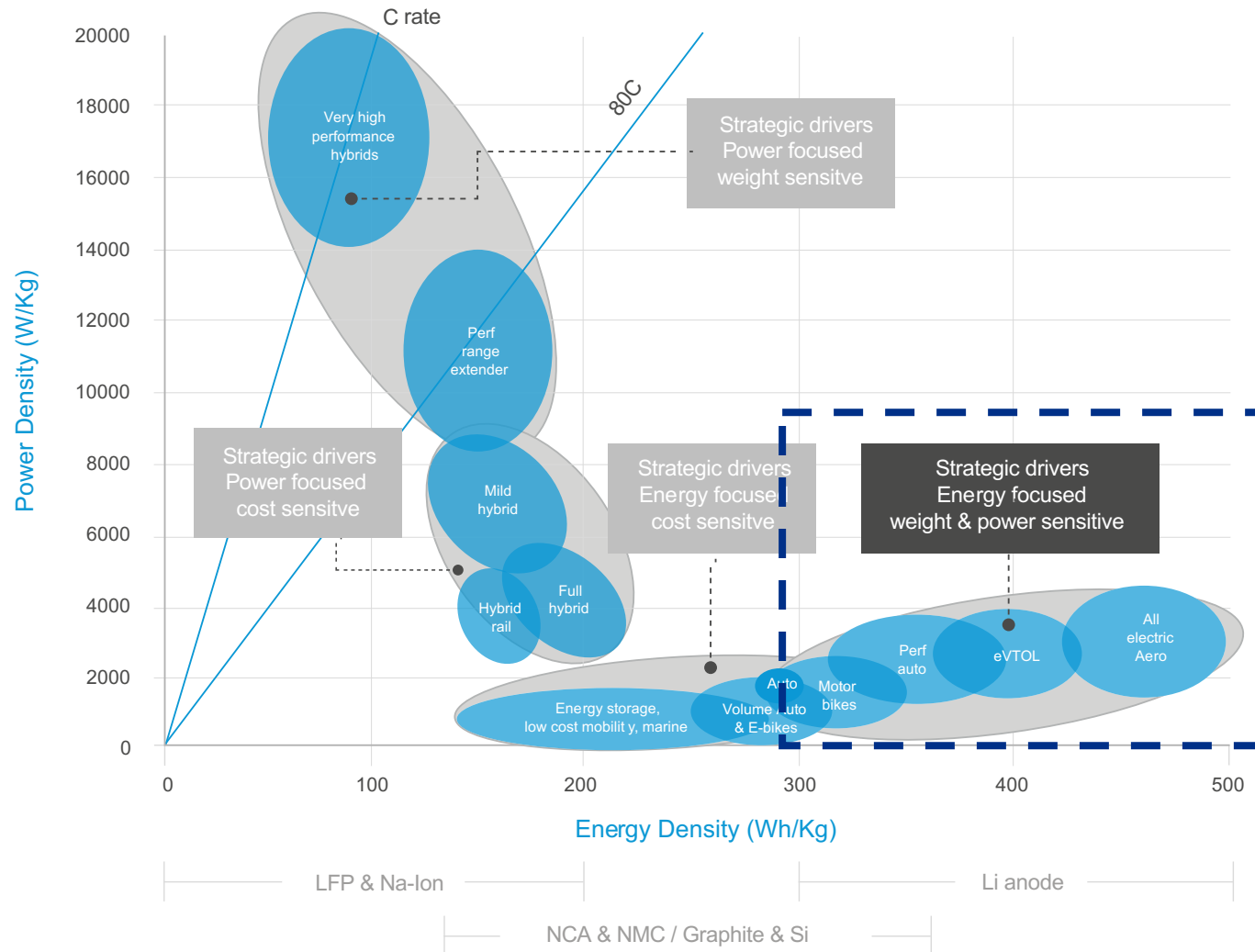
Cross-sector batteries



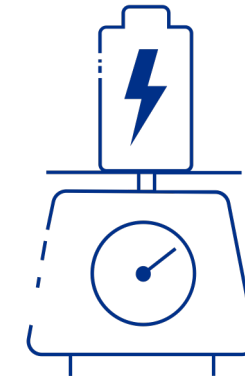
Energy focused but cost sensitive: applications which may be willing to trade attributes e.g. lower volumetric energy density to achieve cost targets



Cross-sector batteries



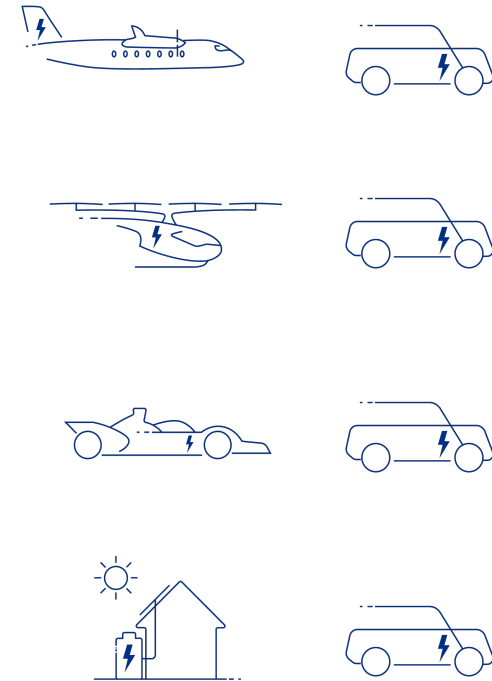
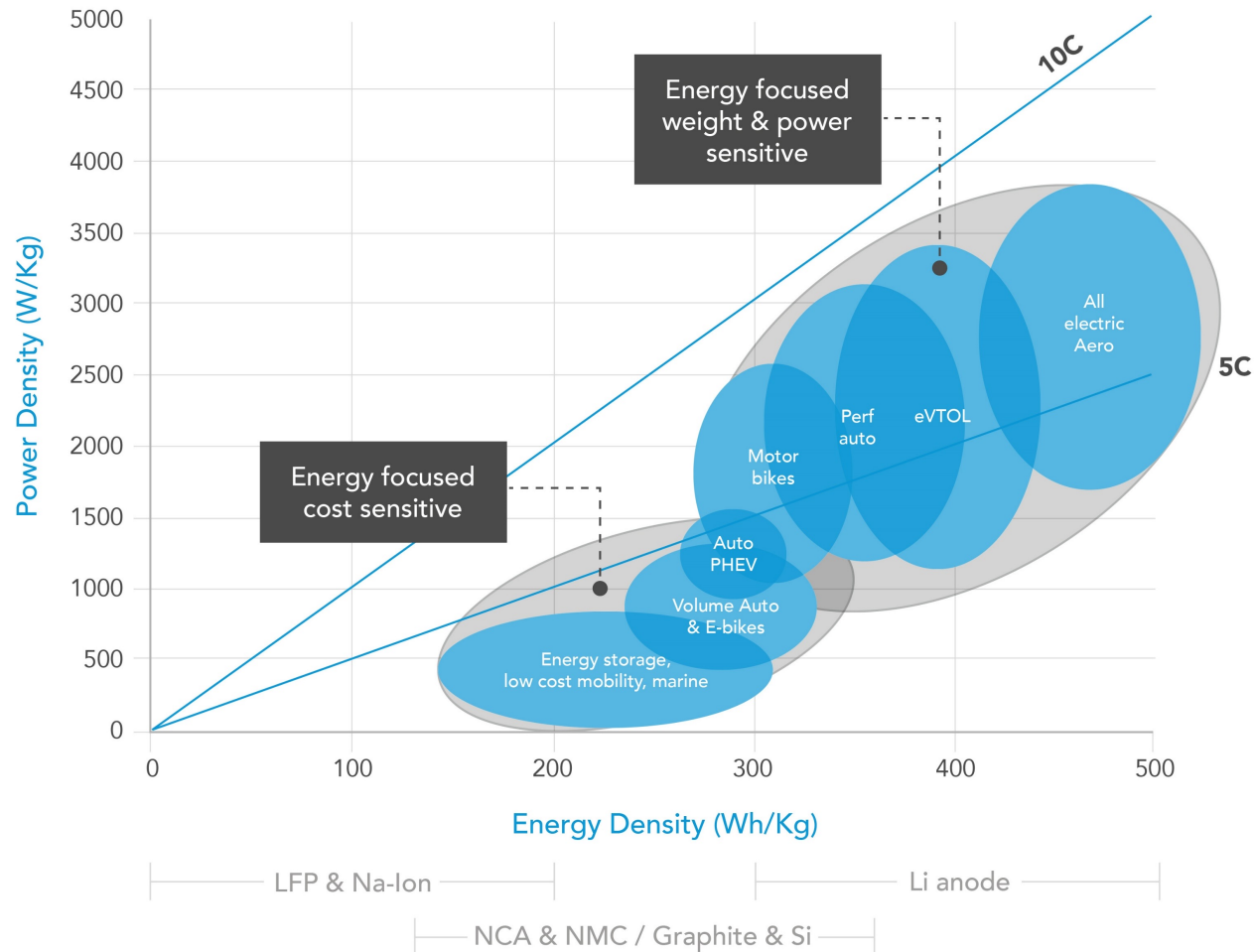
Energy focused but weight and power sensitive: energy hungry but still need power at a weight limit



Cross-sector opportunity



Greater collaboration between transport sectors could help pull-through next generation battery technology





Faraday Battery Challenge Round 6 Innovation

Dr Jennifer Channell
Innovation Lead – Batteries
faradaybatterychallenge@iuk.ukri.org

17th May 2023



Faraday Battery Challenge Round 6 Innovation



Up to £10 million available across 2 strands:

Strand	Research Category	RO Participation	Total project costs	Duration	Project completion date
Feasibility study	Feasibility study	Up to 50%	£100k - £750k	Up to 12 months	By 31 st Oct 2024
CR&D	Industrial Research	Up to 30%	£300k - £2.5m	Up to 15 months	By 31 st Jan 2025

With the aims to:

- accelerate development and commercialisation of state-of-the-art battery technologies in the UK
- support growth of the supply chain and companies in the UK battery sector
- increase UK competitiveness in the global battery industry
- demonstrate ability of battery technologies to meet the needs of specific applications

Competition open date: 16th May 2023

Close date: **11am 12th July 2023**

Feasibility Studies



Strand	Research Category	Grant available	Total project costs	Duration	Project completion date
Feasibility study	Feasibility study	~£2.5m	£100k - £750k	Up to 12 months	By 31 st Oct 2024

For Feasibility Studies we encourage applications that:

- trial advanced and very novel battery technologies for the first time
- exploit scientific advances from the Faraday Institution and wider research base
- trial novel approaches, tools and methods
- support trial and adaptation of existing materials, processes or equipment for application in battery technologies or the battery supply chain

Where this could have a transformational effect for example on cost, performance or sustainability



Strand	Research Category	Grant available	Total project costs	Duration	Project completion date
CR&D	Industrial Research	~£7.5m	£300k - £2.5m	Up to 15 months	By 31 st Jan 2025

For CR&D we encourage applications that:

- support development and qualification of battery technology supply chains in the UK
- prove technology for specific applications
- prove cell material and component performance at module and pack level

Scope



Your project must focus on one or more areas of the battery value chain:

- raw materials
- cell materials and cell components
- modules, packs, battery management systems and their components
- recycling and second life

Projects must balance specific technical, market, and business requirements for developing and emerging technologies, and enable UK competitiveness across the battery value chain.



Scope



We are particularly interested in funding projects that will enable:

- a competitive and sustainable nickel-rich UK battery supply chain
- high performance, high-value, modest volume applications where UK has established and emerging strength
- low cost, appropriate energy density solutions, at pack level, for applications requiring lower performance and low cost
- greater than 350Wh/kg energy density at pack level
- improved fast charge capability for specific applications
- high cycle life and reduction of battery degradation
- battery safety to enable higher performance
- total end to end life cycle sustainability, including reduction of energy consumption and carbon emissions, across the battery supply chain and throughout battery life
- increased equipment manufacturing capability for state of the art batteries within the UK
- enhanced digital capability across the battery value chain, for example big data and AI for materials discovery, design optimisation and performance verification and digitisation of the end to end bill of process or of provenance and state

Targets



You must demonstrate how your technology will address at least one of the following battery performance metrics:

- reduce cost at the cell and pack level, as well as minimising manufacturing costs
- increase energy density (Wh/kg) at cell and pack level
- increase power density (W/kg) at cell and pack level
- increase safety by reducing or eliminating thermal runaway risk
- increase first life by lengthening cell and pack life
- broaden the temperature ranges that a pack efficiently operates at
- increase predictability by developing ways to better predict range and battery health
- increase recyclability by designing for end-of-life or reuse and improving recycling techniques
- increase sustainability by reducing carbon emissions, energy consumption and improving resource efficiency

Application areas



Our first priority for funding will be projects targeting performance requirements for automotive applications. This includes:

- on and off-highway vehicles
- medium and heavy goods vehicles
- passenger cars and vans
- buses
- motorsport
- e-motorcycles

Our second priority for funding will be projects:

- targeting applications with performance requirements that are related to automotive performance requirements
- developing breakthrough technologies that have the potential for widespread sectoral adoption

You must clearly demonstrate your understanding of the performance synergies and route to market in your application.

Environmental compliance



Please note, your project activities may require one of the following:

- an Environmental Permit (England and Wales)
- an Integrated Pollution Prevention and Control (Scotland and Northern Ireland) Permit
- a Waste Management Licence (Scotland and Northern Ireland)
- compliance with the Waste Battery and Accumulator Regulations (UK)

Further information can be found at the links in the “scope” tab.

Innovate UK reserves the right to share information regarding your grant application with the Environment Agency or Scottish Environment Protection Agency or Natural Resources Wales or Northern Ireland Environment Agency to ensure appropriate environmental compliance in conducting project activities.

Out of scope



We are not funding projects that are:

- research projects or projects which are academic intensive
- business as usual R&D projects
- non-collaborative projects
- projects with over reliance on subcontracting
- aiming to secure funding for capital equipment as a primary focus
- not demonstrating considerations of the cost, market and business requirements of the technology
- focussed on off-vehicle charging
- focussing on physical system integration of battery technologies for example into vehicles or energy storage systems

Support



For help applying contact the Innovate UK Customer Service Desk: support@iuk.ukri.org or 0300 321 4357

For support and advice on applications contact the Innovate UK Knowledge Transfer Network:

- Highly recommended that you use their service, especially if you are new to Innovate UK competitions
- Nikoleta Piperidou - Knowledge Transfer Manager for Infrastructure & Energy: Nikoleta.Piperidou@iuk.ktn-uk.org

For scope queries contact the Faraday Battery Challenge:

- Faraday Battery Challenge inbox: faradaybatterychallenge@iuk.ukri.org
- Dr Diogo Vieira Carvalho and Dr Jennifer Channell: Innovation Leads - Batteries
- Oyebola Bello: Programme Manager - Batteries

We will be running two competition surgeries to answer your questions:

- Surgery 1: 9:30-11am (GMT) 31st May 2023
- Surgery 2: 10-11:30am (GMT) 7th June 2023

<https://web-eur.cvent.com/event/8d9f482d-cdc1-4ef7-8161-f351fc1fb7cd/summary>



Thank you

Jennifer Channell

faradaybatterychallenge@iuk.ukri.org



Welcome and Introductions

Kelly McGrath

Portfolio Manager

- The briefing will be recorded and available to refer to through the IFS date page
- PDFs of the presentation will also be available on request
- For more information on the competition process, please go to: [Competition briefing: applicant information - YouTube](#)



Innovate UK

- We are the UK's innovation agency
- We support business-led innovation in all sectors, technologies and UK regions
- A key delivery body of the Government's Innovation Strategy

Our Mission

To help UK businesses grow through the development and commercialisation of new products, processes, and services, supported by an outstanding innovation ecosystem that is agile, inclusive, and easy to navigate.



UK ranks 4th in Global Innovation Index



- Innovation accounts for up to 50% of labour productivity growth
- Firms that persistently invest in R&D have higher productivity
- Innovating companies are more likely to export and generate growth

Eligibility criteria



Eligibility criteria: Feasibility Studies

Project eligibility	<ul style="list-style-type: none">• lead must be a UK registered business of any size• must be collaborative• involve at least one UK SME• start on 1st November 2023• end by 31st October 2024• must carry out your project in the UK• exploit the results from or in the UK
Total project costs	between £100,000 and £750,000
Project length	Between 3 and 12 months

Eligibility criteria: CR&D

Project eligibility	<ul style="list-style-type: none">• lead must be a UK registered business of any size• must be collaborative• involve at least one UK SME• start on 1st November 2023• end by 31st January 2025• must carry out your project in the UK• exploit the results from or in the UK
Total project costs	between £300,000 and £2.5 million
Project length	between 6 and 15 months

Funding

Funding rules

The level of funding awarded will depend upon the type of organisation and the type of research being undertaken in the project

Funding is calculated by project participant

IFS will advise the maximum grant % you can request based upon your answers to:

- type and size of organisation
- research category defined by the lead applicant in the Application Details section of the application



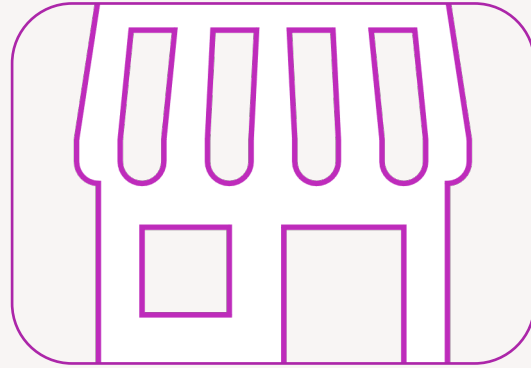
Eligibility Criteria: Feasibility Funding Levels

Feasibility studies	CR&D: Industrial research
70% if you are a micro or small organisation	70% if you are a micro or small organisation
60% if you are a medium-sized organisation	60% if you are a medium-sized organisation
50% if you are a large organisation	50% if you are a large organisation
<p>Research organisations can share up to 50% of the total eligible costs. Of that 50% you can get funding for your eligible projects costs of up to:</p> <p>80% if you are a Je-S registered institution, such as an academic</p> <p>100% if you are an RTO, charity, not for profit, public sector or research organisation</p>	<p>Research organisations can share up to 30% of the total eligible costs. Of that 30% you can get funding for your eligible projects costs of up to:</p> <p>80% if you are a Je-S registered institution, such as an academic</p> <p>100% if you are an RTO, charity, not for profit, public sector or research organisation.</p>

Your Project Cost Categories



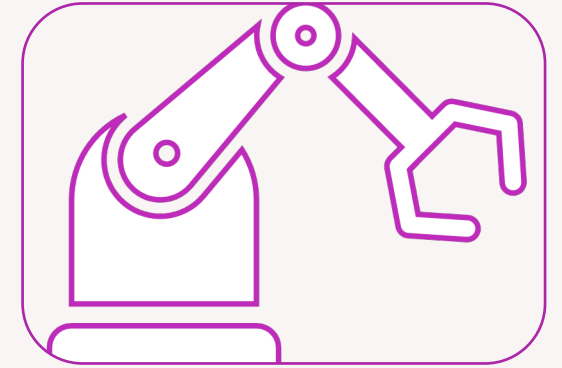
Labour



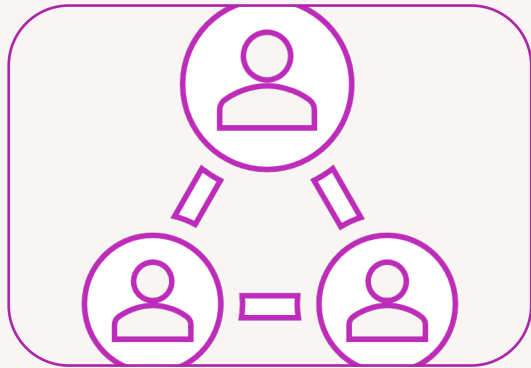
Overheads



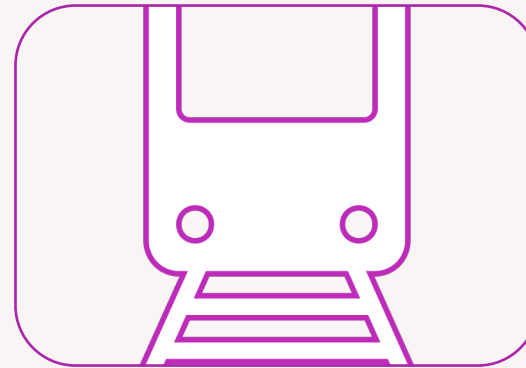
Materials



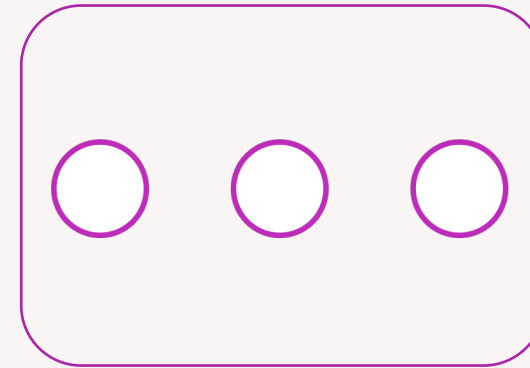
Equipment Usage



Subcontractors



Travel & Subsistence



Other

Conditions of Award

Under the Subsidy Control Regime, we will conduct a financial review and seek assurances on your organisation, leadership team, and persons of significant control.

Certify you are eligible

When submitting an application, you must certify that you are eligible for funding. If you are unsure, please take independent legal advice before applying. You must pass our financial review and assurances before being offered a conditional award.

Other Innovate UK projects

If you have an outstanding final claim or Independent Accountant Report (IAR) on a live Innovate UK project, you will not be eligible to apply to this competition, as a lead or a partner organisation.

We will not award you any further funding if you:

- applied to a previous competition as the lead or sole company and were awarded funding by Innovate UK, but did not make a substantial effort to exploit that award
- applied to a previous competition as the lead or sole company and failed to comply with grant terms and conditions.

Types of organisations we fund

- Business – Small or Micro, Medium or Large registered in the UK
- Research Organisation (RO):
 - Universities (HEIs)
 - Not for profit distributing Research & Technology Organisation (RTO) including Catapults
 - Public Sector Research Establishments (PSRE)
 - Research Council Institutes (RCI)
- Public sector organisations and charities doing research activity

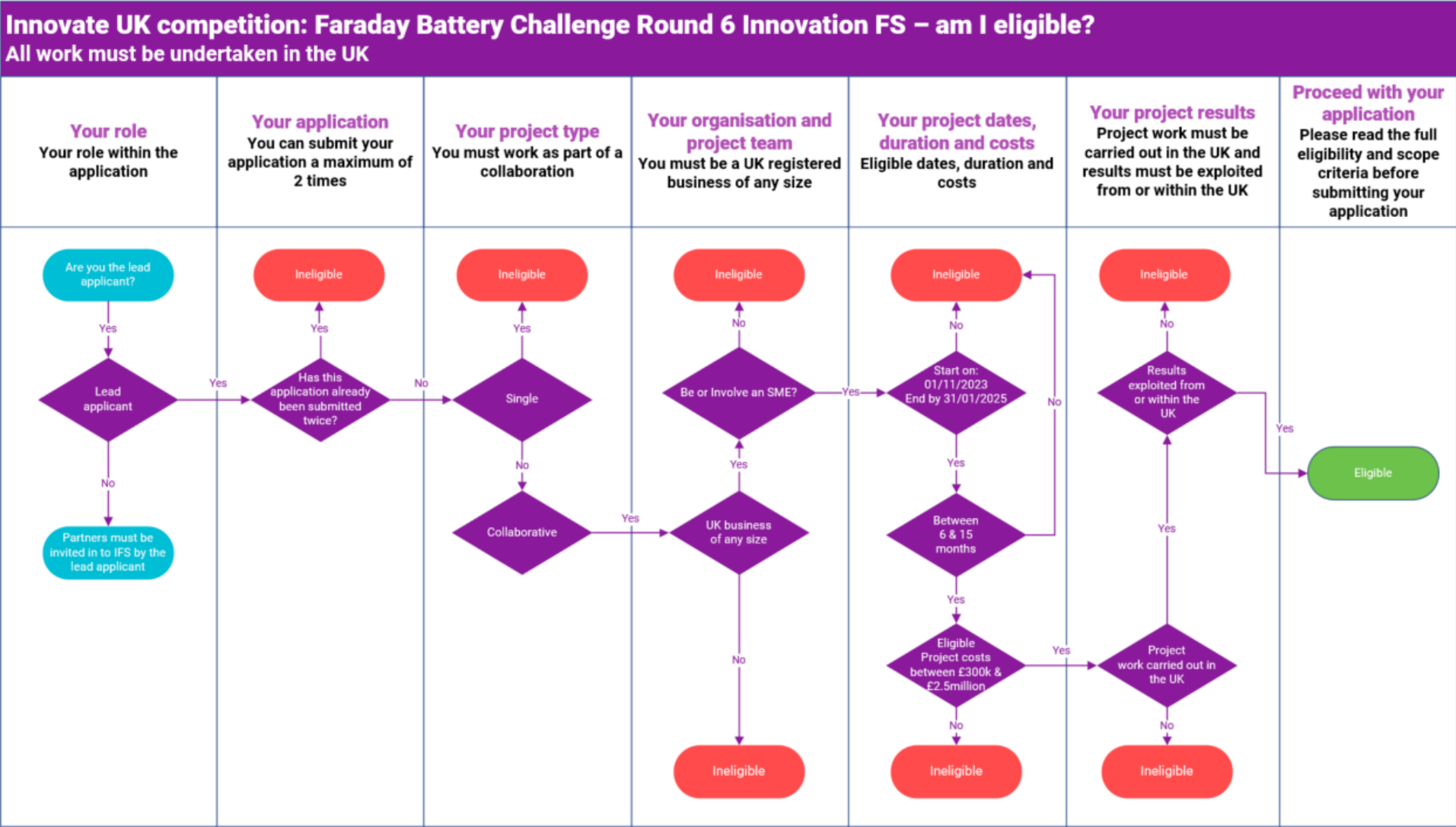
If you are 100% owned by a large parent company as a small subsidiary this means you are classed as a large company and will only be entitled to the relevant grant. For more information on company sizes, please refer to the [company accounts guidance](#).

Previously submitted applications

These competitions do allow you to submit a previously submitted application.

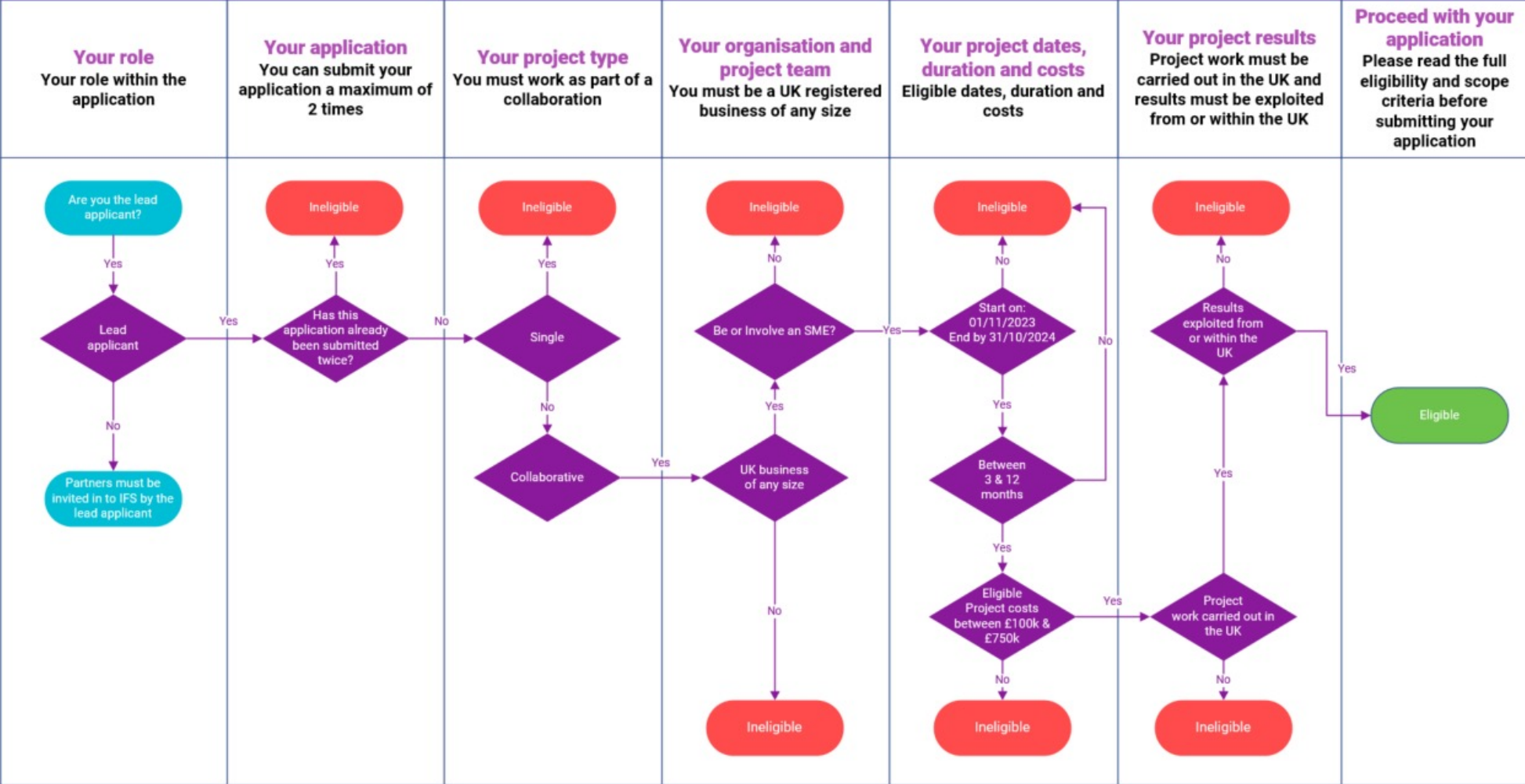
Previously submitted application	Not a Previously submitted application
A previously submitted application is an application Innovate UK judges as <u>not</u> materially different from one you have submitted before (but it can be updated based on the assessors' feedback)	A brand-new application, project or idea that you have not previously submitted into an Innovate UK competition OR A previously submitted or ineligible application which: <ul style="list-style-type: none">✓ has been updated based on assessor feedback✓ <u>and</u> is materially different from the application submitted before✓ <u>and</u> fits with the scope of this competition

Am I eligible to apply?



Am I eligible to apply?

Innovate UK competition: Faraday Battery Challenge Round 6 Innovation FS – am I eligible?
 All work must be undertaken in the UK



Key Dates

Timeline	Dates
Competition Opens	16/05/2023
Briefing Event	17/05/2023
Submission Deadline	12/07/2023, 11:00
Applicants informed	11/08/2023

Application Questions

Question	Appendix
Applicant location (not scored)	No
Need or challenge	No
Approach and innovation	Yes - optional
Team and resources	Yes - optional
Market awareness	No
Outcomes and route to market	No
Wider impacts	No
Environmental sustainability	No
Equality, diversity and inclusion	No
Project management	Yes - mandatory
Risks	Yes - mandatory
Added value	No
Costs and value for money	No



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UK

Detailed guidance available on IFS

Submit your application early!

Customer Support can help resolve any issues you might have when submitting but only if they are contacted before the deadline.

Once the deadline has passed, your application cannot be submitted.



Conditional offer of awarding

If you receive a notification saying you have been successful at the assessment stage, you will have a further 8 steps to complete in Project Setup.

These are:

- Project details
- Project team
- Documents
- Monitoring Officer allocation
- Bank details
- Finance checks
- Spend profile
- Grant Offer Letter

Work can only commence on the project once you have signed and returned the Grant Offer Letter.

Project Impact questions

- Each organisation in your application will complete the Project Impact questions within the 'Supporting information' section
- The Project Impact questions ask for data about your business and innovation and its contribution to the UK economy, society, and the environment
- Visit the [Project Impact guidance](#) page for more information, the types of questions you will be asked and how to get further support
- By providing this data, you are enabling us to better understand the impact of our support. It will help us identify success stories and provide evidence to government and the public of the value of supporting innovative businesses



For more information:

- Watch Our Impact Management Framework video [here](#)
- Watch How to Complete the Project Impact questions video [here](#)

Additional Support



Equality, Diversity & Inclusion

- We are on a mission to embed Equality, Diversity, and Inclusion in everything we do, internally and externally.
- We believe that great ideas can, and do, come from anyone and everyone.
- We know that diversity and inclusion in businesses contributes to enhanced innovation, satisfaction, performance, and ultimately, commercial success.
- So, if you would like any support, please contact our Customer Support Service Team on support@iuk.ukri.org or at **0300 321 4357**.



What to Expect

1.

Contact our Customer Support Services Team as early as possible – we suggest at least 15 working days before the deadline

2.

Complete a request form which will be sent to our partner Diversity & Ability (D&A)

3.

D&A will conduct a Discovery Conversation with you and make reasonable adjustments recommendations

4.

D&A will organise and deliver bespoke reasonable adjustments for and with you

5.

Submit your application – please do so well ahead of the deadline as extensions cannot be provided

Innovate UK EDGE

An innovation and growth specialist, or scaleup directors, work with a company's leadership to hone its commercial strategy and help it take targeted action to, for example:

- Build investment readiness
- Manage innovation effectively
- Enter global markets
- Providing local to national to international growth and scaling support



Contact us via:
innovateukedge.ukri.org

Innovate UK EDGE

Bespoke growth and scaling support at the business end of innovation

- Intensive growth and scaling support tailored to the needs of each of our ambitious innovation-driven clients
- Offered alongside project funding to Innovate UK award winners, most of whom engage us. We are also available to all high growth potential innovative small or medium-sized businesses*
- Engagement at early, growth and scaling stages, with our core high growth service and enhanced Scaleup Programme
- Delivered by 290 innovation and growth specialists embedded in regional ecosystems across the UK, including a board of expert scaleup directors

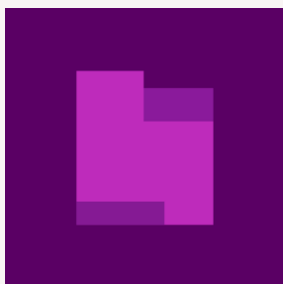
**subject to eligibility and currently in all nations and regions outside Scotland*

Contact

Customer Support Services

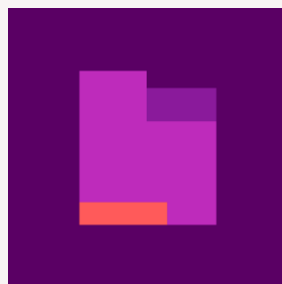
0300 321 4357 (Monday - Friday 9-5pm)

support@iuk.ukri.org



Innovate UK

ukri.org/councils/innovate-uk



Innovate UK KTN

ktn-uk.co.uk



Innovate UK EDGE

innovateukedge.ukri.org

Q&A



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Top Tips for applicants

- 01 Fit within scope** Make sure your project is within the remit for the competition – details can be found in the Briefing Document
- 02 Agree key points with partners** Get started on your outline project plan and Consortium Agreement as soon as possible – who will do what and who will own what when it comes to IP?
- 03 Be clear & concise** You don't have much space so make every word count and avoid overly technical language
- 04 Make a realistic plan** Remember if you get the funding you will have to do the work so don't write yourself into a corner
- 05 Be convincing** Why do you need the money? Ask yourself – would you invest?
- 06 Remember risk & innovation** Projects need sufficient quantities of both to be eligible for Innovate UK funding
- 07 Quantify & justify assertions** Provide numbers and evidence where possible to back-up your claims
- 08 Excite & inspire** Stand out from the crowd and make sure your first few paragraphs are particularly strong as that first impression counts.
- 09 Get advice & feedback from KTN** We are grant funded to support you – we can provide independent, objective feedback and advice. Contact us early to get the most value.
- 10 Don't leave it too late to ask question or submit!** Remember that Innovate UK deadlines are strictly 11am but you can upload and overwrite your application as many times as you like - only the last version will be evaluated.

Good application Guide: <https://iuk.ktn-uk.org/investment/good-application-guide/>

Thank you for attending!

Faraday Battery Challenge Round 6 Innovation Competition

17 May 2023

