

# Zero Emission Road Freight Demonstrations: battery electric and hydrogen fuel cell trucks

Simon Buckley  
Zero Emission Mobility Lead  
Innovate UK KTN  
18<sup>th</sup> August 2022



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# Welcome and Housekeeping

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- All participants will be muted throughout the webinar presentations
- Please use the chat box for networking and the Q and A box for questions
- For any technical issues, please contact Olivia Brown
- You can access a transcript by clicking on the “live transcript button
- The webinar will be recorded, and you will be sent the link, along with a GDPR compliant version of the chat, shortly after the webinar



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# Agenda

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Time	Title / Organisation	Speaker
10:00	Welcome and Introduction	Simon Buckley, Zero Emission Mobility Lead, Innovate UK KTN
10:05	DfT Welcome	Chloe Russell, ZERFD Project Sponsor, Freight Decarbonisation team, DfT
10:10	Introduction to Innovate UK	Abbie Wood, Portfolio Manager, Innovate UK
10:15	ZERFD - Pipeline Interventions	David Tozer, Head of Land & Maritime Transport, Innovate UK
10:20	Zero Emission Road Freight Demonstrations Competition Scope	Alistair Barnes, Innovation Lead - Zero Emission Vehicles, Innovate UK
11:10	Q and A	All
11:30	Comfort Break	All
11:35	Application Process	Abbie Wood, Portfolio Manager, Innovate UK
12:15	Q and A	All
12:30	Close	Simon Buckley, Zero Emission Mobility Lead, Innovate UK KTN



**Chloe Russell | ZERFD  
Project Sponsor, Freight  
Decarbonisation team, DfT**



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# Introduction to Innovate UK and UKRI



# UK Research and Innovation

We work with the government to invest over £7 billion a year in research and innovation by partnering with academia and industry to make the impossible, possible. Through the UK's nine leading academic and industrial funding councils, we create **knowledge with impact.**



**UK Research  
and Innovation**



# 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







# Zero Emission Road Freight Demonstration

Pipeline interventions

# Planned programme interventions



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## Innovation in batteries for road freight applications

R&D, technology development and future industrialisation

Industry / OEM led – specification and benchmarks.

Outcome to be taken forward via aligned channels.

Faraday Battery Challenge



Innovate  
UK



## Public sector deployments (SBRI) – battery electric and hydrogen trucks

Builds on the success of the Phase 1 SBRI battery truck trial

Opportunity to support the middle weight truck market and operations

Hydrogen and battery electric trucks supported, along with infrastructure

Emphasis on public bodies and those which can be supported under an SBRI mechanism

Deployment and data focused



## Innovation in truck charging and H2 refuelling infrastructure

Informed via ongoing work with BEIS and OZEV in the charging and refuelling space.

Addresses current market failure and challenges

Support the deployment of innovative truck charging and refuelling infrastructure solutions which underpin a business operation or wider user base.

Depots and rest areas which have high utilisation. Informed via new DfT report.



# Scope



# Competition scope sections

My slides will be split as follows:

- Key points
- Competition scope introduction
- Demonstration-specific requirements
- Vehicle-specific requirements
- Infrastructure-specific requirements
- Other scope details
- Projects we will not fund
- Competition details:
  - Portfolio approach
  - Financial arrangements
  - Independent evaluation

I will be presenting the same text that is published on the Innovation Funding Service, often reading verbatim.

Strand  
specific

- I will highlight text that is specific to a single strand



# Key points (1/2)

Three equivalent demonstration strands:

- Battery electric trucks
- Hydrogen fuel cells
- Battery electric and hydrogen fuel cell

Programme aims and focus:

- To kick-start the deployment of long haul zero emission HGVs
- To fund a multi-year demonstration focussed on the largest zero emission HGVs
- To develop the required business models for scalable deployment
- To deploy a network of dedicated infrastructure
- To supporting the government's commitment to end the sale of new, non-zero emission HGVs by 2035/2040
- To collect data to inform future policy decisions and infrastructure choices

# Key points (2/2)

Total competition budget of £140 million:

- We expect to fund up to 5 demonstrations – there is a *minimum* size in terms of vehicles, infrastructure and operators
- Both technologies will be funded - single technology projects are capped at £90m grant funding request
- Projects must start on 1 March 2023, and grant funding must be claimed by 31<sup>st</sup> March 2025
  - Projects must run commercially beyond this point
  - We have grant spend targets per financial year
- Vehicles funded by the programme must be demonstrated for 5 years

Subsidy levels (or state aid):

- R&D: 70% / 60% / 50% depending on organisation size
- Capital costs for vehicles and for infrastructure: up to 80% of your investment
- Research participation: limited to 5% of total project funding

# Competition Scope Introduction (1/3)

The aim of this competition, as part of the Zero Emission Road Freight Demonstration programme, is to focus on the largest heavy goods vehicles (HGVs).

We expect to fund up to 5 demonstrations covering all technologies that are in scope, across the three strands of this competition. We are looking for projects that include multiple vehicle and infrastructure suppliers and that demonstrate a wide range of duty cycles with multiple freight operators.

The programme will fund costs associated with project delivery, vehicle access and recharging/refuelling infrastructure during the period from when the project starts, up until 31 March 2025. All vehicles and infrastructure funded must be demonstrated for 5 years.

Innovate UK encourages and is particularly interested in proposals with micro, small or medium-sized enterprise (SME) collaborative involvement.



# Competition Scope Introduction (2/3)

Each strand will fund multi-year on-road demonstrations of zero emission heavy goods vehicles (HGVs) as part of your standard freight operations.

Your project's size must enable a demonstration of at least:

	Battery only strand	Hydrogen FC only strand	Battery and Hydrogen FC strand
Number of trucks	≥25	≥25	≥40
Number of operators	≥2	≥2	≥4
Number of recharging/refuelling locations	≥3	≥2	≥3
Funding request	£20-90m	£20-90m	£30-140m



# Competition Scope Introduction (3/3)

Your proposal must:

- define the demonstration that you plan to conduct, including all associated costs and the range of operational use cases that you will demonstrate
- focus on long-haul articulated heavy goods vehicles (40-44t gross vehicle weight) and developing a sustainable and scalable approach to zero emission road freight
- present a well-rounded and industrially driven consortium capable of rapid deployment
- evidence that you can acquire the vehicles and supply the infrastructure needed to carry out a successful demonstration in the required timeframe
- define a demonstration which has a viable route to expanding nationally and internationally, as part of your long term strategy to decarbonise this sector

# Demonstration-specific requirements (1/3)

You must:

- conduct an ambitious demonstration with focus on the most difficult to decarbonise HGV applications, including long-haul and long-duration high speed operations
- focus on high utilisation of vehicles and infrastructure, and potential multi-shift operations, to maximise value for money, explore commercial viability and inform an optimal Total Cost of Ownership (TCO)
- operate zero emission HGVs in various types of locations, whilst performing a range of duty cycles to reflect the variety in HGV operations
- concentrate some vehicles around your key locations or infrastructure to explore factors associated with future high saturation deployments, fully exploring the boundaries and capabilities of the technology and infrastructure

# Demonstration-specific requirements (2/3)

You must:

- ensure all vehicles funded in your project are in operation by 31st March 2025, vehicles can be deployed earlier or in stages if desired
- ensure adequate training is provided for all those using the vehicles or infrastructure
- ensure there are appropriate repair and maintenance provisions for your vehicles and infrastructure
- share your project's learning before, during and after your demonstration, both independently and by supporting activities organised by the funders or their agents
- collaborate fully with organisations responsible for regulation, safety and incident response to conduct a safe demonstration
- maximise UK value in terms of supply chain and deployment

# Demonstration-specific requirements (3/3)



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International freight operations are acceptable, but we will not fund infrastructure or operations originating outside the UK.

Successful projects and operators demonstrating vehicles will be required to engage with contractors from Innovate UK and Department for Transport (DfT). They are independently evaluating the zero emission road freight demonstrations.



# Vehicle-specific requirements (1/1)

You must:

- focus on use of state of the art vehicles that can be scaled, such as those produced by an original equipment manufacturer (OEM)
- use articulated HGVs, specifically 6x2 or 4x2 axle tractors and semi-trailers with 40-44t gross vehicle weight (GVW)
- only use...
  - battery electric HGVs
  - hydrogen fuel cell HGVs
  - a combination of battery electric HGVs and hydrogen fuel cell HGVs
- ensure any ancillary equipment is zero emission in use, including cabin heaters and trailer refrigeration units
- ensure vehicles are capable of long haul operations
- include usage of systems which provide vehicle traction power to ancillary equipment, for example power take-off (PTO)
- ensure demonstrated vehicles meet all safety, regulatory and legal requirements

Strand  
specific

# Infrastructure-specific requirements (1/2)

You must:

- ensure all proposed infrastructure funded through the programme is accessible to other operators outside the consortia by appointment
- ensure infrastructure is located to enable a variety of operations including on-route recharging and refuelling
  - utilise a proportion of state-of-the-art infrastructure, with the theoretical capability of charging vehicles at around 1MW DC peak
  - utilise a proportion of state of the art infrastructure, capable of refuelling multiple vehicles rapidly and back-to-back
  - ensure use of hydrogen that meets the UK's draft low carbon hydrogen standard, such as that produced using renewable electricity
- meet all safety, regulatory and legal requirements

Battery  
projects  
Hydrogen  
projects



# Infrastructure-specific requirements (2/2)

You must:

- align with current and emerging international standards
- describe any decommissioning that is required at the conclusion of the demonstration (infrastructure which can viably be repurposed does not require decommissioning)

Projects can use existing or planned infrastructure where it is compatible with their demonstration and appropriate for long haul HGVs.

Battery  
projects

Hydrogen  
projects

We encourage projects to demonstrate links to other initiatives, such as the OFGEM Strategic Innovation Fund.

We encourage projects to demonstrate links to other initiatives, such as the OFGEM Strategic Innovation Fund and the Net Zero Hydrogen Fund. We may prioritise hydrogen projects that have a focus on the Tees valley area.

# Other scope details (1/2)

You can propose a demonstration using a proportion of vehicles that are not type approved or are produced by an organisation with an annual production intent of less than 500 vehicles.

The following limits are set:

- retrofitted diesel (or internal combustion engine) vehicles at 10% of the vehicles demonstrated
- vehicles produced using a new 'glider' chassis at 20% of the vehicles demonstrated, or up to 30% if there are no retrofit vehicles demonstrated

You must provide a clear justification that this approach allows you to demonstrate best in class technology, maximise UK content, and that production can be scaled to enable rapid deployment of the core technology.

## Other scope details (2/2)

You can downplate a maximum of 30% of your 40-44t GVW demonstration vehicles or operate them exclusively for lighter loads. This must be part of a well justified plan to demonstrate technical and operational capability of the core zero emission HGV technology, particularly where these are the first vehicles to be demonstrated. These vehicles must be used as a pathfinder towards heavier vehicles.

Your demonstration can use rigid HGVs at a maximum of 5% of your deployment. It must be part of a well justified approach to explore a mainstream use case or duty cycle.

### Hydrogen projects

You can propose a demonstration using limited quantities of hydrogen that does not meet the UK's draft low carbon hydrogen standard up to 31 March 2025. This is only where essential to supply sufficient quantity of hydrogen to deploy vehicles.

Hydrogen refuelling can be supported through the Department for Transport's Renewable Transport Fuel Obligation (RTFO) scheme, or other appropriate mechanisms.

# Projects we will not fund

We are not funding projects that:

- propose a demonstration using ancillary equipment that is not zero emission, for example, diesel refrigeration
  - use dynamic charging or electric road systems ← **Battery projects**
  - include costs for hydrogen production
  - demonstrate on use of hydrogen internal combustion engines or usage of hydrogen in conjunction with internal combustion engines
  - focus on hydrogen which is derived from fossil fuels
- include coaches, road sweepers, refuse collection vehicles, off highway vehicles or HGVs that are not involved in freight
- include costs for purchasing land or for generating electricity
- are creating a legal entity such as a Special Purpose Vehicle (SPV) to manage project funds
- are dependent on export performance
- are dependent on domestic inputs usage

Hydrogen projects



# Competition details

*The following slides highlight important aspects of the competition and programme, but do not relate to the technical scope of the competition.*

*All points raised are written into the competition brief, which can be viewed on the Innovation Funding Service portal.*

# Portfolio approach

We want to fund a variety of projects across different technologies, markets and technological maturities. We call this a portfolio approach.

The programme reserves the right to adjust the distribution of funding across zero emission road freight competitions.

# Financial arrangements (1/3)

We encourage you to align your funding spend against this profile where possible:

- from your project start date (1 March 2023) to 31 March 2023: **30%**
  - 1 April 2023 to 31 March 2024: **30%**
  - 1 April 2024 to 31 March 2025: **40%**
- 
- We will ask you about this as part of your application as this information help financial forecasting at Innovate UK and the Department for Transport
  - We will take your answer into consideration during our competition portfolio review

*If we cannot achieve this spend profile at a programme level, it may restrict the programme budget – we will work with successful projects to determine a realistic spend profile*

# Financial arrangements (2/3)

*Claims can typically only be made quarterly for costs that have been incurred when the project is live and have been paid by the claimant. However, special arrangements exist within this programme:*

- Innovate UK will work with successful projects to enable funding to be claimed and drawn down, to support interim payments defined as part of key commercial agreements between project participants and suppliers
- If successful you will be required to evidence commercial agreements with suppliers and draw down the grant according to milestones and terms stated within the agreement



# Financial arrangements (3/3)

Dates:

- The programme will fund costs associated with your project during the period from when the project starts up until 31 March 2025
- all vehicles funded to be demonstrated for 5 years
- Your demonstrations will continue under commercial conditions until the agreed project end

If successful, you will not be able to:

- reassign capital costs to R&D costs
- reassign R&D costs to capital costs
- increase the amount or proportion of grant funding you are requesting for capital costs or R&D costs

*Please ensure you include accurate project costs within your application.*



# Independent evaluation (1/3)

Successful projects and operators demonstrating vehicles will be required to engage with contractors who are independently evaluating the zero emission road freight demonstrations.

This is expected to include:

- vehicle and infrastructure data collection
- attaining a combustion engine benchmark
- infrastructure deployment
- standard testing of vehicles at specialised facilities
- financial details
- access to vehicle operators and drivers
- evaluation and dissemination activities

**See the  
competition  
for more detail**

# Independent evaluation (2/3)

Innovate UK and DfT are aware that certain raw data will be confidential and commercially sensitive and our contractor will work collaboratively with you to define an acceptable approach.

To meet programme objectives, including dissemination of learning across the sector, your project must supply agreed data, but it will be aggregated or anonymised where it is marked as confidential. Data will be stored confidentially.

Your project is not required to fund this evaluation activity, but the evaluation activity will require access to vehicles, drivers, suppliers, and stakeholders on an ongoing basis throughout the project.

In some limited cases and by agreement, the evaluation contractors may require access to vehicles when they would typically be undergoing operational duties.

# Independent evaluation (3/3)

Funding is contingent on your project formally accepting a mutually agreed data collection and demonstration evaluation contract and complying with it throughout the project.

You may also be required to engage with contractors from Innovate UK and DfT who are exploring complementary factors associated with the demonstration or future deployment of zero emission HGVs.

# Scope Q and A



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**Comfort Break**  
**Please come back at 11:35**



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# Eligibility criteria

# Previously submitted applications

This competition **does not** 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)	<p>A brand-new application, project or idea that you have not previously submitted into an Innovate UK competition</p> <p>OR</p> <p>A previously submitted or ineligible application which:</p> <ul style="list-style-type: none"><li>✓ has been updated based on assessor feedback</li><li>✓ <u>and</u> is materially different from the application submitted before</li><li>✓ <u>and</u> fits with the scope of this competition</li></ul>

# Eligibility criteria

Project eligibility	<ul style="list-style-type: none"><li>• lead must be a UK registered business of any size or a research and technology organisation (RTO)*</li><li>• lead must collaborate with other UK registered organisations</li><li>• claim the grant funding by 31 March 2025</li><li>• complete your project and 5 year demonstration of all vehicles funded by the programme no later than 31 March 2030</li><li>• carry out all of its project work in the UK</li><li>• intend to exploit the results from or in the UK</li></ul>
Grant funding request	Battery electric trucks: <b>between £20 million and £90 million</b> Hydrogen fuel cell trucks: <b>between £20 million and £90 million</b> Battery electric and hydrogen fuel cell: <b>between £30 million and £140 million</b>
Project start	by <b>1 March 2023</b>

# 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](#).

# Compliance with the UK Subsidy Control Regime

On 1 January 2021, the UK left the EU and is no longer subject to EU laws on State aid. We draw your attention to the guidance issued by BEIS: [Complying with the UK's international obligations on subsidy control: guidance for public authorities](#). Please be aware this is a living document and may be updated by BEIS as time progresses.

The set rules (typically GBER) which we previously relied on for the limits of what we could award, have now been replaced by internal decisions based on the new BEIS Subsidy Control Regime, and on policy, which will in turn set out bespoke eligibility requirements for each funding opportunity.

Innovate UK is offering funding for this competition in line with the UK's obligations and commitments to Subsidy Control. To ensure that Innovate UK remains compliant with the UK's international Subsidy Control duties in respect of:

- the EU-UK Trade and Cooperation Agreement;
- Article 10 of the Northern Ireland Protocol (successful applicants which are affected by the Northern Ireland Protocol will be funded in line with EU State aid regulations)
- Article 138 of the Withdrawal Agreement (some Union law applicable after 31 December 2020 in relation to the UK's participation in Union programmes and activities)
- the Subsidies and Countervailing measures within the WTO (ASCM)
- any other Free Trade Agreements active at the time of award

All awards will be conditional on compliance at all times with the UK's International obligations on Subsidy Control - this will be reflected in the terms and conditions of any award.



# Due diligence for UK Subsidy Control Regime

Under the Subsidy Control Regime, we will carry out financial health checks and ongoing concern assurances on your organisation.

## 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. Should you be successful, we will complete these financial checks and assurances before confirming the grant offer.

- For more information on company sizes, please refer to the [Company accounts guidance](#).
- Further information is available on our website in the general guidance.

# Eligibility Criteria - EU State Aid Regulations – Northern Ireland Protocol

If you are an applicant who is conducting activities that will affect trade of goods and/or electricity between Northern Ireland and the EU as envisaged by [Article 10 of the Northern Ireland protocol](#), then you must apply under European Commission State aid rules.

## Undertaking in Difficulty

For applicants subject to the European Commission State aid rules, you will be required to prove that they were not an “Undertaking in Difficulty” (UiD). We will ask for evidence of this.

This test applies to:

- companies that are more than 3 years old
- companies where more than half of its subscribed share capital has disappeared as a result of accumulated losses.
- your parent or holding company

## Certify you are eligible

When submitting an application, you must certify that you are eligible for State aid. If you are unsure, please take legal advice before applying. Should you be successful, we will apply this test as part of our viability checks before confirming the grant offer.

Further information is available on our website in the [general guidance under state aid](#).

If you are applying for an award funded under State aid Regulations, the definitions for company size are set out in the [European Commission Recommendation](#) of 6 May 2003.

# Eligibility Criteria: Funding Opportunities

This competition will fund R&D costs and Capital costs

We'll go through them separately.

# R&D Costs

Funding for R&D projects is split in to **3** research categories: feasibility studies, industrial research and experimental development.

This competition is for industrial research projects.

**For industrial research projects, you could get funding for your eligible R&D project costs of:**

- up to 70% if you are a micro or small organisation
- up to 60% if you are a medium-sized organisation
- up to 50% if you are a large organisation

**For research organisations conducting fundamental research you could get funding for your eligible project costs of up to 100%.**

The research organisations undertaking non-economic activity as part of the project can share up to **5%** of the total grant funding requested.

For general guidance on what our research categories are please visit:

<https://www.ukri.org/councils/innovate-uk/guidance-for-applicants/general-guidance/categories-of-research-and-development/#contents-list>

# Capital costs

Your application can include **capital costs**. These must be captured in the “zero emission road freight demonstrations capital costs template” attached to **Question 13**.

You will need to identify two separate categories of capital costs:

- **capital equipment, for example trucks**
- **capital infrastructure, for example refuelling or recharging infrastructure**

You will need to complete one form for each type of capital cost.

Individual partners that are conducting commercial or economic activities (which may include research organisations) as part of the project can claim grant funding **up to 80%** of their eligible project costs.

Research organisations claiming capital costs must also complete the Capital Costs Template, as well as Je-S, and comply with the rule that research participation is limited to **5%** of the total project costs (including capital costs).



# Capital costs

You must estimate the residual value and we may independently value capital equipment at the end of the project. Where there is a discrepancy which results in you exceeding the rate of subsidy you have been awarded, this will need to be redressed.

Access to the research infrastructure (recharging or refuelling stations) for their operation or use must be open to several users outside the project, without discrimination and be granted on a transparent basis. Users must be charged the market price.

Funding cannot be used to reduce the total cost of freight operations below the cost of diesel vehicle operations.

# Participation Rules

**The aim of this funding opportunity is to:**

- optimise the level of funding to business and
- recognise the importance of research base to project

At least **95%** of total eligible project costs must be incurred by business.

The maximum level (**5%** of total eligible project costs) is shared by all research organisations collaborating on the project.

# What is collaboration?

In all collaborative projects there must be:

- at least two organisations claiming grant within the application (including the lead)
- a **business or RTO-led** consortium, which may involve both business and the research base
- evidence of effective collaboration

We would expect to see the structure and rationale of the collaboration described in the application.

# Making more than one application

An eligible organisation can lead or collaborate on any number of applications.

\*However, please ensure that you can fully commit to each project you take part in, in the event that multiple are funded.

# 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.

# Key Dates

Timeline	Dates
Competition Opens	15 August 2022
Briefing Event	18 August 2022
Submission Deadline	12 October, 11:00am
Interviews	W/C 21 November 2022
Applicants informed	9 December 2022





# **Innovation Funding Service (IFS)**

# Search for a funding competition and review criteria

## Funding opportunities

### Zero emission road freight battery and hydrogen demonstration

UK registered organisations can apply for a share of up to £140 million to demonstrate battery and hydrogen fuel cell trucks.

Opportunity status: Open

Funders: [Innovate UK](#)

Co-funders: Department for Transport

Funding type: Grant

Total fund: £140,000,000

Publication date: 16 August 2022

Opening date: 15 August 2022 09:30 UK time

Closing date: 12 October 2022 11:00 UK time

Funding competition

### Zero emission road freight battery electric demonstration

UK registered organisations can apply for a share of up to £140 million to demonstrate

Competition opens: Monday 15 August 2022

Competition closes: Wednesday 12 October 2022 11:00am

[Start new application](#)

Or go to [your dashboard](#) to continue an existing application.

[Summary](#)

[Eligibility](#)

[Scope](#)

[Dates](#)

[How to apply](#)

[Supporting information](#)

#### Who can apply

#### Your project

Your project must:

- start on 1 March 2023
- claim the grant funding by 31 March 2025
- complete your project and 5 year demonstration of all vehicles funded by the programme no later than 31 March 2030
- carry out all of its project work in the UK
- intend to exploit the results from or in the UK

Funding competition

### Zero emission road freight hydrogen fuel cell truck demonstration

UK registered organisations can apply for a share of up to £140 million to demonstrate hydrogen fuel cell trucks.

Competition opens: Monday 15 August 2022

Competition closes: Wednesday 12 October 2022 11:00am

[Start new application](#)

Or go to [your dashboard](#) to continue an existing application.

[Summary](#)

[Eligibility](#)

[Scope](#)

[Dates](#)

[How to apply](#)

[Supporting information](#)

#### Description

Innovate UK, part of UK Research and Innovation, will work with the Department for Transport to invest up to £140 million in innovation projects. As part of the Zero Emission Road Freight (ZERFT) Demonstration programme, this competition will focus on the largest heavy goods vehicles (HGVs). The programme will support government's commitment to end sales of all new, non-zero emission HGVs by 2040 and enable continued cross border freight.

The Zero Emission Road Freight programme competition is funding demonstrations across 3 strands:

- [Zero emission road freight battery electric truck demonstration](#)
- Zero emission road freight hydrogen fuel cell truck demonstration (this strand)
- [Zero emission road freight battery and hydrogen demonstration](#)

# Lead Applicant: create an account

The lead applicant must create an account:

## UK registered businesses

Use Companies House lookup as it speeds up our checks by providing your company number. You are unable to enter this at a later date.

## Research organisations, academics and universities

Enter your information manually so you are not listed as a business on IFS and ensure you receive the correct funding.



This screenshot shows the 'Create your account' page for 'Your organisation' on the GOV.UK Innovation Funding Service. The page includes a 'Business' section with a 'Find your organisation on Companies House' search bar. The search results for 'NOMENSA LTD' are displayed, showing its company number (04214477) and address (13 Queen Square, Bristol, BS1 4NT).

GOV.UK Innovation Funding Service

BETA This is a new service – your [feedback](#) will help us to improve it.

[Back](#)

Create your account

### Your organisation

**i** Your organisation must be UK based to receive funding from Innovate UK

**Business**

**Find your organisation on Companies House**  
Enter your organisation name or registration number

**Companies House search results**  
Select your organisation from the options below

NOMENSA LTD  
04214477 - Incorporated on 10 May 2001  
13 Queen Square, Bristol, BS1 4NT

This screenshot shows the 'Please sign in or create an account' page on the GOV.UK Innovation Funding Service. It features two main options: 'Used this service before?' with a 'Sign in' button, and 'New to this service?' with a 'Create account' button. Below these is a 'Sign in' section with fields for 'Email address' and 'Password', each with a 'Please enter...' prompt. A 'Show' button is next to the password field. At the bottom, there is a link for 'Need help signing in or creating an account?' and a section titled 'My email and/or password isn't working' which includes the text 'If you applied previously using the old service, you will need to create a new account.' and a link for 'Forgotten your password?'.

GOV.UK Innovation Funding Service

BETA This is a new service – your [feedback](#) will help us to improve it.

[Back](#)

## Please sign in or create an account

**Used this service before?**  
Please sign into your Innovation Funding Service account.

**New to this service?**  
If you haven't used the new Innovation Funding Service before you will need to create an account.

### Innovation Funding Service Sign in

Email address  
Please enter your email address.

Password  
Please enter your password.

▼ [Need help signing in or creating an account?](#)

**My email and/or password isn't working**

If you applied previously using the old service, you will need to create a new account.

[Forgotten your password?](#)

# Project Details

- **Application Team** - Collaborators can invite organisations who you are working with on the project. Contributors can invite colleagues from your own organisation to help you complete your application. **All team members and Lead applicants must complete the Equality, Diversity and Inclusion survey embedded in IFS as part of your application.**
- **Application Details** - Title, timescales
- **Subsidy basis** - Will the project, including any related activities, you want Innovate UK to fund, affect trade between Northern Ireland and the EU? All participants must complete this section.
- **Project Summary** - Short summary and objectives of the project including what is innovative about it
- **Public Description** - Description of your project which will be published if you are successful
- **Scope - How does your project align with the scope of this competition?** - If your project is not in scope, it will be immediately rejected and will not be sent for assessment

# Application Questions

Detailed guidance available on IFS

Application Form		Appendix?
Question 1	Applicant location (not scored)	No
Question 2	Expected grant claim for each financial year (not scored)	No
Question 3	Equality, Diversity & Inclusion (not scored)	No
Question 4	Need or challenge (out of 10)	No
Question 5	Approach to challenge (out of 30)	Yes - mandatory
Question 6	Team and resources (out of 10)	Yes - mandatory
Question 7	Market awareness (out of 10)	No
Question 8	Outcomes and route to market (out of 10)	No
Question 9	Wider impacts (out of 20)	No
Question 10	Project management (out of 10)	Yes - mandatory
Question 11	Risks (out of 10)	Yes - mandatory
Question 12	Added value (out of 10)	No
Question 13	Costs and value for money (out of 20)	Yes – optional + Capital Cost Template

# Capital cost template

## Guidance for completing your capital costs form


This form is used for applicants to detail costs associated with capital aspects of their project.

Costs associated with trucks must be submitted on a separate form to costs associated with refuelling/recharging infrastructure.

Before completing this Form, please refer to the Innovate UK online guidance on funding rules ([link above](#)) and the notes below.

Academic Partners should submit their financial details via the Je-S system as described in the Funding Rules documentation. They will also need to complete this capital costs form if claiming capital costs.

## Completing the form

Some boxes are shaded grey  this indicates that the value is calculated automatically.

Some boxes may have two red asterisks  \*\* this indicates that critical information is missing from that box.

## Capital costs form file naming convention and submission process

Please use the following naming convention for your capital costs form or forms: xxxxxxTypePartnerNameLtd.xlsx

Where:

'xxxxxx' is your application number.

'Type' is either 'Trucks' or 'Infra', depending on your usage of this template.

'PartnerNameLtd' is the name of the organisation who is claiming the capital costs. If the name is too long it can be shortened.

For example, if your application number is '123456' and you are claiming capital costs for vehicles and infrastructure, and you are 'Fictional company A Ltd' you would produce and submit these forms: '123456TrucksFictionalALtd.xlsx' and '123456InfraFictionalALtd.xlsx'

You must submit your capital costs spreadsheet or spreadsheets by email to [ZeroEmissionRoadFreight@iuk.ukri.org](mailto:ZeroEmissionRoadFreight@iuk.ukri.org) no later than the competition close date. Do not submit your form as a PDF.



# Application finances



# To claim funding

Your business does not have to be UK registered with Companies House when you apply but it must be registered before you can receive funding.

You are unable to claim funding if:

- you are an overseas organisation, so your company number begins with FC
- your organisation is setup as a branch, so your company number begins with BR
- you are a collaboration with no formal structure of ownership or control, so your company number begins with ML
- you are a Crown Dependency:
  - if your company is based in Jersey, your company number begins with JE
  - if your company is based in Guernsey
  - if your company is based in the Isle of Man

# British Overseas Territories

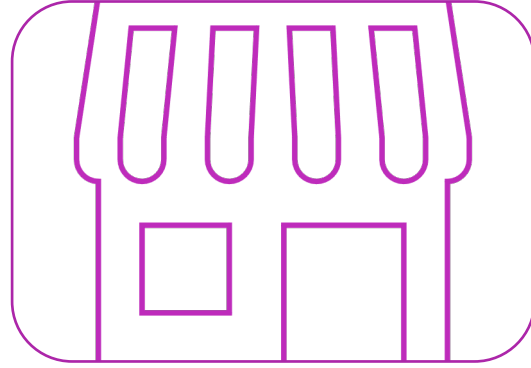
You are also unable to claim funding if your company is based in any of the British Overseas Territories (BOTs):

- Anguilla
- Bermuda
- British Antarctic Territory
- British Indian Ocean Territory
- British Virgin Islands
- Cayman Islands
- Falkland Islands
- Gibraltar
- Montserrat
- Pitcairn Islands
- Saint Helena, Ascension and Tristan da Cunha
- South Georgia and the South Sandwich Islands
- Turks and Caicos Islands

# Project cost categories



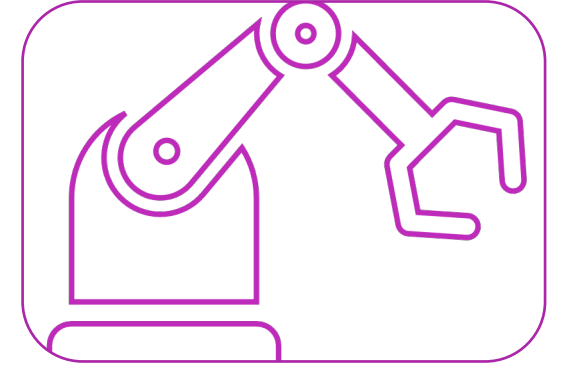
Labour



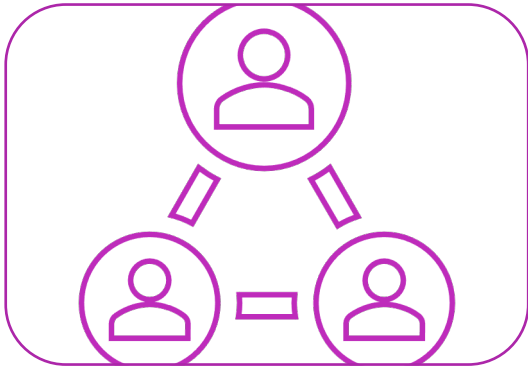
Overheads



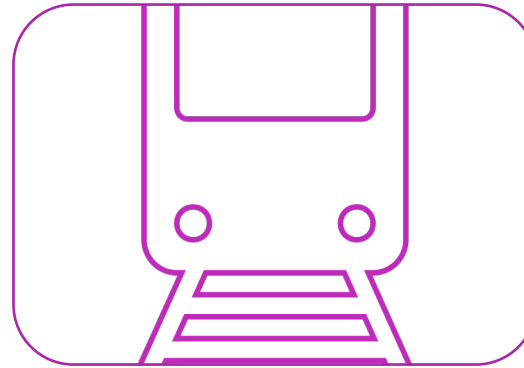
Materials



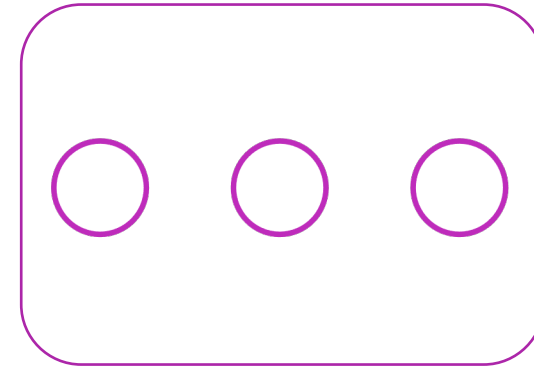
Equipment  
Usage



Subcontractors



Travel &  
Subsistence



Other

# Labour

## Eligible:

- staff working directly on project
- paid by PAYE
- NI, pension, non-discretionary costs

## Ineligible:

- dividends
- bonuses
- non productive time
- overtime

\*Labour costs related to vehicles or infrastructure should go in the Capital Cost Template

### Labour

£25,862 —

You can claim the labour costs of all employees you have working on your project.

► [Labour costs guidance](#)

If your application is awarded funding, you will need to account for all your labour costs as they occur. For example, you should keep timesheets and payroll records. These should show the actual hours worked by individuals and paid by the organisation.

Working days per year

Number of staff and roles within the project

Role within project	Gross employee cost	Rate (£/day)	Days to be spent by all staff at this grade	Total costs	
<input type="text" value="Project Manager"/>	<input type="text" value="50000"/>	£216	<input type="text" value="120"/>	£25,862	<a href="#">Remove</a>
<input type="text"/>	<input type="text" value="0"/>	£0	<input type="text" value="0"/>	£0	<a href="#">Remove</a>

[Add another role](#)

Total labour costs **£25,862**



# Overheads

## Innovate UK's definition

Additional costs and operational expenses incurred directly as a result of the project. These could include additional costs for administrative staff, general IT, rent and utilities

## Indirect (administration) overheads

Please ensure they are additional and directly attributable to the delivery of the project

## Direct overheads

- e.g. office utilities, IT infrastructure, laptop provision not covered by capital usage
- must be directly attributable to the project
- provide detailed breakdown together with methodology/basis of apportionment

### Overhead costs

£ 44,483 ▲

You can incur overhead costs associated with those directly working on the project as well as indirect (administration) overheads. To be eligible both overhead categories need to be directly attributable to the project. The indirect overheads need to be additional as well as directly attributable. Note that there are certain cost categories/activities which are not eligible. To find out which costs are ineligible/eligible refer to our [project costs guidance](#).

► [Overheads costs guidance](#)

- ☐ No overhead costs
- ☒ 20% of labour costs
- ☐ Calculate overheads

### Calculate overheads

If you feel your overheads are higher than 20% you may calculate a value using the Innovate UK model in the spreadsheet available below. The model shows you which types of indirect costs associated with your project you may claim. For support with this option, please contact our Customer Support Service on 01793 44 2700. Any value claimed under this model will be subject to a review. This will assess the appropriateness of your claim if your grant application is successful.



#### Download the overhead calculation spreadsheet

Download as an Excel document [overhead calculation spreadsheet.xlsx \(16KB\)](#)

Download as an Open Office document [overhead calculation spreadsheet.ods \(10KB\)](#)

### Upload your completed spreadsheet

No file currently uploaded

+ Upload



# Material costs

Please be clear on what the materials are, just putting consumables does not provide enough detail.

If insufficient information is provided, we will request more information should you be successful which may delay your project start date.

\*Material costs related to vehicles or infrastructure should go in the Capital Cost Template

**Materials**£10,000 —

You can claim the costs of materials used on your project providing:

- they are not already purchased or included in the overheads
- they are purchased from third parties
- they won't have a residual/resale value at the end of your project. If they do you can claim the costs minus this value

[Please refer to our guide to project costs for further information.](#)

► [Materials costs guidance](#)

Please provide a breakdown of the materials you expect to use during the project

Item	Quantity	Cost per item (£)	Total	
<input type="text" value="Software"/>	<input type="text" value="1"/>	<input type="text" value="10000"/>	£10,000	<a href="#">Remove</a>
<input type="text"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	£0	<a href="#">Remove</a>

[Add another materials cost](#)

Total materials costs **£10,000**

# Capital equipment usage

## Eligible:

Used in the project or shared with day-to-day production.

Calculations will need to be in line with your accounting practices.

Even if the equipment is depreciated fully over the life of the project this must be added under capital equipment.

\*Capital usage costs related to vehicles or infrastructure should go in the Capital Cost Template

**Capital usage** £750 —

You can claim the usage costs of capital assets you will buy for, or use on, your project.

► [Capital usage guidance](#)

Please provide a breakdown of the capital items you will buy and/or use for the project.

---

Item description

Laptop

New or existing item

☒ New ☐ Existing

Depreciation period (months)

24

Net present value at the start of your project or the price you bought it for (£)

2000

Residual value at end of project (£)

500

Utilisation (%)

50

Net cost

**£750**

# Subcontractors

Justified and quantified.

If non-UK subcontractors are being used, you will need to provide strong justification on why a UK-based subcontractor is not being used.

If you are subcontracting to a parent or sister company, please ensure you list at cost and do not include profit.

\*Third party costs related to vehicles or infrastructure should go in the Capital Cost Template under 'Other Costs'

You can subcontract work if you don't have the expertise in your project team. You can also subcontract if it is cheaper than developing your skills in-house.

► [Subcontracting costs guidance](#)

Please provide details of any work that you expect to subcontract for your project.

---

Subcontractor name

Country where the subcontractor will work

Role of the subcontractor in the project and description of the work they'll do

Cost

# Travel and subsistence

## Eligible:

Costs must be directly linked to the project.

Please break down your costs as follows:

- Travel
- Accommodation
- Subsistence

If you have an annual trip to visit the parent company this is not an eligible cost.

\*Travel and subsistence costs related to vehicles or infrastructure should go in the Capital Cost Template

Travel and subsistence				£ 3,000 ▲
You should include travel and subsistence costs that relate to this project.				
Purpose of journey or description of subsistence cost	Number of times	Cost each (£)	Total (£)	
Travel to robotics labs for testing	12	100	£ 1,200	<a href="#">Remove</a>
monthly project meetings	12	150	£ 1,800	<a href="#">Remove</a>
<a href="#">Add another travel cost</a>				
Total travel & subsistence costs			£ 3,000	

# Other costs

Costs that could not be added under previous headings

Do not double count

Patent filing costs for new IP – SMEs **up to £7,500**

\*Other costs related to vehicles or infrastructure should go in the Capital Cost Template



Other costs

£ 0 ▲

Please provide details of any project costs which cannot be covered by the other cost categories.

► [Other costs guidance](#)

Please note that legal or project audit and accountancy fees are not eligible and should not be included as an 'other cost'. Patent filing costs of new IP relating to the project are limited to £7,500 for SME applicants only. Please provide estimates of other costs that do not fit within any other cost headings.

Description and justification of the cost	Estimated cost (£)
<div></div>	<div>0</div>

[Add another cost](#)

# Project cost summary (R&D)

Project cost breakdown								
	Total	Labour	Overhead costs	Materials	Capital usage	Subcontracting costs	Travel and subsistence	Other costs
<b>Barry Shaw Experts Ltd</b> Partner	<b>£230,162</b>	£84,052	£16,810	£90,550	£0	£35,000	£3,750	£0
<b>EMPIRE LTD</b> Lead organisation	<b>£331,442</b>	£222,414	£44,483	£11,750	£13,000	£36,795	£3,000	£0
<b>University of Bath</b> Partner	<b>£19,762</b>	£8,104	£5,731	£412	£0	£0	£504	£5,011
<b>Total</b>	<b>£581,366</b>	£314,570	£67,024	£102,712	£13,000	£71,795	£7,254	£5,011

All organisations can see a summary of project costs.

The assessors will be able to see a detailed breakdown of all costs, including Capital Costs in the separate template.



# Project cost summary (R&D)

Ensure the grant request fits the criteria for this competition with a maximum total grant of between:

- **£20 million and £90 million for battery electric truck strand**
- **£20 million and £90 million for hydrogen fuel cell truck strand**
- **£30 million and £140 million for battery electric and hydrogen fuel cell truck strand**

		Total costs	% Grant	Funding sought	Other public sector funding	Contribution to project
<b>Barry Shaw Experts Ltd</b> Partner	✓	£230,162	70%	£161,113	£0	£69,049
<b>EMPIRE LTD</b> Lead organisation	⚠	£282,655	70%	£197,859	£0	£84,797
<b>University of Bath</b> Partner	✓	£239,114	0%	£0	£0	£239,114
<b>Total</b>		<b>£751,931</b>		<b>£358,972</b>	£0	£392,959

**\*These costs are for R&D activities only. You must take into account grant request on Capital Costs, listed separately.**

Research organisation participation is no greater than **5%** of the total project costs.

# Funding

## R&D Funding rules

The level of funding awarded for R&D activities will depend upon the type and size of organisation you are

Funding is calculated by project participant

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

- type and size of organisation

The Capital Cost template will calculate your grant request for any capital costs

The lead applicant must check the resulting total grant request meets the eligibility criteria



Organisation or type of activity	Industrial research – R&D costs	Capital costs
Business (economic activity)	Micro or Small – 70% Medium – 60% Large – 50%	Up to 80%
Research organisation (non-economic activity)	Universities – 100% (80% of Full Economic Costs)  Other research organisations can claim 100% of their project costs	Up to 80%
Public Sector Organisation or Charity (non-economic activity)	100% of eligible costs	Up to 80%
Research organisations (undertaking economic activities) Organisations receive funding related to the size of their organisation	Micro or Small – 70% Medium – 60% Large – 50%	Up to 80%

# Consortium

## Worked example – £100 million total cost project

Project costs for 5 partners (2 SME, 1 large business, 1 university and a catapult)

Organisation type	Organisation size	Total eligible project costs	Cost type	Maximum % of project costs which may be claimed as a grant	Requested grant amount	Required match funding contribution
Business 1	Medium	<u>£20,000,000</u>	<u>Capital</u>	<u>80%</u>	<u>£16,000,000</u>	<u>£4,000,000</u>
Business 2	Medium	<u>£23,000,000</u>	<u>Capital</u>	<u>80%</u>	<u>£18,400,000</u>	<u>£4,600,000</u>
Business 3	Large	<u>£55,000,000</u>	<u>Capital</u>	<u>80%</u>	<u>£44,000,000</u>	<u>£11,000,000</u>
Business 3*	Large	<u>£500,000</u>	<u>R&amp;D</u>	<u>50%</u>	<u>£250,000</u>	<u>£250,000</u>
University	HEI (80% FEC)	<u>£500,000</u>	<u>R&amp;D</u>	<u>100%</u>	<u>£500,000</u>	<u>nil**</u>
Catapult	RTO	<u>£1,000,000</u>	<u>R&amp;D</u>	<u>100%</u>	<u>£1,000,000</u>	<u>nil</u>
<b>Total</b>		<b><u>£100,000,000</u></b>			<b><u>£80,150,000</u></b>	<b><u>£19,850,000</u></b>
** 20% FEC not to be shown as a contribution						

Research base costs	£1,500,000
Research participation rate of total eligible projects costs (cannot exceed <u>5%</u> )	1.5%

# Academic partners



# Why Je-S?

We use the Research Councils' Joint Electronic Submission System (Je-S) to collect academic finances.

The Je-S system automates the collection of Full Economic Costs (FEC) based costs from academic partners and tells them exactly what numbers should be used in the application form for their costs.

Also to collect project finance details from non-HEIs (e.g. RTOs) that are claiming they are carrying out academic quality work and want to be funded on an FEC basis.

Using Je-S means that Innovate UK follows standard Research Council guidelines on funding universities and enables Research Councils to easily co-fund Innovate UK projects.

**The Je-S system is completely separate from Innovate UK and we cannot advise on its usage.**



# Project costs – academic partners

Enter the TSB reference number here →

Enter the TSB Contribution column figures from *your* J-eS output document into the project costs section of the application.

Upload the Je-S with council status form as a PDF at the bottom of the screen.

**Any queries, contact Je-S Helpdesk (not Innovate UK)**

- [jeshelp@je-s.ukri.org](mailto:jeshelp@je-s.ukri.org)
- 01793 444164



**TSB reference**  
This number is found at the top of your Je-S form

My REF

**Financial resources**  
Please enter the following costs from the summary of resources section on your Je-S form

Directly incurred	TSB Contribution (please refer to the TSB contribution column)
Staff	11
Travel & subsistence	22
Other costs	33
<b>Subtotal</b>	£ 66
<b>Directly allocated</b>	
Investigators	44
Estates Costs	55
Other costs	66
<b>Subtotal</b>	£ 165
<b>Indirect costs</b>	77
<b>Exceptions</b>	
Staff	88



# Submitting your application



# Checking your finances are complete

## Finances Summary

The following organisations have not marked their finances as complete:

- EMPIRE LTD



[Return to the finances section to complete your finances](#)

This application cannot be submitted unless finances have been marked as complete by all partners.

		Total costs	% Grant	Funding sought	Other public sector funding	Contribution to project
<b>Barry Shaw Experts Ltd</b> Partner	✓	£230,162	70%	£161,113	£0	£69,049
<b>EMPIRE LTD</b> Lead organisation	⚠	£282,655	70%	£197,859	£0	£84,797
<b>University of Bath</b> Partner	✓	£239,114	0%	£0	£0	£239,114
<b>Total</b>		£751,931		£358,972	£0	£392,959

All organisations have marked their finances as complete.

Research organisation participation is no greater than **5%** of the total project costs.

**IFS DOES NOT VALIDATE THE TOTAL GRANT REQUEST**

# Editing a submitted application

test  
Application number: 242  
Competition: 599 Covid de minimis round 2

Awaiting assessment

Application submitted  
[Reopen](#)


Reopen by clicking here

**Terms and conditions**  
You must agree to these before you submit your application.

[Award terms and conditions](#)

✓ Complete

Review and submit

 [Print your application](#)

Remember to press  
'Submit application'

**Terms and conditions**

Open all

Award terms and conditions

✓ Complete +

Submit application

Need help with this service?

[Contact us](#)



## Submit your application early!

- Be aware of the potential for last minute technical issues!
- 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

# Assessment



# How do our assessors assess?

[www.improvementuk.org](http://www.improvementuk.org)

0300 301 4357





# How are successful applications selected for funding?

[www.international.org](http://www.international.org)

0200 311 4457



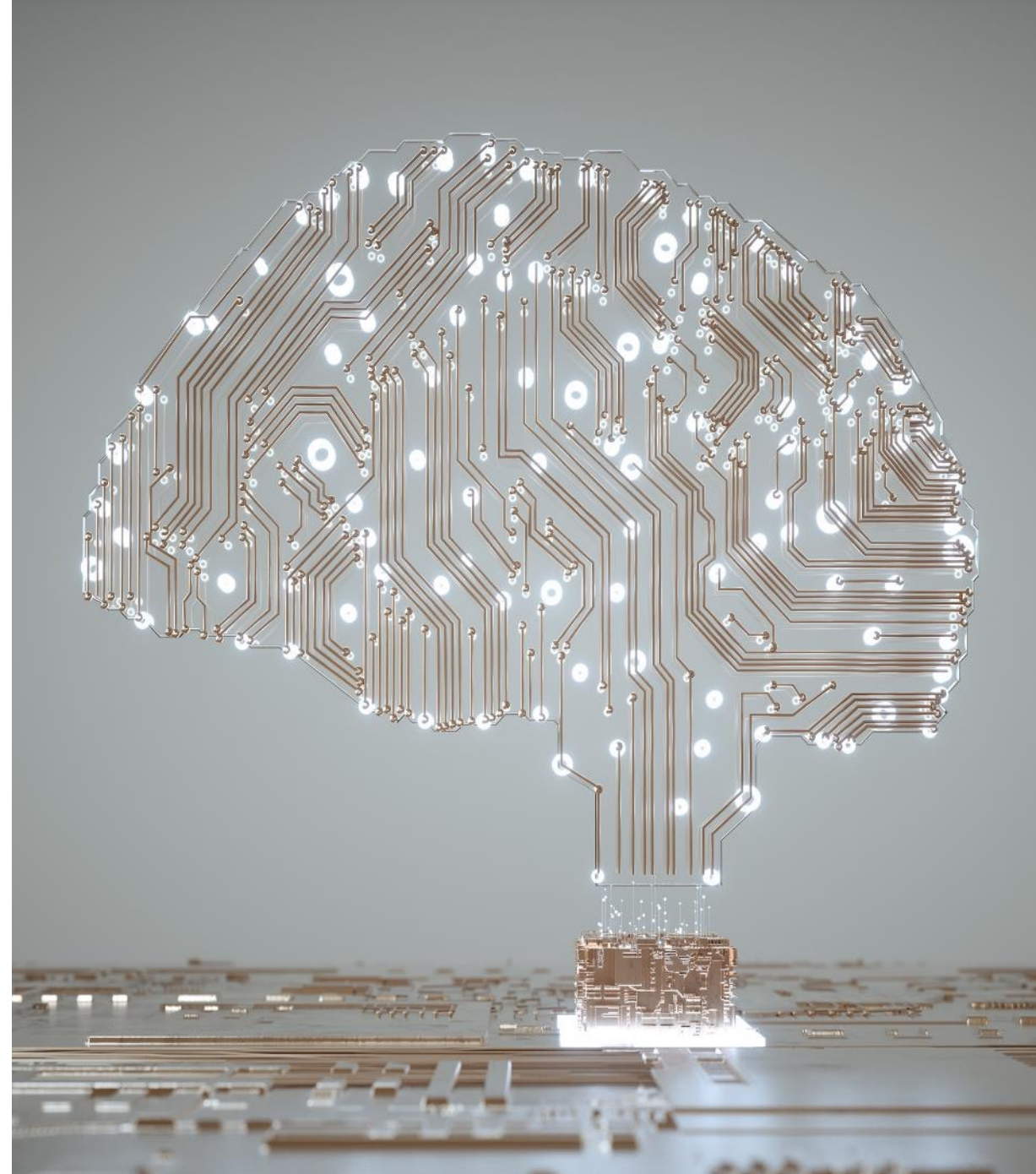


# Interviews – week of 21 November 2022

If you are invited to progress to interview:

- you can bring up to **ten** people to attend the interview
- you will have **45 minutes** to present a maximum of **45 PowerPoint slides**, with no videos or embedded links
- there is a **90-minute** Q&A session led by members of the panel, with a possible **30** minutes additional Q&A
- **you will have an opportunity to respond to the assessor feedback so the panel can read it prior to interview**
- the response to feedback, presentations and presenters' names have to be provided ahead of the interview

# Project setup for successful applicants



# Notification

## If you are unsuccessful in this competition

You can use the feedback from the assessors to develop your idea and apply into another competition that allows previously submitted applications

## If you are successful in this competition

- you will be assigned a Delivery Executive who will guide you through the Project Set Up process
- you will have **7** days to complete the project team, project details and bank details
- you will then have a further **74** days to complete project set up – funding may be withdrawn if this is not completed within this timeframe

**Please ensure all your contact details in the IFS portal are correct and up to date and that you regularly monitor it.**

# Project set up

- All communication will be through IFS.
- Lead applicant must provide collaboration agreements and exploitation plans if applicable.
- Any partners with individual total project costs of **up to** £50,000 must provide evidence with a Statement of Expenditure (SoE).
- Any partners with individual total project costs **above** £50,000 must provide evidence with an Independent Accountants Report (IAR).

# Project delivery

- Claims can only be made for costs incurred and paid between the project start and 31 March 2025.
- Monitoring of the project includes a visit from the appointed Monitoring Officer.



# A great idea can come from anyone

- Diversity in businesses contributes to enhanced performance and commercial success
- We welcome and encourage applications from people of all backgrounds and are committed to making innovation support more visible, accessible, and inclusive.
- We can provide support for people who have a disability or long-term condition and face barriers applying to us
- If you would like any support or advice, please contact Customer Support Service on 0300 321 4357 or [support@iuk.ukri.org](mailto:support@iuk.ukri.org)



# Q and A



HM Government



InnovateUK  
KTN

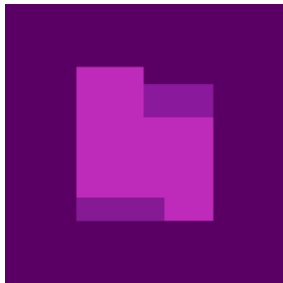
# Contacts

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## Customer Support Services

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

[support@iuk.ukri.org](mailto:support@iuk.ukri.org)



**Innovate UK**

[ukri.org/councils/innovate-uk](https://ukri.org/councils/innovate-uk)



**Innovate UK KTN**

[ktn-uk.co.uk](https://ktn-uk.co.uk)

[Simon.buckley@ktn-uk.org](mailto:Simon.buckley@ktn-uk.org)



**Innovate UK EDGE**

[innovateukedge.ukri.org](https://innovateukedge.ukri.org)



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# Thank you and close



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