



Transport Research and Innovation Grants

ZERO EMISSION FLIGHT

Department for Transport

Application Guidance

Please read this guidance document carefully before completing your application.

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1. Introduction

- 1.1. Connected Places Catapult is working with the Department for Transport on the Zero Emission Flight Infrastructure project, of which a key element is bolstering R&D into the introduction of hydrogen and electric aircraft into airports, complemented by demonstrations of technology that will enable the UK's phased transition towards zero emission flight. Under TRIG: Zero Emission Flight, the DfT will offer grants to commercial businesses and universities who are developing technology in this field.
- 1.2. Under this programme, organisations will be awarded funding of up to £50,000 for projects with a Technology Readiness Level (TRL) between 2 and 5. This means that we are interested in projects that involve both research/feasibility projects or those involving prototyping or operational testing. Innovators developing technology at a higher TRL may be able to get funding to demonstrate it instead through a subsequent phase in the wider ZEFI programme. If you deem your technology to be higher than TRL 5, please email us at zefi@cp.catapult.org.uk and we will be pleased to discuss your project in more detail.
- 1.3. TRIG provides 100% funding and is open to all businesses including micro, small and medium-sized enterprises to support demonstrator projects which will increase accessibility. The competition also welcomes applications from universities and other academic institutions.
- 1.4. The TRIG: ZEF call will be delivered by Connected Places Catapult (CPC). CPC will play an active role in various aspects of the call and will offer successful projects additional market exploitation support throughout the grant funding period.
- 1.5. In alignment with the Department for Transportation (DfT)'s Diversity & Inclusion Strategy (2017), this TRIG Programme seeks to drive accessible and inclusive opportunities in the urban, transportation and mobility sectors. The competition will ask applicants to consider their own Equality, Diversity & Inclusion (EDI) practices in an effort to help foster a future diverse innovation system that enables and inspires improvements in EDI across the United Kingdom.

2. Application Process

- 2.1. In order to apply to this TRIG scheme, you **must** be:-
 - Based in the UK; and
 - a business of any size
- 2.2. Projects must be delivered by the end of February 2022.
- 2.3. The maximum amount of funding available for each project is £50,000. If you are working on a much larger project, you can apply for up to £50,000 from TRIG towards the total budget.
- 2.4. Technologies must be at least at TRL 2.
- 2.5. The DfT will consider proposals from consortia. However, a lead applicant, who will be the grant recipient should be identified.
- 2.6. Previous unsuccessful TRIG applicants are welcome to apply again with improved/ revised bids.
- 2.7. Applicants making more than one application will need to demonstrate an ability to deliver the projects concurrently.

How to Apply

- 2.8. Carefully read this guidance document and the grant specifications document.
- 2.9. Download your application form from the TRIG website and send it (along with any supporting documentation) to zefi@cp.catapult.org.uk.
- 2.10. Only information in your application form will be assessed. No other documentation should be attached to your submission unless this is requested.
- 2.11. Applications must be submitted by midnight on Sunday 1st August 2021. Late submissions will not be considered.
- 2.12. Keep within the maximum word counts noted in each of the sections of the grant application form. Any content that exceeds the word count limit will be disregarded.
- 2.13. Please note that by submitting an application, you accept that any resulting Grant Offer shall be subject to the provisions of this Guidance Document, the terms outlined in the Grant Agreement and the clauses contained within the Grant Offer Letter template.
- 2.14. Applicants requiring assistance in completing the application or alternatives forms of accessing the application should contact the project team as early as possible during the open application process to allow for appropriate support and sufficient time for the completion of the application.

Application Questions

- 2.15. In addition to the information included in the application form, further guidance on what should be included in your response to the application form question is given below. You should also refer to the assessment scoring criteria section as that will help to maximise your score.

Questions 29 & 30 | Equality and Diversity

- 2.16. Promoting equality of access to the competitions and supporting a diverse portfolio of companies is integral to both the Department for Transport and the Connected Places Catapult. We seek to ensure that the organisations we work with are also committed to demonstrating EDI practices in both current and future projects and operations. We recommend all applicants demonstrate their commitment to EDI as best as possible through their own initiatives and alignment with wider DfT policies.

Question 38 | Project Summary

- 2.17. Use this question to give a succinct overview of exactly what your TRIG project will entail.

Question 40 | The Challenge

- 2.18. This question seeks to understand the main motivation for your project. You should clearly describe the challenge you are seeking to address. You must clearly articulate why you consider this to be a high priority challenge for the DfT and why it is a major barrier within the aviation industry.
- 2.19. You should not give full details of your innovation here, however, you should focus on why it is needed. Discuss what the possible unmet need or shortcoming is in the current practice. You should also specify:

- Alignment to the priorities set out in the grant specification
- How the challenge identified is acknowledged to be a significant barrier to the transition to zero emission flight.
- The expected impact the product, service or solution will leverage.

Question 41 | Innovation

- 2.20. Under innovation, in addition to detailing the novel aspect of your technology, please also outline how your project addresses the objectives of accelerating the transition to zero carbon emission flight.
- 2.21. Proposals must be able to deliver a robust assessment of the carbon emission reduction benefits that the research would facilitate.
- 2.22. For this question you need to provide a strong case as to how your innovation meets the challenge set out in the previous question, along with solid supporting evidence. For example, does your solution apply existing technologies in new areas, is it about developing new technologies for existing areas or is it a totally novel approach? Innovative proposals could include:
- Novel ideas, technology, processes, apps, devices, software.
 - Ideas, concepts, or solutions from other sectors that could be applied to improve the aviation industry.

Please include relevant diagrams or figures to clearly explain your concept. You should note what solutions currently exist and how your proposed innovation is different. Your application must provide details of its competitive advantage over any existing solutions. Explain how your solution will advance and improve the current state of play within the aviation industry. Provide evidence of how or why your innovation or solution is likely to work. Supporting evidence should be included where appropriate.

Question 42 | Project Management and Team

- 2.23. Your project plan should be highly credible, providing confidence that the project will be successfully delivered. You should clearly set out your project plan in a Gantt chart. Describe the roles, skills, and relevant experience of the project team, including any sub-contractors.
- 2.24. Please detail the aims and objectives of your project and how you plan to accomplish them. Details of milestones and deliverables shall be provided. Your project should be completed by the end of February 2022.
- 2.25. Clearly describe relevant risks to this project and how you plan to mitigate them. You should consider the limitations (potential and current) enforced by COVID-19 and how this will impact the project. In a wider sense, you should also demonstrate that you will implement the required health and safety procedures within your project.
- 2.26. Please demonstrate how your company is working to support and promote EDI initiatives in the selection of your project team. Should you not demonstrate a diverse and inclusive team, you should outline how you will implement EDI initiatives in the future.¹

¹Applicants must not disclose the personal information of individuals in your response. Responses should highlight the applicant's initiatives to promote and enhance EDI, not discuss the diversity or otherwise of specific team members.

Question 45 | Exploitation – Route to Market

- 2.27. Your application must include an exploitation plan that summarises how you intend to commercialise your product or solution. Your application should demonstrate a clear understanding of your chosen market and be supported by data to support any assumptions about potential market value, size, and access. The project's market opportunity should be comprehensively understood, with a clear and achievable route to market identified.
- 2.28. Projects should have a life beyond the end of the funding offered by this programme. You should be able to show that following successful demonstration of your technology, you have a thorough understanding of your approach to commercialisation and how this will be delivered.

Question 46 | Project Impact

- 2.29. It is very important that you have thought about how you will design and develop your technology in an inclusive way. In this question you should demonstrate how you have taken the needs of different groups into account in designing your solution, as this will be fundamental in achieving commercial success and long-term positive environmental impacts. The score given for this response will not impact the final application score.

Question 48 | Project Finances

- 2.30. You can claim up to £50,000 of your project costs from the TRIG programme. Any additional funding will need to be directly contributed by the applicant.
- 2.31. Projects should demonstrate value for money. All cost information provided should be clearly explained and all rates must reflect fair market value. Sub-contractor and material costs should be justified.
- 2.32. Your finance table should clearly describe what you will spend the funding on and justify why (especially if you intend to claim back any VAT on delivery of research). Your finance projection should:
- Demonstrate value for money e.g. competitive day rates, equipment, services used etc.
 - Justify the costs, showing how they relate to the project plan, and how they reflect fair market value.
 - Include sufficient relevant detail in the cost breakdown for the assessor to understand what the money will be spent on.
 - Clearly explain the staff costs, using reasonable, fair market value rates.
 - Explain any other costs, such as materials.
 - List and justify any sub-contracting costs.
 - Evidence in-kind contributions to the project.
- 2.33. If you expect to pay VAT during the delivery of the research, (e.g. for consultancy/ sub-contracting charges, material costs and other expenses), and are unable to recover from HMRC, you must ensure that the cost of these VAT payments is included in question 5 of your Grant Application Form. It is important to note that grant funding is not payable to you for any costs during the delivery of the research which may incur VAT which you are able to recover back from HMRC.
- 2.34. Grant payment is staged. Payments will be made quarterly in arrears following a formal quarterly review where evidence of expenditure will be provided.

How your application is assessed

- 2.35. After the deadline, only applications that meet the eligibility criteria and scope of the competition will be assessed. The Department reserves the right to declare applications as out of scope.
- 2.36. Applications that progress to the assessment stage will be reviewed by at least three expert assessors from DfT, the Connected Places Catapult and partner organisations.
- 2.37. Assessors with a broad technical knowledge across different areas of aviation and technology will mark your application. You should therefore write clearly in layman's terms, avoiding acronyms and obscure jargon.
- 2.38. This scheme will operate on an open and transparent basis; proposals will be assessed against the assessment scoring criteria, detailed in this document.
- 2.39. Following the initial assessment, a number of applicants will be shortlisted for interview (also called a Project Exploration Meeting). The final funding decisions will be made upon completion of all Project Exploration Meetings.
- 2.40. The selection committee will be asked to review your commitment to wider EDI initiatives through your responses to questions 29 and 30. Although scored, these questions are not weighted and will not impact the final application score. Your responses will be considered as a long-term impact of any funding given to your proposal. Where applications are of a similar quality, a proposal which scores higher and does more to evidence a positive EDI approach will be funded over one where there is weak or negative evidence.

Notification of assessment outcome

- 2.41. If you are the lead applicant, you need to inform the other collaborators and partners about any funding decisions.
- 2.42. Only applicants that progress to the assessment stage will be given a breakdown of the scores achieved for each section of the application form.
- 2.43. The Department reserves the right to declare applications unsuccessful and out of scope.
- 2.44. Once the final funding decisions have been made, we regret that we are unable to offer follow up meetings with unsuccessful applicants.

Successful applications

- 2.45. You will be sent a conditional grant offer letter and No Subsidy Declaration that you must sign and return by the date requested.
- 2.46. Any additional finance documentation that you are asked for will need to be completed and returned within stated timelines.
- 2.47. There will be a project initiation (or kick-off) meeting within two weeks of awarding the grant to discuss the details of the project. You will be asked to discuss your application and how you will deliver the project effectively. You must be able to satisfy the Department that your

methodology is likely to deliver the results sought. The Department shall have the right to request any reasonable changes to the project.

3. Project Reporting

- 1.1. You will be expected to regular progress reports as required during the course of the project, with evidence of the achievement of key deliverables.
- 1.2. Key findings/first draft of the final report will be delivered two weeks prior to project completion. You will be given feedback on the report and may be asked to make changes before the final report is due (upon completion of the project).
- 1.3. The final report upon completion of the project should be no more than 20 pages long, excluding references or data tabulation annexes. It will be comprehensive and succinct. Final payment of the grant will be on condition of a high-quality report which clearly sets out:
 - The problem, issue or challenge;
 - The solution proposed;
 - The work conducted and how this advances the solution;
 - The project findings;
 - Next steps to deploy the solution, if proven.
- 1.4. The final project report must cover:
 - Executive summary, including project outcome
 - Aim of the project
 - Objectives of the project, including the key challenge being addressed
 - Outline of the concept
 - How the idea was generated (e.g. is it an application from another industry?) and any intellectual property rights
 - The design of any trials, including end-user involvement
 - Analysis and findings
 - How the product or service was progressed through the TRL levels throughout the period covered by the grant funding
 - Practical applications of the concept to the UK transport system (including costs)
 - Next steps and routes to market
 - Long-term commitment to implementing EDI practices in both the company and in your relevant sector
 - Conclusions
- 1.5. The final report will be disseminated across the Department, key stakeholders and made publicly available.
- 1.6. Along with the first draft of the final report, the DfT will require a one-page summary of your project, which will form an official TRIG case study. This will be released publicly.
- 1.7. All reports should be written and presented to a professional standard and suitable for non-specialists, with all acronyms and unavoidable technical language clearly explained.

4. Technology Readiness Level

- 1.8. TRIG is designed to support the development of initial prototypes, proof of concept or feasibility studies that demonstrate an innovative solution challenges within the aviation sector.
- 1.9. The TRIG funding route is intended to support projects that are between 2 and 5 on the Technology Readiness Level (TRL) scale. The aim of the funding is to develop technology by proving concepts, applications or use cases and/or creating and testing prototypes.

2. Funding Rules

2.1. Subsidies

The DfT supports investment in research, development and innovation in transport accessibility. Subsidy rules apply to grant schemes like TRIG. In principle, subsidies are not allowed under the UK's various trade arrangements with other countries. However, some subsidies are beneficial to the economy and support growth and other policy objectives. Subsidies can be given to support a wide variety of activities including research and development, environmental protection and aid for small to medium-sized businesses. The subsidy rules allow for aid to be granted which is necessary to deliver growth and other important objectives.

2.2. No subsidy

In order to minimise distortion of competition the EU-UK Trade and Cooperation Agreement sets limits on how much assistance can be given to organisations operating in a competitive market. This allows an organisation to receive up to 325,000 Special Drawing Rights (approximately £344,600) of state support over a rolling 3 fiscal year period without a subsidy being deemed to have been granted. You will be asked to declare any other public aid which your enterprise and any enterprises linked to it may have received during your current and previous two fiscal years so that we can ensure that any grant support given to you under this scheme does not constitute a subsidy.

Public aid includes not only grants but also assistance such as free or subsidised consultancy services, marketing advice etc.

3. Intellectual Property Rights

- 3.1. The ownership of any intellectual property to emerge from the project will reside with you. However, you will be expected to agree that the Department may disseminate any information, know-how, system or process learned from or created as part of the project among persons or bodies who have responsibility for similar projects in Government.
- 3.2. You will be expected to agree that such persons may share and use freely all such information, know-how, system or process for their own purposes.
- 3.3. We want successful TRIG projects to reach the market as new solutions and steps will be taken to prevent any disclosure of intellectual property which might damage its value.

- 3.4. The funding agreement will also require you to grant a licence to the Department under section 91(3) of the Copyright Designs and Patent Act 1988 in relation to the future copyright in works funded in whole or in part by the grant. The licence will be non-exclusive and granted without provision for the payment of royalties for the full period protected by copyright in the works. This will allow the Department to copy, issue or adapt any such works for its own purposes.

4. Finance Summary

- 4.1. Grant payment is staged. An up-front payment of 80% of the total budget will be awarded to enable the start of the project. The remaining 20% of the grant will be awarded upon completion of the project once evidence of expenditure and successful demonstration of technology has been provided. Your evidence of expenditure should be signed and authorised by the highest financial authority in the company. Please note that this payment structure is only a guide and may be altered according to the demands of your project.
- 4.2. Upon completion of your project, you will be expected to complete a statement of grant usage form to explain the costs incurred. This should detail staff time utilised, cost of materials, sub-contracting charges, travel expenses and other costs. You must provide receipts for all claims. Only economy-class travel claims will be accepted.
- 4.3. You will be responsible for maintaining detailed records and documentation of the costs incurred relating to the grant to demonstrate that they comply with state aid rules and are eligible under the grant. Please note that we may employ an auditor to investigate the eligibility of costs and would therefore require access to your accounts.
- 4.4. The purchase of the following would be eligible; staff and/or consultancy, materials, equipment, and laboratory/testing costs. In addition, you are able to add costs under the category of 'other'. These will be agreed if they are shown to be fully justifiable and represent value for money.
- 4.5. Individual items costing £20 or less do not require a receipt. However, the total cost of non-receipted items should not exceed £100.
- 4.6. Rates for staff time should already include some overhead costs and therefore no further overheads charges should be made. However, the salary rates must be justified and appropriate, reflecting market values.
- 4.7. The invoices should be based on costs only. There should no profit margins added to the costs. The grant is paid to research a concept or technology, not provide profit. Therefore, the only claim that can be made is for costs incurred in the research of this concept.
- 4.8. Only costs incurred between project start and end dates will be paid. All claims made in the statement of grant usage form will be closely scrutinized.

VAT

- 4.9. Grant payments fall outside the scope of VAT as this is deemed as income from non-business activities and you do not return anything for this funding therefore, VAT should not be added to any invoices for grant payments.
- 4.10. If you expect to pay VAT during the delivery of the research, (e.g. for consultancy/sub-contracting charges, material costs and other expenses), and you are unable to recover VAT

from HMRC, you must ensure that the cost of these VAT payments is included in the of your Grant Application Form.

- 4.11. Any VAT payment during delivery of research that is not recoverable from HMRC and not identified in the finance section of the Grant Application Form will not be paid by the Department.

5. Dates and Deadlines

- 5.1. Please note the dates and deadlines for the competition below. These are indicative timings. We will adhere to this schedule as best as possible. The closing date for applications is fixed and will be Sunday 1st August 2021.
- 5.2. Applications submitted after the deadline will not be considered. Extensions will not be granted under any circumstances.

Competition opens	30 th June
Application support webinar	12 th July
Availability of webinar recording	12 th July
Competition closes (application deadline)	1 st August (midnight)
Notification to shortlisted applicants	20 th August
Project Exploration Meetings (interviews)	w/c 23 rd August
Notification and feedback provided to unsuccessful applicants	By 31 st August
Grant offer letters issued	31 st August
Acceptance of grant (return signed Grant Offer Letter)	3 rd September
Projects start	Early September

Project reporting dates and deadlines

- 5.3. An indicative project reporting schedule is given below. This is subject to change on a case by case basis.
- 5.4. Where progress deviates from agreed schedule, DfT may monitor projects more closely to help maximise the success of individual projects.

Milestone	Deliverable	Details
Agreed points throughout the project	Progress reports	You will be expected to regular progress reports as required during the course of the project,

		with evidence of the achievement of key deliverables.
First draft of final report (two weeks prior to project completion)	Draft of final report and one-page summary delivered to DfT	First draft of final report should be submitted containing outline results, and complete textual and graphical content. One-page summary (for public release) will contain key achievements.
Project completion	Final report and final one-page summary	Agreed final report incorporating comments and suggestions.
Project completion	Statement of Grant Usage	To be submitted to the Catapult

6. Assessment Scoring Criteria

- 6.1. This section contains the assessment scoring criteria for applications. You should refer to this section to help them write good quality applications and to maximise your score.
- 6.2. Applications will be assessed to ensure you have all the appropriate skills and expertise to successfully carry out the project.
- 6.3. The scoring guide below and the assessment criteria give indicative marks. Assessors are free to use the full range up to the maximum score per question.
- 6.4. Should there be several projects with the same scores, preference will be given to those projects receiving the higher scores for question 2, demonstrating a high level of innovation.
- 6.5. The applications will be marked on their responses to the five weighted questions outlined in the table below.
- 6.6. For each of the five weighted questions, there is a maximum score of 10 available. Scores will be calculated using the assessment factors listed under each question.
- 6.7. In addition to the five weighted questions, applications will be marked on their responses about EDI, however the EDI scores will not affect the overall score of the application. There is a maximum score of 5 available whereby 0 represents no established EDI initiatives/strategy and 5 represents comprehensive and established EDI initiatives/strategy.

Questions	Weighting Factor
<p>The Challenge</p> <p>What is the challenge being addressed by the proposed project?</p> <p><i>Assessment factors:</i></p> <ul style="list-style-type: none"> • Challenge identification and validation • Challenge alignment to the priorities set out in the grant specification 	30%
<p>Innovation</p> <p>How innovative is your proposal?</p> <p><i>Assessment factors:</i></p> <ul style="list-style-type: none"> • Description of innovation • Understanding and evidence of how the proposal is different to existing products/services 	30%
<p>Project Management</p> <p>What is your project plan to deliver the project? What are the relevant skills and expertise of the team?</p> <p><i>Assessment factors:</i></p> <ul style="list-style-type: none"> • Robust project planning, including clear deliverables and milestones • Understanding of key risks and sound management plans • Provision of the required expertise and skills 	10%
<p>Exploitation - Route to Market</p> <p>How do you intend to bring your product or service to market following successful demonstration?</p> <p><i>Assessment factors:</i></p> <ul style="list-style-type: none"> • Market understanding • Comprehensive exploitation plan with achievable routes to market 	20%

<p>Project Finances</p> <p>How much will the project cost to deliver and how will this be spent to ensure value for money?</p> <p><i>Assessment factors:</i></p> <ul style="list-style-type: none"> • Justified project costs • Value for money • Resource costs 	<p>10%</p>
<p>Equality & Diversity</p> <p>How does the company support and embed EDI initiatives in both current and future projects and/or operations?</p> <p><i>Assessment factors:</i></p> <ul style="list-style-type: none"> • Existing company EDI initiatives and/or practices • Consideration in the selection of project team • Future commitments to further strengthen EDI practices 	<p>0%</p>
<p>TOTAL</p>	<p>100%</p>

7. FAQs

1. How much funding is available?

This TRIG programme will fund projects up to £50,000 each.

2. When will payment be made?

Grant payment is staged. An up-front payment of 80% of the total budget will be awarded to enable the start of the project. The remaining 20% of the grant will be awarded upon completion of the project once evidence of expenditure and successful demonstration of technology has been provided.

3. Can we add some profit margin?

No. The grant is paid to research a concept or technology, not provide profit. These are early stage grants to help to provide proof of concept. Therefore, the only claim that can be made is for costs incurred during the research process.

4. What is state aid?

Please refer to section 5 of this guidance regarding state aid, which is now referred to as 'Subsidy'.

5. What can I include in the project finances?

The following categories of costs are eligible within this programme:

- Daily salary rates for named employees
- Consultancy or subcontracting costs
- Material costs
- Other expenses (should be specified in proposal)

Please note that projects can be valued at over £50,000. In this case, applicants will need to contribute any funding that exceeds the £50,000.

6. What are the rules on VAT?

Grant payments fall outside the scope of VAT as this is deemed as income from non-business activities and you do not return anything for this funding therefore, VAT should not be added to any invoices for grant payments.

If you expect to pay VAT during the delivery of the research, (e.g. for consultancy/subcontracting charges, material costs and other expenses), and you are unable to recover VAT from HMRC, you must ensure that the cost of these VAT payments is included in your Grant Application Form.

Any VAT payment during delivery of research that is not recoverable from HMRC and not identified in the Grant Application Form will not be paid.

7. Should overheads be included in the salary rates or shown separately?

Salary rates should already include some overhead costs and therefore there should be no need to add further overheads.

Salary rates must be justified and appropriate, reflecting market values. Rates will be judged on the level of staff expertise, where they are located and compared to market rates. The panel will assess whether the number of staff days on offer will deliver the proposed solution and whether the number of total staff days offered signifies value for money.

8. Do I need to keep receipts of my expenses?

Yes, you will need to submit relevant receipts/invoices for expenses as evidence of project costs. Before final grant payment is made you will be required to supply receipts for individual items **costing £20** or more. The total cost of non-receipted items should not exceed £100.

Grant beneficiaries will be required to explain costs incurred including staff time and supply receipts as outlined above.