



Department
for Transport



Transport Research and Innovation Grants
ZERO EMISSION FLIGHT
Department for Transport

Grant Specification

This document outlines the scope of this grant programme. Please read this carefully before completing your application.

Introduction

In November 2020 the Government published its [Ten Point Plan for a Green Industrial Revolution](#), which sets out how the UK's path to net zero will be accelerated. In the plan, the Government committed to investing in research and development into the infrastructure upgrades required at UK airports for the introduction of battery and hydrogen fuelled aircraft.

Connected Places Catapult is working with the Department for Transport (DfT) on the Zero Emission Flight Infrastructure (ZEFI) 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. The Transport Research and Innovation Grants: Zero Emission Flight (TRIG: ZEF) Programme will offer grants of up to £50,000 to innovative businesses and universities developing technology into the areas of interest set out in this grant specification. We anticipate funding at least 12 projects through this call however the exact funding allocated will be determined by the level of interest, as well as the range and quality of applications received.

Please note that this grant can be used to contribute to a larger project, in instances where the bidding organisation plans to self-fund the remaining costs.

Eligibility

TRIG: ZEF provides 100% funding and is open to all businesses of any size, universities and RTOs. The Department is seeking genuinely innovative solutions and would welcome bids from organisations outside of the aviation sector or consortia that can see a role for their technologies, tools, and approaches in delivering benefits in this space.

In order to apply to this scheme, you must be:

- Based in the UK or have a UK registered office; and
- a business or university of any size

The Department seeks to drive accessible and inclusive opportunities. Applicants will be asked to reflect on their own Equality, Diversity & Inclusion (EDI) practices and demonstrate an alignment with Department policies.

Please also note:

- We will consider proposals from consortia. However, a lead applicant, who will be the grant recipient, should be identified.
- Previously unsuccessful applicants to other TRIG competitions are welcome to apply.
- Applicants making more than one application will need to demonstrate an ability to deliver the projects concurrently.

Equality, Diversity and Inclusion (ED&I)

DfT seeks to drive accessible and inclusive opportunities. Applicants will be asked to reflect on their own Equality, Diversity & Inclusion (EDI) practices and demonstrate an alignment with DfT policies.

Technology Readiness Level (TRL)

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 research/feasibility as well as those involving prototyping or operational testing. Innovators developing technology at a higher TRL may instead be able to get funding to demonstrate it through a subsequent phase in the wider ZEFI programme in 2022. 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.

Competition Priorities

All proposals must address the objective of accelerating the transition to zero carbon emission flight. TRIG: ZEF is comprised of three separate priority areas, as outlined below. Projects must address one or more aspects of these areas. We are looking to fund a balanced portfolio of projects across all three of these areas and to support large commercial, regional and General Aviation airfields prepare for the introduction of new aircraft types.

Priority area 1: Hydrogen storage, handling, aircraft refuelling/defueling, distribution, and associated technologies.

- Projects may consider liquid and/or gaseous hydrogen.
- Projects considering regulation and/or safety aspects, such as safety zones, leaks, ignition and incident response including firefighting, are also in scope.
- Technology standardisation and interoperability with current and future refuelling infrastructure, including solutions for congestion at airports, are also in scope.

Priority area 2: Electric charging, storage, handling, batteries, electric distribution, and associated technologies.

- Projects may consider onboard battery charging and/or battery swap systems.
- Projects considering regulation and/or safety aspects, such as safe charging during passenger boarding/deplaning and incident response including firefighting, are also in scope.

- Technology standardisation and interoperability with current and future refuelling infrastructure, including solutions for congestion at airports, are also in scope.

Priority area 3: Research into future demand scenarios for airside use of green hydrogen and electricity at UK airports.

- Projects may consider future demand scenarios for aircraft and/or airside vehicles.
- Projects considering the impact of this demand on the energy system are also in scope.

Out of Scope

Proposals focussed upon aircraft manufacturing, the production of hydrogen or electricity for non-aviation usage and/or surface access transport to airports are out of scope for this call.

If you are unsure about whether your project would fall within the scope of this competition and would like to discuss it with us, please contact zefi@cp.catapult.org.uk.

Criteria

Project proposals should clearly highlight the innovative and novel aspects of their proposed solution. The solution could well be a completely novel idea or approach or could see existing products being used in innovative ways outside of their original intended use. Therefore, approaches or innovations from other areas, applied in a novel way, are also of interest. All applications must be innovative and focussed on science, engineering, or technology to solve a challenge of introducing zero emission aircraft to airports. Innovative modelling or the application of existing modelling techniques, outside of their original intended use, to address priority area 3 will be accepted.

Projects supported through this funding call must deliver a robust assessment of the carbon emission reduction benefits that research would facilitate. Proposals will also need to clearly demonstrate the following:

- What zero emission flight challenge(s) the innovation is aiming to solve.
- Evidence of state-of-the-art innovation being carried out in practice.
- That the team has the skills and expertise to deliver the project plan.
- Potential for delivery of tangible sustainable and/or commercial opportunities for the UK.