



Future Fuels for Flight and Freight Competition

Guidance Notes for Applicants

This guide provides information on applying to the Future Fuels for Flight and Freight Competition (F4C). This document should be read in advance of submitting any application, and should be referred to throughout the F4C process. If applicants have any questions about these guidelines they should send these to F4C@ricardo.com.

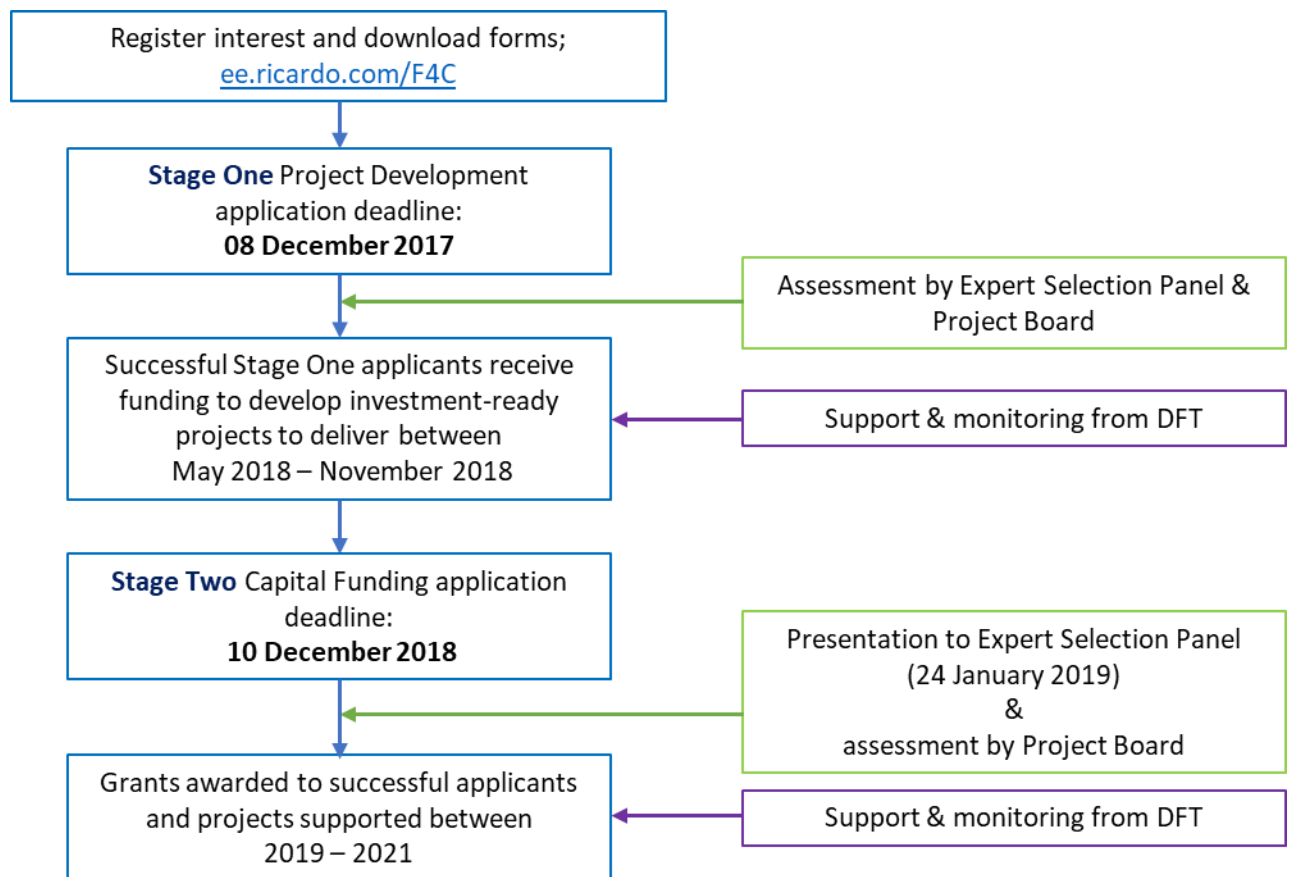
The F4C was launched on the 27th April 2017 by the Department for Transport (DfT) to promote the development of an advanced low carbon fuels industry within the UK, including supplier capabilities and skills in relevant technologies, while maximising value for money for the taxpayer. The F4C will provide up to £20 million in capital grant funding over 33 months (2019-21) for major demonstration projects providing transformative and innovative solutions. The F4C will also provide up to £2m of Project Development Funding in 2018 to support the development of proposals and will therefore operate in two stages; Stage One (Project Development) and Stage Two (Capital Funding).

Stage One is open to applications until 08 December at 1200 hours. Application forms are available on the scheme website: ee.ricardo.com/F4C.

Those interested in the F4C should register interest by emailing F4C@ricardo.com to ensure you are kept up to date as the scheme progresses.

The following diagram outlines the steps within the F4C, from initial interest to final projects.

Figure 1: Stages of the F4C



You must pass Stage One to be eligible for Stage Two. Stage One is a detailed application stage where your project will be reviewed by the Expert Selection Panel. This is an essential step of the competition process.

The Guide

This guide has four sections (it is vital to read and understand all four sections ahead of a Stage One application):

- **Section A** - Background to the F4C.
- **Section B** - Details of the F4C, its objectives and eligibility criteria.
- **Section C** - Guidance for Stage One applications.
- **Section D** - Guidance for Stage Two applications, including Stage Two eligibility criteria.

Please see ee.ricardo.com/F4C for supplementary information such as Frequently Asked Questions and details of how to register and receive updates about the bidder event taking place on 21st September 2017.

SECTION A: THE COMPETITION BACKGROUND

This section sets out the background to the F4C, and the rationale for this new initiative.

Background

The UK has challenging goals for reducing greenhouse gas (GHG) emissions. In transport, the electrification of vehicles will have a key role, but some sectors such as aviation and heavy goods vehicles (HGVs) currently have few alternatives to using liquid fossil fuels.

Relative to first-generation biofuels (those made from traditional food crops), advanced biofuels (from biogenic wastes & residues), fuels from renewable electricity and waste-based fossil fuels could deliver greater GHG savings without raising concerns around food security and land use change. However, conversion routes to diesel or jet are yet to be commercialised, and face high upfront capital costs and investment access barriers which are unlikely to be overcome without government intervention.

In the UK, the DfT have encouraged the deployment of waste-derived advanced biofuels through double counting under the Renewable Transport Fuel Obligation and via DfT's Advanced Biofuel Demonstration Competition (ABDC), which is providing £20m of matched grant funding to industry. Whilst these demand and supply-side approaches have been successful at bringing forwards waste-derived advanced biofuels, neither initiative has been focused on producing advanced low carbon fuels for aviation or HGVs.

In late 2016, DfT consulted on creating a set of RTFO sub-targets to 2030 for 'development fuels', and extending RTFO eligibility to cover aviation fuels plus renewable fuels of non-biological origin, to create improved UK market conditions for many of the advanced renewable fuel routes.

To complement and build on these demand-side policy changes, DfT are now launching a new competition to leverage new private sector investment and support the establishment of advanced low carbon fuel demonstration facilities in the UK, supplying fuels for aviation and HGVs. A competition for government match-funding of demonstration plants addresses the fundamental barrier that developers face – access to capital – while also supporting the activity most likely to generate wider economic benefits and in which the UK has existing strengths: demonstration of conversion technologies.

An independent Feasibility Study¹ commissioned by DfT from E4tech/Ricardo-EE/ARUP/AECOM indicated that early and decisive action could enable the UK, with our research and engineering expertise, to claim a share of a global market that is set to be worth £3bn a year by 2030. By 2030, the development of a domestic industry could be worth over £400m a year (Net Value Add) to the UK economy, and the development of exportable UK expertise in design and conversion technology could also be worth an additional £195m a year (Net Value Add). Up to 9,800 highly skilled jobs could be

¹ See the competition website to download a copy of the feasibility study for the new Demonstration Competition (www.ee.ricardo.com/F4C).

created in the UK, potentially in regions in need of regeneration. It would also reduce our reliance on imported fuels by boosting UK fuel security.

In order to ensure the new Competition achieves its stated objectives, it is necessary to clearly define the scope of the Competition and provide criteria to assess the eligibility of proposed projects. This is discussed in Section B.

SECTION B: THE FUTURE FUELS FOR FLIGHT AND FREIGHT COMPETITION

This section provides an outline of the F4C, its objectives and eligibility criteria.

Overview

The F4C is open to a range of applicants including private sector companies and consortia.

The **purpose** of the F4C is to promote the development of the UK advanced low carbon fuels² industry, including supplier capabilities and skills in relevant technologies, while maximising value for money for the taxpayer. The F4C is focused on those fuels capable of tackling the hard-to-decarbonise aviation and HGV sectors.

The F4C is a two stage scheme. Stage One will assess competitive applications and provide six months of Project Development Funding, if needed, to successful projects. Stage Two will then assess competitive applications for the capital grant funding awards, which will be provided between 2019 and 2021.

The F4C will be delivered under State Aid rules for Article 41³, which state that the maximum single award is EUR 15 million per project⁴. For Stage 2 DfT has set the maximum aid intensity at 50% of total capital costs.

Objectives

The **key objectives of the competition** are:

- To increase domestic production of advanced low carbon fuels capable of tackling emissions from the hard-to-decarbonise aviation and HGV sectors in pursuit of long-term UK decarbonisation targets.
- To stimulate investment and create jobs through the development of a prosperous domestic industry.

Our **objectives for projects within the competition** are:

- **Technology demonstration:** deliver meaningful technical, route to market, and/or supply chain innovation.
- **Fuel production:** produce a sufficient quantity of fuel for testing or sale at a scale appropriate for the fuel type.
- **Commercial potential:** have a clear strategy for commercialising the technology and the products, demonstrating the potential for significant value to the UK.
- **Emissions reduction:** demonstration of significant greenhouse gas reduction vs fossil fuel, and the highest standards of sustainability.

² This Competition is aimed at supporting advanced low carbon fuels including advanced biofuels, and renewable and non-renewable fuels derived from waste feedstocks of non-biological origin.

³ Article 41 Investment aid for the promotion of energy from renewables

⁴ The State Aid ceiling is expressed in Euros. This can be equated to pounds sterling by using the rates shown on the EU website: http://ec.europa.eu/budget/inforeuro/index.cfm?fuseaction=currency_historique¤cy=GBP&Language=en

- **Project execution:** bring together a team with the necessary expertise and experience to deliver the project according to its objectives.

Eligibility Criteria

In order to be eligible to apply to Stage One of the F4C, a project must comply with the following minimum requirements:

Technology scope

- The main output(s) from the project must be fuel that is capable of being used in **aviation or HGVs**.
 - Ideally, this would involve fuel that can be used immediately without engine modifications, meeting the relevant diesel or jet fuel specifications whether unblended or blended with fossil fuels.
 - However, bids involving fuels that do not meet current fuel specifications will also be considered, provided that there is clear evidence of the fuel's future commercial potential and a credible pathway to decarbonising aviation or HGVs sectors.
- The technology involved must be at the appropriate Technology Readiness Level⁵ (TRL):
 - The technology must already be at least TRL 5 (pilot plant), and must successfully attain at least TRL 6 (small demonstration scale) by the end of the project.
 - The technology must not already be at TRL 8 or 9, i.e. already commercialised⁶.

Feedstocks and sustainability

- Feedstocks used must be wastes or residues, or intermediate fuels derived from wastes and residues⁷, and have a regard to the waste hierarchy, i.e. not taking feedstock supplies from existing more environmentally beneficial uses.
- The advanced low carbon fuel supply chain (from feedstock to vehicle) must have a clear path to achieving a GHG reduction of at least 70%⁸ in comparison to a reference fossil fuel, once the technology is scaled-up and commercialised.
 - It is not a requirement that the demonstration plants (TRL 6-7) funded under F4C achieve >70% GHG savings, because of the likely sub-optimal sizing or lack of process integration within such plants⁹. However, if a first commercial plant (TRL 8) is proposed for F4C funding, this project must satisfy the >70% GHG savings threshold. The GHG savings requirements are summarised in the following flowchart:

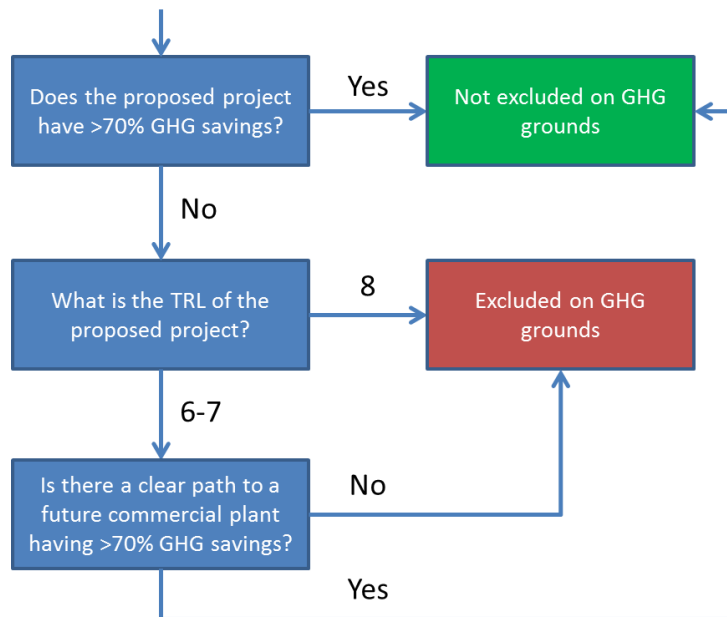
⁵ Technology Readiness Level (TRL) is a relative measure of the maturity of evolving technologies on a scale of 1 to 9. Full TRL definitions are given in Appendix A, with current TRLs for a large number of technologies given in the Competition Feasibility Study.

⁶ This is because the competition is focused on demonstrating new conversion technologies. For example, this criterion excludes renewable electrolytic hydrogen, biomethane from anaerobic digestion, and FAME or HVO from waste oils & fats as F4C fuels.

⁷ Since electricity is a process energy input and not a feedstock, the use of renewable electricity for producing renewable fuels of non-biological origin will not be excluded on waste/residue feedstock grounds.

⁸ 70% is the GHG savings threshold (versus a new fossil fuel counterfactual of 94 gCO_{2e}/MJ) currently proposed for new installations completed after 2020 in the EU's forthcoming RED II. If confirmed and transposed into UK regulation, the RED II will apply from 2021 to 2030 – further details are available from: http://ec.europa.eu/energy/sites/ener/files/documents/1_en_act_part1_v7_1.pdf

⁹ However, TRL 6-7 projects that are able to achieve this threshold will be assessed more favourably by DfT than those that do not, and once producing fuel those projects that achieve the threshold will also be able to apply for development fuel RTFCs, under the recent consultation proposals, to gain additional revenues. Those TRL 6-7 projects that do not achieve the GHG threshold will have to evidence a clear path to achieving the GHG threshold for their future commercial-scale plants, plus evidence their ability to fund the demonstration activities without receiving RTFC revenues.



Project details

- The demonstration-scale plant funded under the Competition should ideally complete commissioning¹⁰ no later than November 2021¹¹.
- The demonstration-scale plant funded under the Competition must be located in the UK.
- Under State Aid Rules, the amount of grant indicated for the Stage Two project must be below the maximum grant limit of EUR 15 million¹².

All applicants to Stage One should note that Stage Two has an additional set of eligibility criteria that must be met by the time of the Stage Two application (please see section D for more details).

Appropriate technologies

The following (non-exhaustive) list of conversion routes are **likely** to meet the fuel and TRL eligibility criteria given above:

- Gasification, pyrolysis and hydrothermal liquefaction based routes with upgrading to diesel or jet
- Routes from waste/residue-derived sugars to hydrocarbons, with upgrading to diesel or jet
- Routes based on production of waste/residue-derived alcohols, with upgrading to diesel or jet
- Gasification, pyrolysis, hydrothermal liquefaction or aqueous phase reforming based routes to hydrogen or methane, with direct use in HGVs

¹⁰ Certified acceptance of commissioning is the formal acceptance, following an agreed testing programme, that the installation will have adequate performance and output. This will normally coincide with the owner's take-over of the installation for commercial operation from the construction contractor.

¹¹ If the November 2021 deadline cannot be met a robust case must be made to request additional time and this must be evidenced in the project plan. DfT reserves the right to score projects which plan to complete commissioning by the deadline of November 2021 higher.

¹² Any grant awarded under Article 41 in Stage One must be deducted from the maximum available in Stage Two.

- Renewable fuels of non-biological origin (RFNBOs), using catalysis of renewable hydrogen and a waste CO₂ source, to produce a non-oxygenated fuel for use in HGVs, or further upgraded to diesel or jet.

Any other routes that fulfil the eligibility criteria for fuel type and TRL could also be considered, as the onus remains on the applicant to prove their eligibility against these two criteria.

Indicative Timetable

The indicative timetable for calls under the F4C is:

27 April 2017	Competition announced
29 August 2017	Competition launched
08 December 2017, 1200 hours	Application deadline for Stage One applications
March 2018	Announcement of proposals selected for Project Development Funding
30 November 2018	End of Stage One Project Development Funding
10 December 2018	Application deadline for Stage Two applications
Spring 2019	Announcement of winning Stage Two projects
2021	End of funding period

Questions and points of clarification

Questions and points of clarification about the F4C should be emailed to F4C@ricardo.com. The questions and responses will be published on an FAQ page available on ee.ricardo.com/F4C.

Prospective bidders' event - 21st September 2017

DfT will be hosting an information event in London for prospective bidders where there will be an opportunity to find out more about the Competition process and ask any clarification questions that interested parties may have.

Bookable slots will be available with the Competition Delivery Partner after the main presentation to discuss any project-specific questions that you may have, and for the Competition Delivery Partner to offer any advice on your application. DfT is committed to taking a collaborative approach to ensure high quality applications to both Stage One and Stage Two of the competition.

If you would like to attend, please register your interest by contacting F4C@ricardo.com, or visiting the competition website at ee.ricardo.com/F4C to complete the registration form. You will then receive all updates about the bidders' event time, venue and agenda.

SECTION C: GUIDANCE FOR STAGE ONE APPLICATIONS

This section sets out the processes and actions for applicants during Stage One.

Stage One Overview – Project Development

The **purpose** of the Project Development Funding is to support development towards a full project proposal and application for Stage Two funding.

Project Development Funding

Project Development Funding will be available from June 2018 to November 2018 to help support the development of potential projects to the main F4C. Stage One applications for funding should be focused on the first stages of delivery, and proposed outputs and projected project plans for the final Stage Two project should be *at least* in an initial form at this stage.

It is the initial responsibility of the applicant to identify what activities need to be funded ahead of Stage Two, though the Competition Delivery Partners will be available to provide guidance and support. DfT does expect applicants to use the Project Development Phase to work on co-funding for Stage Two, as this will be a key point of assessment in judging Stage Two applications.

Project Development Funding is expected to be delivered either as *de minimis* funding, or, if applicants wish to apply for more than the *de minimis* maximum, as funding under Article 41: the State Aid Block Exemption for investment in the promotion of energy from renewables. Applicants are able to select which route of funding is most appropriate for the size of Project Development grant being sought from DfT.

The ***de minimis* exemption** permits aid of up to EUR 200,000 to an individual recipient (from all sources) in any rolling three-year fiscal period. If you are receiving any other *de minimis* aid from another source, you must declare this as part of your application in Section 4 of the application form.

As the applicant, it is your responsibility to ensure that any award that may be provided does not breach the EUR 200,000 ceiling. Activities funded under *de minimis* will be funded up to 100% of costs, although an application which includes partial matched funding would be viewed more favourably by DfT.

The State Aid *de minimis* ceiling is expressed in Euros. This can be equated to pounds sterling by using the rates shown on the EU website:

http://ec.europa.eu/budget/infocentre/index.cfm?fuseaction=currency_historique¤cy=GBP&language=en¹³

Under **Article 41, the Block Exemption for investment in the promotion of energy from renewables**, the maximum single award is EUR 15 million per project, although DfT has set the Stage One limit at GBP 500,000. Any grant awarded under Article 41 in Stage One must be deducted from the maximum available in Stage Two.

¹³ The EUR 200,000 ceiling will be converted into sterling at the exchange rate prevailing on the date on which the grant is awarded

DfT has set the maximum aid intensity at 50% of total costs for Stage One¹⁴. It is the responsibility of any applicant to the competition to determine their compliance with State Aid Regulations if the potential project falls outside the scope of Article 41.

You will be asked to state which funding route you have selected for your Stage One Project Development fund application, and provide all the necessary information requested in the Stage One application form. It is permissible to split activities between the two routes if there is reason to do so.

All applications for Stage One are subject to appraisal and there is no guarantee that successful applicants will be offered the full amount they have applied for.

Who can apply for Stage One?

Applications are expected primarily from private sector commercial organisations, with a range of project partners including SMEs and academic institutions. The Competition is open to applications from non-UK organisations. While there is no requirement for the applicant organisation to be registered in the UK, the project itself must be located in the UK (see eligibility criteria in Section B).

Applications to Stage One can be made by a single organisation or via a consortium/ partnership with a project lead organisation that receives funds and signs up to the grant conditions.

All applicants for Stage Two funding must have been successful at Stage One.

Eligible activities and costs at Stage One

Project Development Funding is expected to provide funding and management support to progress project concepts to the point that they are both investment- and construction-ready ahead of Stage Two. Eligible Stage One activities may cover a number of areas including:

- Feasibility studies and technical advice.
- Progressing applications for planning or other consents.
- Developing detailed GHG emissions projections for the demonstration and commercial-scale plants.
- Securing matched funding.
- Developing detailed designs, project plans, risk assessments, and detailed budgets (these will be required for Stage Two applications).

Please see Appendix B of this guide for a full list of eligible and ineligible costs for Stage One and Stage Two.

Please contact our Competition Delivery Partner if you have any questions regarding the eligibility of your project: F4C@ricardo.com

¹⁴ This may be uplifted by 10% for medium-sized enterprises, 20% for small enterprises, 15% for projects located in Assisted Area (a) and 5% for projects located in Assisted Area (c).

What documentation is required for a Stage One application?

Applications must be completed on the application form at ee.ricardo.com/F4C. We will not consider applications submitted in any other format.

Please ensure that you follow the guidance within the application form regarding formatting and number of words per section. When doing so, please refer back to this guidance document where necessary, and ensure that you have complied with all the scheme requirements.

Alongside the application form, ensure you also provide all the required Appendices:

- Technical specifications & project schematics (Q11)
- A summary of the overall work plan (Q23)
- An outline risk assessment (Q24)
- An outline project budget (3.2)
- Details of matched-funding from project financiers, where appropriate (3.4)

All completed application forms and required attachments must be submitted electronically to F4C@ricardo.com by 1200 hours on 08 December 2017. An identically signed original should be submitted within 5 working days of the deadline to:

F4C Stage One

Ricardo Energy & Environment
Gemini Building
Fermi Avenue
Harwell IBC
Oxfordshire
OX11 0QR

Maximum and minimum awards for Stage One

The maximum single award is £500,000 per project. Applicants must demonstrate how these funds will be spent by September 2018. There is no minimum award threshold and indeed we anticipate some projects may not require development funding, but they **must** submit a Stage One application, stating a £0 request for Stage One.

You are strongly advised not to commit yourself to any expenditure on which grant aid may be sought, until after a decision has been made on your application. If an offer letter is sent to you, you should sign and return it before incurring costs. We will not give grant funding to cover incurred costs that have started before an offer letter has been signed.

Interaction with other funding schemes

Grant schemes: It is possible to apply for other grant scheme funding so long as State Aid rules are not breached. This may mean a single eligible project applies for grants from two schemes up to the maximum State Aid intensity, or that grants are applied to different elements of a project, so long as the base eligible costs are not overlapping.

Loan schemes: There is no issue with applying for loans from other schemes as long as they are being offered on a commercial basis (i.e. including interest).

For further information, or to discuss a specific case, please contact the Competition Delivery Partner.

Appraisal of Stage One applications

Stage One applications must be received in December 2017 – the exact date and time will be specified on the F4C web page (ee.ricardo.com/F4C) - and will be screened against the eligibility criteria, assessed by technical and commercial experts from the Competition Delivery Partner, and submitted to an external selection panel for review. Stage One approval will be awarded based on the quality of applications submitted, their alignment with the competition objectives and the outcome of the assessment by the selection panel.

All applications for Stage One are subject to appraisal and there is no guarantee that successful applicants will be offered the full amount they have applied for.

Applications will be logged and an acknowledgement email will be issued providing a unique reference number for your application within two days of the closing date. This reference number should be used in all communications with the Competition Delivery Partner about your application. All applications will be checked for validity. Only those that are considered to be valid will be fully assessed.

All valid Stage One proposals will be appraised in relation to the F4C objectives and specifically against the criteria in Table 2 below. The F4C is competitive, and there is no guarantee that the full £2m will be allocated in Stage One.

Table 2: Selection Criteria for Stage One

Category	Criteria
Project relevance	Clarity of the project objectives and relevance to the competition objectives
The Technical Concept	Level of innovation and progress as a result of the Stage Two project
	Credibility of the technological approach and relevance to the specific challenge
Making the case: Commercial	Level of commercial advances as a result of the Stage Two project
	Future UK commercial potential and scalability, including production volumes expected and integration into fuel market
	Strength of case for DfT funding, including status of Stage One matched funding (if required)
Making the case: Economic impacts (Value for Money)*	Potential for economic benefits to the UK, including Stage Two project benefits
Environmental and feedstock aspects	Level of GHG emissions savings expected at commercial scale
	Sustainability of feedstocks considered
	Air quality impacts
Project Credibility	Confidence in skills and experience of the project team
	Appropriateness of the proposed Stage One Project Development activities and Stage One / Stage Two project work plans
	Understanding of the project risks and their management
	Credibility of Stage One Project Development activities costing

*further details regarding the Stage Two project Value for Money (VfM) are given in Section D

The assessment of proposals will be based only on the information which is explicitly contained within your application. You must not assume that the assessment team has any prior knowledge of your organisation or its work.

Approval of Stage One applications

If your application for Stage One funding is successful, you will receive a grant offer. This offer may be subject to conditions that need to be met. The grant offer letter, including the terms and conditions of grant, form the agreement between your organisation and the Department for Transport. You must sign the offer letter and return it to establish the agreement.

Where bids are not successful, we will send you a letter informing you that your application has been unsuccessful, and indicating the reasons for this decision. All decisions made by the DfT are final.

Stage One grant payments

The grant agreement sets out all terms of the funding and the duties and responsibilities of both parties.

DfT will only release milestone-based funds after signing of the grant agreements. Grantees must follow the conditions in their agreements on release and use of funds.

DfT recognises the importance of remaining flexible and pragmatic throughout project implementation and will consider changes to ensure the most effective use of funds. DfT should be requested to approve any changes to the overall impact and outcome of projects and any significant changes in outputs. Requesting a significant change may necessitate a re-examination of project purpose or implementation. DfT must approve any changes that require the movement of more than 10% of the total budget between budget lines. An updated work plan and budget may also be needed when requesting changes.

No extension to the project timescales are expected given that the grants will be for an eight-month period. However, if circumstances outside the control of grantees occur that impact on delivering the expected outputs in the Stage One period, grantees must inform their Monitoring Officer as soon as possible.

Funds should be claimed against evidence of expenditure which will usually take the form of a receipted invoice accompanied by evidence or copies of work undertaken. Should this not be possible, you may submit evidence of lack of funds and the payment can be made in advance. A claim form will be issued with your letter of offer. After each stage of work is completed you will be expected to complete and submit a claim form. Claims are submitted to the Competition Delivery Partner for processing. Claims will be processed within 21 working days of any claim being received by the Competition Delivery Partner. Finance is released against work carried out rather than a lump sum on approval.

Reporting during Stage One

Each grantee must maintain regular communication with their nominated Monitoring Officer.

Short updates will include:

- A brief monthly narrative (due by the 15th of the following month). This may take the form of an update call with the Monitoring Officer.
- A monthly spend forecast
- A final financial and narrative report within 15 days of the end of the project.

Ricardo Energy & Environment and E4tech, who manage the F4C on behalf of DfT, will review all reports and will address any issues in these and contact grantees accordingly. They will be the first point of contact between grantees for any project reporting.

Intellectual property rights

IP developed within the project remains the property of the applicant/consortium.

Any intellectual property related to the communication of project progress and achievements created under the F4C must be made freely available as a public good.

SECTION D: GUIDANCE FOR STAGE TWO APPLICATIONS

This section provides guidance for completing a Stage Two application under the F4C. This guidance is relevant to the Stage One selection process.

Stage Two Overview – Capital Investment

Who can apply for Stage Two funding?

Only projects that have been approved under Stage One can apply to Stage Two.

Only applicants who have successfully received Stage One approval will be considered. The lead applicant and project objectives should not change from Stage One. Applicants must inform the Competition Delivery Partner immediately in such circumstances.

What is DfT looking for in a Stage Two project?

Any applicant to Stage Two should present a strong proposal which builds on the project concept proposed at Stage One. Applicants should be able to demonstrate the impact of any Stage One Project Development Funding they received on the quality, detail and status of their proposed project by Stage Two.

In particular, by Stage Two, the following **Stage Two eligibility criteria** must be met:

- The applicant must have identified a site,.
- The applicant must have at least Heads of Terms in place with any match funders, although firmer commitments from investors will score more highly in the assessment of Stage Two applications.
- The applicant must have a detailed project cost plan, with detailed engineering design work having been completed where possible.
- The applicant must be able to demonstrate the commercial potential of the technology/process/supply chain to deliver significant quantities of advanced low carbon fuel when delivered at full scale.
- The proposed feedstocks, if not 100% renewable (e.g. Municipal Solid Waste), must demonstrate the environmental benefit of using the feedstocks for fuel production (based on a full consequential lifecycle GHG assessment), compared to the likely alternative destination of the feedstocks.

The following additional criteria should be met in order to achieve the highest available score against these criteria:

- The applicant should have ideally submitted or gained planning permission for use of the site for the intended project
- The applicant should have ideally Heads of Terms in place with a feedstock supplier.
- The applicant should have ideally Heads of Terms in place with an off-take partner.

What project activities can be changed from the Stage One application?

Applicants will set out what their project intends to achieve as part of their Stage One application. Where any changes are required, these must be supported by research or evidence which has been produced during the preparation of the Stage Two application.

Eligible costs and activities for Stage Two

Eligible costs at Stage Two are focussed on the capital investment costs of the project and may comprise items such as:

- Cost of all purchased goods and services necessary to build and commission the proposed project.
- Equipment such as the conversion technology, feedstock pre-processing equipment, and monitoring and control equipment.
- The cost of purchased services for the evaluation of the project and the dissemination of the results.
- Own labour costs, including agreed overheads, but not profit, for construction, commissioning, and project management.

Please see Appendix B of this guide for a full list of eligible and ineligible costs for Stage Two.

How should Stage Two budgets be presented?

Applicants are asked to present project budgets using the project budget template in the Stage Two Application Form, adding individual budget lines to suit your project. This should be completed in Microsoft Excel. The budget should be accompanied by a budget narrative. Please note:

- Under State Aid rules for Article 41¹⁵, the maximum single award is EUR 15 million per project¹⁶ which must be spent by end of November 2021. Due to the ambition for transformational projects, we expect applications for grants in the range of £3-8m. The minimum grant award threshold is £1 million per project.
 - DfT has set the maximum aid intensity at 50% of total capital costs for the Stage Two project.
 - It is the responsibility of any applicant to the competition to determine their compliance with State Aid Regulations if the potential project falls outside the scope of Article 41.
 - If you have used Article 41 funding in Stage One of your project, you must deduct this amount from the maximum single award value.
- All budgets should be in British pounds sterling and broken down into UK financial years (1st April to 31st March).
- Applicants should state the forecast cost of goods and services delivered, as a proportion of total project costs.

¹⁵ Article 41 Investment aid for the promotion of energy from renewables

¹⁶ The State Aid ceiling is expressed in Euros. This can be equated to pounds sterling by using the rates shown on the EU website:

http://ec.europa.eu/budget/infocentre/index.cfm?fuseaction=currency_historique¤cy=GBP&Language=en

Note: The EUR 15m ceiling will be converted into sterling at the exchange rate prevailing on the date on which the grant is awarded. Applicants cannot assume that the EUR 15m ceiling is calculated at an exchange rate prevailing on any earlier date.

- Applicants should include any co-financing/cost-sharing arrangements with other donors so that DfT's contribution can be seen by line.
- Applicants should outline and disaggregate any intermediary transaction costs where your organisation is sub-contracting to partners. Please also provide a separate budget breakdown for each individual partner.

The inclusion of a budget narrative together with the main table makes the decision-making process quicker, as the assessment team is less likely to revert to your organisation with additional questions. Include a breakdown of individual budget lines where required.

You will also be required to complete a cash flow forecast between 5 and 20 years, depending on the scale of your project, and the likely lifetime of operation.

In delivery of the work, projects may transfer money between budget lines within any budget sub-headings. Where changes to any line are less than 10% of their previous value you do not need to seek approval. However, if you want to make a transfer which changes the previous value of a line by 10% or more, you must request prior approval from DfT.

You are strongly advised not to commit yourself to any expenditure on which grant aid may be sought, until after a decision has been made on your application. If an offer letter is sent to you, you should sign and return it before incurring costs. DfT will not give grant funding to cover costs incurred before an offer letter has been signed.

How should project progress and achievements be communicated?

Projects are expected to give appropriate recognition to the provision of the grant by DfT in any press release or other contact with the media. All projects will be encouraged to increase awareness of their installation and to promote UK advanced fuels. This could be by open days, magazine articles, educational links with schools and colleges, training courses etc. If you commit to such activities in your application, it will increase the chances of success in obtaining funding.

Intellectual property rights

IP developed within the project remains the property of the applicant/consortium.

Any intellectual property related to the communication of project progress and achievements created under the F4C must be made freely available as a public good.

What is the duration of grants?

All Competition monies must be spent by 30 November 2021.

What documentation is required for a Stage Two application?

Applications must be completed on the application form at ee.ricardo.com/F4C. We will not consider applications submitted in any other format.

Please ensure that you follow the guidance in the application form regarding formatting and number of words per section. When doing so, please refer back to this guidance document where necessary, and ensure that you have complied with all the scheme requirements.

You must also submit the following documentation:

- Detailed technical schematics for the project

- A detailed work plan
- An electronic copy of lead organisation constitution OR Governance document of consortium
- Letters from all proposed partners that they have agreed to be part of the consortium/alliance/partnership that will implement this project
- Evidence of agreements to supply feedstock
- Evidence of off-take agreements
- Evidence of match-funding (including letters of comfort from banking/loan facilities, minutes from board meetings, and other grant funding awards)
- Proof of fair procurement processes
- A detailed project budget and narrative, including the eligible cost breakdown, counterfactual calculations, and aid intensity calculations
- A detailed cash flow forecast (appropriate to the lifetime of your project)
- A detailed risk assessment
- Evidence of planning/consents, or progress towards these
- Evidence of community consultation (where relevant)

Applicants to Stage Two will be invited to give a 10 minute presentation of their application to the selection panel. The selection panel meeting will take place on 24 January 2019 at DfT's offices in London. Further information about the meeting and the exact timing for the presentations will be communicated to Stage Two applicants in due course.

Responses to questions or requests for clarification on these guidelines will be published on the competition website (ee.ricardo.com/F4C).

How will Stage Two applications be appraised?

All applications for funding are subject to appraisal and there is no guarantee that all successful proposals will be funded in full.

Applications will be logged and an acknowledgement email will be issued providing a unique reference number for your application within two days of the closing date. This reference number should be used in all communications with the Competition Delivery Partner about your application. All applications will be checked for eligibility. Only those that are considered to be valid will be fully assessed. For all valid applications, the applicants and each partner in any consortium will be subject to due diligence and must provide all information required in the Stage Two application form to facilitate this test, plus any additional information requested during the assessment period. Due diligence may also be carried out on sources of matched-funding (where appropriate). Applications from any organisation failing the test (including failure to provide requested information within 1 month of the request), or involving a consortium that includes any organisation failing the test, will be ruled ineligible.

All valid Stage Two proposals will be appraised in relation to the F4C objectives and specifically against the criteria in Table 3 below. The F4C is competitive, and there is no guarantee that the full £20m will be allocated.

Table 3 Stage Two Selection Criteria

Category	Weighting	Criteria
Project relevance	2.5%	Clarity of the project objectives and relevance to the competition objectives
Technical Approach	20%	Level of innovation and progress as a result of the project
		Clarity and robustness of the project data and pilot plant data
		Evidence that sufficient quantity of fuel will be produced for testing at a scale appropriate for the fuel readiness level
		Credibility and robustness of the technological approach and relevance to the specific challenge
Making the case: Commercial	25%	Level of commercial advances as a result of the project
		Future UK commercial potential and scalability, including production volumes expected and integration into fuel market
		Strength of case for DfT funding
		Level of matched funding leveraged and status of securing funding
		Offtake agreements for fuel and other co-products produced by the plant
		Appropriateness of the process for obtaining quotes/ tenders for project work and to select the preferred companies/ contractor(s)
Making the case: Economic impacts (Value for Money)*	10%	Potential and case for economic benefits to the UK, including local economic benefits
		Potential and case for benefits from export markets
Environmental and feedstock aspects	12.5%	Level and evidence of GHG emissions savings of the project, and expected GHG emissions savings at commercial scale
		Sustainability of feedstocks considered
		Air quality impacts
Project Credibility	30%	Appropriateness of project management structure and partner roles
		Confidence in skills and experience of the project team
		Appropriateness and credibility of the project work plan

	Detailed understanding of the project risks and their management
	Appropriateness and clarity of dissemination plan
	Credibility of detailed project costing, counterfactual and cash flow, particularly if (development fuel) RTFCs are not available

*further details regarding Value for Money (VfM) are given in the section below

The assessment of proposals will be based only on the information which is explicitly contained within your application. You must not assume that the assessment team has any prior knowledge of your organisation or its work.

Delivering Value for Money (VfM)

Ensuring Value for Money is a critical objective of this competition, reflecting the obligation on the Department to ensure it is spending taxpayer’s money as effectively and efficiently as possible. We have therefore designed the assessment criteria and process for the demonstration competition to assess the Value for Money (VfM) of each project and ensure overall VfM for the programme can be assured as far as possible.

Value for money therefore means two things to the DfT: firstly, whether an individual project delivers value for money (interpreted as delivering net economic benefits to the UK); and secondly, in determining the combination of ‘winning’ projects to maximise the returns on the £20 million budget.

A project delivering value for money is one which can demonstrate that it can deliver significant net benefits to the UK. There are two aspects to this. Firstly, through the assessment criteria we require evidence on the expected economic impacts of the project, for example in terms of employment, production capacity, future revenue etc. In addition, the assessment criteria asks for evidence of the potential for export growth through plans for expansion and export of technology from the UK. Combined these factors give a sense of what – at a ‘gross’ level – the project could deliver for the UK in terms of future production, employment and export growth.

The second aspect is to determine whether these impacts are truly additional, or whether they would have happened anyway or simply divert resources from other uses. We therefore want to understand what proportion of the ‘gross’ impacts would be genuinely ‘new’ and therefore the scale of ‘net’ benefits. The assessment criteria therefore require additional evidence on a number of factors, for example on where capital comes from, capital constraints, the feedstocks used, the location of the plant, and the current employment and skills of the staff on the project.

The assessment of the expected net benefits of the project, along with an assessment of the justification for the money bid for, is used to evaluate the value for money of the project.

The final step is to combine the information on value for money of each project into an overall assessment of which projects to proceed with. Here, value for money is simply that combination of projects which maximises total net benefits given the £20 million budget. The selection panel will need to consider all possible combinations of projects given the budget, and use the assessment of each project to determine which combination of projects maximises total net benefits. In this way the

budget will be used to deliver the greatest value possible (given the bids available), and thereby provide assurance that DfT is delivering value for money.

When will decisions on the award of Stage Two grants be known?

All applicants will receive notification of the outcome of the assessment of their full proposals. This is expected to be by spring 2019. Please note that all decisions will be final and there is no appeals process.

Details of all successful grants will be published on the competition website.

If your application for Stage Two funding is successful, you will receive a grant offer. This offer may be subject to conditions that need to be met prior to acceptance. The grant offer letter, including the terms and conditions of grant, form the agreement between your organisation and DfT. You must sign the offer letter and return it to establish the agreement.

Where bids are not successful, we will send you a letter informing you that your application has been unsuccessful, and indicating the reasons for this decision. All decisions made by DfT on funding are final.

How will payments be made?

Payments will only be made by DfT after an agreement has been signed between the applicant and DfT. Further details on payments and financial requirements will be provided by the Competition Delivery Partner as part of any grant agreement. These will include the requirement for detailed statements of expenditure and requests for funds in the format that will be specified by the Competition Delivery Partner.

Payments will be made on a milestone basis upon receipt of a detailed statement of expenditure. They will be subject to satisfactory progress against the project's work plan.

Applicants must satisfy the due diligence, financial and organisational checks required prior to receiving public funds.

DfT recognises the importance of remaining flexible and pragmatic throughout project implementation and will consider changes to ensure the most effective use of funds. DfT should approve changes to the overall impact and outcome of projects and any significant changes in outputs. Requesting a significant change may necessitate a re-examination of project purpose or implementation. DfT must approve any changes that require the movement of more than 10% of the total budget between budget lines. An updated work plan and budget may also be needed when requesting changes.

Grant claims must be invoiced by a set date in 2021 (to be confirmed). If circumstances outside the control of grantees occur which impact on delivering the expected outputs in the Stage Two period, grantees must inform the Competition Delivery Partner as soon as possible. The Competition Delivery Partner will consult with DfT to determine the best course of action.

Funds should be claimed against evidence of expenditure usually in the form of a receipted invoice accompanied by evidence or copies of work undertaken. A claim form will be issued with your letter

of offer. After each stage of work is completed you will be expected to complete and submit a claim form. Claims should be submitted to the Competition Delivery Partner for processing and will be processed within 21 working days of any claim being received. Finance is released against work carried out rather than a lump sum on approval.

Reporting during Stage Two

Each grantee must maintain regular communication with their allocated Monitoring Officer from the Competition Delivery Partner.

Grantees will undertake their own project monitoring with the support of their Monitoring Officer. They will be expected to provide reports on their project's progress. The narrative reporting will be as follows:

- A monthly narrative of progress, including an update on any identified issues or risks to delivery (due by the 15th of the following month)
- A quarterly formal progress report, financial forecast, and update of the project plan and risk register (due by the 15th of the following month, at the end of each quarter)
- An annual report, reviewing all progress, challenges faced, and grant claimed (due by the 15th of the following month, at the end of each financial year)
- A final financial and narrative report within 30 days of the end of the project.

Ricardo Energy & Environment and E4tech, who manage the F4C on behalf of DfT, will review all reports and will address any issues in these and contact grantees accordingly. They will be the first point of contact between grantees for any project reporting.

Reporting beyond project completion

It is expected that projects awarded a grant may be subject to future independent evaluation of their project as part of a wider F4C evaluation. This may be carried out by a third party on behalf of DfT and the grantees will be required to participate.

Appendix A

The Competition Feasibility Study found that there is opportunity for a new UK Competition to support projects that increase the Technology Readiness Levels (TRL – see definitions in Table 1) of advanced low carbon fuels for aviation and HGVs, promoting technologies currently at pilot (TRL 5), demonstration (TRL 6-7) or even first commercial plant (TRL 8) stages.

Table 1: Technology readiness levels definitions

TRL	Definition	Plant stage
1	Basic principles observed and reported	Basic research
2	Technology concept and/or application formulated	Theoretical research
3	Analytical and experimental critical function and/or characteristic proof of concept	Applied research
4	Technology component and/or basic technology sub-system validation in a laboratory environment	Bench-scale test rig
5	Technology component and/or basic sub-system validation in a relevant environment	Pilot plant
6	Technology system/subsystem model or prototype demonstration in a relevant environment	Small-scale demonstration plant
7	Technology system prototype demonstration in an operational environment	Full-scale demonstration plant
8	Actual technology system completed and qualified through test and demonstration	First commercial plants
9	Technology system “qualified” through successful mission operations	Mass deployment of fully commercial plants

Appendix B

Eligible activities and costs at Stage One

Stage One funding is expected to support development towards a full project proposal and application for Stage Two funding:

- Feasibility studies.
- In-depth research.
- Development of prototype.
- Technical advice.
- Progressing applications for planning or other consents.
- Progressing procurement (Stage Two applicants must show evidence of the tendering process followed for any contracted work).
- Hosting meetings with potential consortia members for Stage Two.
- Hosting meetings between applicant consortia and others necessary to further the development of the project.
- Developing detailed GHG emissions projections for the demonstration and commercial-scale plants.
- Developing detailed designs, project plans, risk assessments, and detailed budgets (these will be required for Stage Two applications).
- Formalising a consortium or partnership arrangement.
- Addressing legal issues.
- Securing match funding.
- Strategy work and option appraisals.

Ineligible activities and costs at Stage One

- Any costs incurred before a Stage One grant offer letter has been signed with DfT.
- Purchased goods and services to build and commission the proposed project.
- Purchase cost of any land on which the project is built.
- Input VAT (except where it cannot be reclaimed by grantees).
- Interest charges, bad debts.
- Hire purchase interest and any associated service charges.
- Loan repayments.
- Mark up and profits.
- Profit earned by a subsidiary or by an associate undertaking work sub-contracted under the project.
- Notional costs (e.g. opportunity costs).
- Audit fee for certification of claims by an independent accountant.
- Grants that contribute directly to a Company's distributed profits.
- Endowments.
- Funds to build up a reserve or surplus.
- Retrospective funding.

- Any costs that are already being funded by another grant source, or are to be funded by another grant source in the future.
- Advertising, marketing, sales activities, entertaining.

Eligible activities and costs at Stage Two

For the purpose of this scheme, eligible costs at Stage Two are those legitimate costs that are incurred over and above the installed costs of equipment necessary to deliver a non-advanced low carbon fuel output. Eligible costs comprise:

- Only costs incurred after the date of the acceptance of the final offer of a grant;
- Cost of all purchased goods and services necessary to build and commission the proposed project. This includes the cost of fuel used in the installation and labour up to and including certified acceptance of commissioning¹⁷;
- The equipment eligible for grant is the conversion technology, feedstock pre-processing equipment, and monitoring & control equipment.
- Buildings and building work are not eligible except in the following cases;
 - Steelwork when it is an integral part of the equipment support structure;
 - Excavations for fuel storage.
 - Foundations and mounting pads for equipment.
- In retrofit applications, insulated linking pipework with associated calorifiers, pumps and controls to connect to the existing conversion technology will be eligible.
- Remedial work on building fabric will be eligible only to the extent necessary to make good after equipment installation.
- The cost of purchased services for the evaluation of the project and the dissemination of the results.
- Own labour costs, including agreed overheads, but not profit, for construction, commissioning, and project management. These costs should be directly linked to the design, construction, commissioning and evaluation of the equipment contained in the project and auditable as such.
- In this context “own costs” include applicant’s own costs and eligible costs incurred by consortium members and eligible costs incurred by companies connected to any of these.

Ineligible activities and costs at Stage Two

The following are not eligible costs at Stage Two.

- R & D.
- Feasibility studies.
- Business start-up or development.
- All costs associated with progressing applications for planning or other consents.

¹⁷ Certified acceptance of commissioning is the formal acceptance, following an agreed testing programme, that the installation will have adequate performance and output. This will normally coincide with the owner’s take-over of the installation for commercial operation from the construction contractor.

- Purchase cost of any land on which the project is built.
- Input VAT (except where it cannot be reclaimed by grantees).
- Interest charges, bad debts.
- Hire purchase interest and any associated service charges.
- Loan repayments.
- Mark up and profits.
- Profit earned by a subsidiary or by an associate undertaking work sub-contracted under the project.
- Notional costs (e.g. opportunity costs).
- Audit fee for certification of claims by an independent accountant.
- Grants that contribute directly to a Company's distributed profits.
- Endowments.
- Funds to build up a reserve or surplus.
- Retrospective funding.
- Any costs that are already being funded by another grant source, or are to be funded by another grant source in the future.
- Advertising, marketing, sales activities, entertaining.
- All costs associated with the operation of the equipment following commissioning or acceptance by the ultimate owner.