



Green Fuels, Green Skies (GFGS) Competition

Guidance document for applicants

Version 1.1

This guidance document provides information on applying to the Department for Transport's Green Fuels, Green Skies (GFGS) Competition. This document should be read in advance of submitting any application and should be referred to throughout the competition process.

Following a commitment laid out in the Prime Minister's November 2020 [Ten Point Plan for a Green Industrial Revolution](#), the Green Fuels, Green Skies (GFGS) Competition was launched on 16 March 2021 by the Department for Transport (DfT). The competition aims to support the UK's emerging sustainable aviation fuels (SAF) sector, with the **key objective of the GFGS Competition** to:

Support the development of the UK SAF sector towards the deployment of innovative SAF production technologies at commercial scale that are capable of reducing emissions from the aviation sector in the UK within the near-term.

To achieve this objective the GFGS Competition will provide up to £15 million in total grant funding to UK SAF projects through a single competitive funding round during the 2021/22 Financial Year. Specifically, the competition will look to support the early-stage development of UK SAF plants, referred to as "Front End Engineering Design (FEED)", "Pre-FEED" and "Feasibility" stages¹ of a project's development lifecycle.

The competition will prioritise supporting projects already closest to the development of First-Of-A-Kind (FOAK) commercial scale SAF plants (i.e. projects currently closest to the FEED-FOAK stage of development) but will be open to projects outside this scope and will also allocate up to £2m in funding to projects at the feasibility stage of project development.

The GFGS competition will be administered and managed on behalf of the DfT by the competition delivery partners Ricardo Energy & Environment and E4tech.

The GFGS competition is open to applications until 31 May 2021. Application documents will be made available on the [competition website](#) on 24 March 2021.

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

¹ Other terms include "Front End Loading (FEL) 1-3", "Pre-Project Planning (PPP)", and "Concept", please see Appendix C for definitions.

If applicants have any questions about these guidelines, they should send these to GFGS@ricardo.com. Anonymised questions and responses will be published on an FAQ page available on the [competition website](#).

Table 1: Prospective dates of key stages of the GFGS competition

Date	Stage
16 March 2021	Competition launched
24 March 2021	Application documents released on the competition website
31 May 2021	Application deadline
31 July 2021 [Expected]	Announcement of competition winners and the start of Funding Period for project work.
31 March 2022	End of Funding Period for winning projects

The Guide

This guide has three sections (it is vital to read and understand all sections ahead of an application):

- **Section A** - The competition background.
- **Section B** - Competition objectives and eligibility criteria.
- **Section C** - Guidance for applicants.

Please see the [competition website](#) for supplementary information such as Frequently Asked Questions.

SECTION A: THE COMPETITION BACKGROUND

This section sets out the background to the GFGS competition, 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 the aviation sector currently has few alternatives to using liquid fossil fuels.

Advanced biofuels (from biogenic wastes and residues), fuels from renewable electricity and waste-based fossil fuels could deliver significant GHG savings. However, other than mature (TRL9) hydrotreating routes using segregated waste oils and fats, conversion routes to jet fuel 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 (RTFO), and by providing matched grant funding to industry projects via the £25m [Advanced Biofuel Demonstration Competition](#) (ABDC) and the £20m [Future Fuels for Flight and Freight Competition](#) (F4C). Whilst these demand- and supply-side approaches have been successful at bringing forwards waste-derived advanced biofuels for use in the road sector, there is still a need to support the development of the emerging UK SAF sector on its pathway to production at scale.

An independent [feasibility study](#) commissioned by the DfT from E4tech & Ricardo-EE (via an ARUP/AECOM consortium) has indicated that early and decisive action could enable the UK, with our research and engineering expertise, to claim a share of a global SAF market that could support substantial UK low carbon growth. A high-level analysis indicates that this could generate between £700m and £1,660m in GVA, with potentially half of this being generated from the export of Intellectual Property (IP) and the provision of engineering services. This industry could create between 5,000 and 11,000 green jobs, and furthermore, replacing imported kerosene with domestically produced SAF would increase fuel security and have a net positive impact on the UK's balance of payments.

Having recognised the potential for the UK's SAF sector, in 2018, the DfT amended the RTFO to create a set of sub-targets to 2032 for 'development fuels'. This change extended the RTFO eligibility to cover aviation fuels plus renewable fuels of non-biological origin, creating improved UK market conditions for the production of these fuels.

To further complement and build on this demand-side policy change, as part of his [Ten Point Plan for a Green Industrial Revolution](#), the Prime Minister announced on 18 November 2020 a new comprehensive package of support for SAF. This announcement included funding to establish a SAF testing hub (a UK "Clearing House"); a commitment to consult on a blending mandate for SAF and a:

“...£15 million competition to support the production of Sustainable Aviation Fuels (SAF) in the UK, building on the success of the Future Fuels for Flight and Freight Competition (F4C).”

This competition will provide funding for the early development stages of large scale UK SAF production plants. This will help address a fundamental barrier that developers currently face – access to early-stage capital – while directly supporting activities that are crucial in the development of FOAK Commercial and Demonstration scale SAF plants in the UK. The competition will also aim to leverage private investment in the UK’s emerging SAF sector by both supporting projects to reach an “investor ready” status and by prioritising for selection projects that have secured match funding. The development of this competition design has been supported by the release of an [industry survey](#) during the winter 2020 period.

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

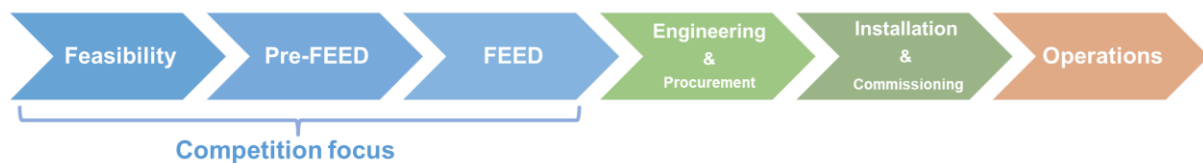
SECTION B: COMPETITION OBJECTIVES AND ELIGIBILITY CRITERIA

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

Overview

The purpose of the competition is to support the development of the emerging UK sector on its pathway to production of SAF at scale. To achieve this the GFGS competition will be open to provide grant funding to UK SAF facilities at the “FEED”, “Pre-FEED” and “Feasibility” stages (Appendix C) of a typical project’s development lifecycle. In total up to £15m in funding will be provided to winning projects for work during the GFGS competition Funding Period.

Figure 1. Project lifecycle stages for a SAF plant and the GFGS competition focus



Objectives

The **key objective of the GFGS competition** is to:

- Support the development of the UK SAF sector towards the deployment of innovative SAF production technologies at commercial scale that are capable of reducing emissions from the aviation sector in the UK within the near-term.

The **objectives for projects** receiving financial support are:

- **Technology demonstration:** materially progress a project towards First-Of-A-Kind (FOAK) commercial production of an eligible SAF pathway.
- **Fuel production:** materially develop a project with the capability to produce commercially significant volumes of SAF, including for the purposes of attaining certification.
- **Commercial potential:** materially develop a strategy for commercialising the technology and the products from the project, demonstrating the potential for significant value to the UK.
- **Emissions reduction:** demonstrate the potential for greenhouse gas reductions of a technology pathway vs a fossil fuel equivalent.
- **Project execution:** bring together a team with the necessary expertise and experience to deliver the project according to its objectives.

It is expected that projects that are currently closest to the commercial scale construction of SAF plants in the UK will be best placed to achieve the competition’s objective. Therefore, applicants should note that the assessment process has been designed to prioritise selecting and supporting activities related to the near-term development of First-Of-A-Kind (FOAK) commercial SAF plants that require additional support to become “investor ready”. To achieve

this, projects currently at the FEED-FOAK stage of development will be marked preferentially for some scoring criteria during the scoring process.

However, eligible projects that are not currently at a FEED-FOAK stage and that are able to demonstrate a clear alignment with the competition’s objective of supporting the future development of SAF at scale are still expected to be able to remain competitive within the scoring and assessment process. The competition will also allocate up to £2m from the £15m fund specifically for projects (both at the demonstration and FOAK commercial scale) that are at the feasibility stage of development. This is so that the competition is able to ensure the future pipeline of UK SAF projects remains strong, including with a diverse range of technologies supported.

Eligibility Criteria

In order to be eligible to apply to the GFGS competition, a project must comply with the following minimum requirements:

Category	Eligibility Criteria
Pathways	<p>The proposed SAF output must be capable of being blended with jet A-1.</p> <ul style="list-style-type: none"> Ideally, this would involve fuel that can be used immediately without engine modifications, meeting the relevant jet fuel ASTM specifications.¹ However, projects involving fuels that do not currently meet ASTM specifications are also able to apply, provided that the relevant SAF pathway is currently engaged with the ASTM certification process, or there is clear evidence of the fuel’s future potential to be blended with Jet A-1.
Greenhouse Gas savings	<p>First-of-a-kind commercial scale plants must demonstrate they will deliver a SAF output with a minimum 70% lifecycle GHG reduction in comparison to a counterfactual of 94gCO_{2e}/MJ (LHV). Demonstration plants do not have to meet this requirement but must demonstrate how a future commercial plant will meet this threshold.²</p>
TRL	<p>The proposed plant must achieve Technology Readiness Level³ 6-8 (small demonstration, large demonstration or First-Of-A-Kind commercial scale).</p>
Feedstock	<p>Feedstocks (including the original feedstocks used to derive any intermediate fuels) should have the potential to qualify as a ‘development fuel’ under the RTFO⁴:</p> <ul style="list-style-type: none"> <i>Waste feedstocks</i> used must demonstrate compliance with the waste hierarchy. Segregated waste fats/oils are not eligible. <i>Renewable power to liquids</i> routes must demonstrate additionality of the renewable electricity used, as per RTFO guidance.
Location	<p>The proposed plant must be located in the UK.</p>
Project Lead	<p>The project lead must be a UK registered company.</p>

¹ A list of certified and some pre-certification ASTM SAF production pathways is presented in Appendix A.

² Project activities focused on demonstration-scale plants that do not achieve the GHG threshold will have to evidence a clear and credible path to achieving the GHG threshold for their future commercial-scale plants

³ 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 B, with current TRLs for a large number of technologies given in the [Competition Feasibility Study](#). The competition will not support fully commercialised pathways (TRL 9).

⁴ The current status of many feedstocks can be found [here](#). Please note that all single counting feedstocks and dedicated energy crops are not eligible feedstocks for producing development fuels. Applicants that are uncertain of the eligibility of their feedstocks should direct questions to GFGS@ricardo.com by 30 April 2021.

T&Cs	Acceptance of the competition's grant offer letter terms and conditions. ¹
Eligible costs	Funding cannot be used for previously funded activities or to replace private sector investment. ²
Timescales	Funding is only available for project work completed during the competition's Funding Period. ³

Questions and points of clarification

Questions and points of clarification about the GFGS competition should be emailed to GFGS@ricardo.com. Anonymised questions and responses will be published on an FAQ page available on the [competition website](#).

¹ An example competition grant offer letter will be made available via the competition website before 30 April 2021.

² Please refer to "Interaction with other funding schemes" in Section C of the guidance document for further information.

³ Please refer to "Competition scope and Funding Period" in Section C of the guidance document for further information.

SECTION C: GUIDANCE FOR APPLICANTS

This section sets out the processes and actions for applicants.

Overview and Timetable

The following figure and table outline the competition process and prospective dates for its key stages.

Figure 2: GFGS Competition process

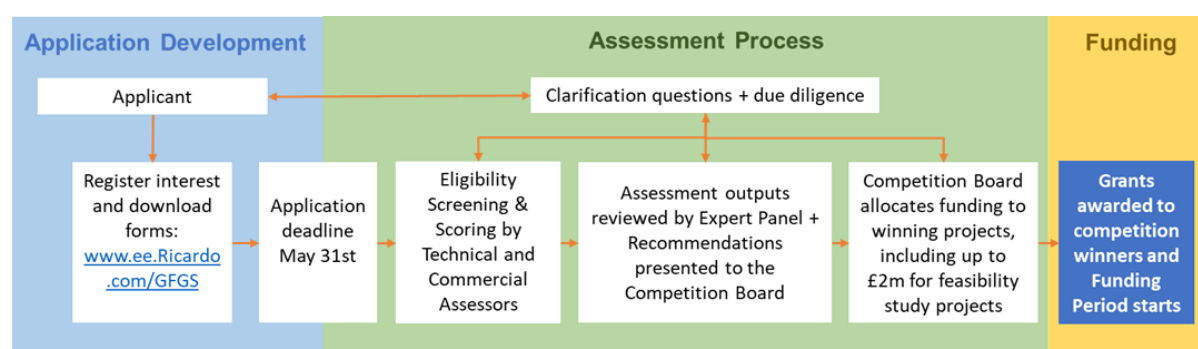


Table 2: Stages of the GFGS competition

Date	Stage
16 March 2021	Competition launched
24 March 2021	Application documents released on the competition website
31 May 2021	Application deadline
31 July 2021 [Expected]	Announcement of competition winners and the start of Funding Period for project work.
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Who is managing the GFGS Competition?

The GFGS competition will be administered and managed on behalf of the DfT by the competition delivery partners Ricardo Energy & Environment and E4tech.

Who can apply for funding?

Applications are expected primarily from private sector commercial organisations, with a range of project partners including SMEs and academic institutions. Applications 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. The lead applicant organisation must be registered in the UK, and the project itself must be located in the UK (see eligibility criteria in Section B).

Those interested in the GFGS competition should register interest by emailing GFGS@ricardo.com to ensure you are kept up to date as the scheme progresses. Application documents will be made available on the [competition website](#) on 24 March 2021.

Competition scope and Funding Period

Project funding will be available for work completed during the competition “Funding Period”. This will begin following the assessment process in July 2021 and is expected to extend until 31 March 2022. Applications will only be accepted to support project work at the “Front End Engineering Design (FEED)”, “Pre-FEED” and “Feasibility Study” stages (Appendix C) of a project’s development lifecycle during this Funding Period and in line with the eligible work outlined below and in Appendix D.

The Funding Period for winning projects will begin after the finalisation of project specific grant conditions and all relevant grant agreement paperwork. Due to this the Funding Period start dates may vary between winning projects. However, for the purpose of their applications, projects may assume their Funding Period begins on 31 July 2021.

It is expected that project work may extend beyond the 2021/22 financial year, however, applicants are strongly reminded that funding is only available for work that has been demonstrated to be completed by the end of the Funding Period on 31 March 2022, so work tied to grant requests must be feasible to deliver within that timescale. Only work completed up to the end of the Funding Period will be eligible for reimbursement. Applicants must demonstrate how funds requested will be appropriately used by 31 March 2022 within their application.

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

Eligible activities and costs

Funding is expected to provide support to progress projects to the point that they are both investment and construction ready as soon as possible after the end of the Funding Period. The competition will not provide funding for construction costs. Eligible activities may cover a number of areas including:

- Technical reviews, in-depth research and feasibility studies
- Strategy work and option appraisals
- Process and Instrumentation Diagrams (P&IDs) development
- Hazard and Operability Study (HAZOP), safety and ergonomic studies
- Other plant design and plant modelling work
- Feedstock availability assessments
- Developing detailed GHG emissions projections for plants
- Obtaining estimates for goods and services
- Economic assessments (including detailed revenue and cost modelling)
- Plant site identification and review
- Permitting and planning application work

- Developing detailed project plans, risk assessments, and detailed budgets
- Hosting meetings with potential consortia members
- Formalising a consortium or partnership arrangement
- Hosting meetings between applicant consortia and others necessary to further the development of the project
- Securing private sector funding
- Addressing legal issues
- Progressing procurement to support eligible activities and costs

Please see Appendix D of this guide for a full list of eligible and ineligible costs.

Please contact the competition delivery partner if you have any questions regarding the eligibility of your project: GFGS@ricardo.com. Anonymised questions and responses will be published on an FAQ page available on the [competition website](#).

What documentation is required for an application?

Applications must be completed on the application form available at www.ee.ricardo.com/GFGS from 24 March 2021. 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 to this guidance document where necessary and ensure that you have complied with all the scheme requirements.

You may also be required to submit the following documentation and supplementary evidence as part or in support of your application:

- Letters from all proposed partners confirming that they have agreed to be part of the consortium/alliance/partnership that will implement this project (to be completed by the applicant).
- Evidence to support the choice of technology (to be completed by the applicant) including:
 - Detailed technical specifications and project schematics for the proposed plant (to be completed by the applicant).
 - Further evidence of pilots/previous plants (to be completed by the applicant).
- A summary of the overall work plan including governance plan of any consortium (to be completed by the applicant)
- A detailed project budget for the grant funded activities (to be completed by the applicant)
- A projected cash-flow model for the future commercial plant (template provided)
- Details of match funding from project financiers (where appropriate)
- An outline risk assessment (template provided)
- An emissions estimate for your project (template provided) with supporting evidence for assumptions used (to be completed by the applicant).
- Relevant documents to demonstrate the project's current development status. These may include financial agreements, planning permission, permits, fuel off-take agreements, feedstock supply agreements, engagement with key equipment suppliers and engineering contractors, process safety assessments etc. (to be completed by the applicant).

All completed application forms and required attachments must be submitted electronically to GFGS@ricardo.com by 16.00, Monday 31 May 2021.

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.

Please note that during the assessment period, you must be able to provide (within 5 working days) on request further evidence and clarifications materially connected to your application's assessment or needed to support due diligence undertaken by the DfT. Please ensure that this information is readily available to avoid delay to grant award and enable commencement of funded activities. The Funding Period will not be extended should there be delays to this process.

Assessment of applications

Applications must be received by 31 May 2021 and will be screened against the eligibility criteria provided in Section B. Applications that pass the eligibility criteria screening will then be passed to the scoring process where they will be assessed by 2 technical and 1 commercial experts from the competition delivery partner against the scoring criteria provided below; these assessments will be submitted to an independent external Expert Panel for review before being passed to the competition board. Due diligence of projects may also be commenced during this period. Projects may be asked to provide clarifications and/or may be invited to an interview regarding their application during this period.

All applications are subject to assessment and the assessment of applications will be based only on the information which is explicitly contained within your application and supporting documentation. You must not assume that the assessment team has any prior knowledge of your organisation or its work.

Scoring of applications

The total score awarded to an application in the scoring process will be calculated by applying the weighting set against each scoring criterion from the table below. In order to be eligible for consideration for funding, projects that have met the eligibility criteria must score a minimum total weighted score of 50% in the scoring process. Where insufficient number of projects clear this threshold to appropriately award the £15m in funding, the competition board may lower this threshold or consider not awarding the full available competition funding accordingly.

It is expected that projects that are currently closest to the commercial scale construction of SAF plants in the UK will be best placed to achieve the competition's objective. Therefore, applicants should note that the assessment process has been designed to prioritise selecting and supporting activities related to the near-term development of First-Of-A-Kind (FOAK) commercial SAF plants that require additional support to become "investor ready". To achieve this projects currently at the **FEED-FOAK** stage of development will be marked preferentially for some scoring criteria during the scoring process.

However, eligible projects that are not currently at a FEED-FOAK stage and that are able to demonstrate a clear alignment with the competition's objective of supporting the future development of SAF at scale are still expected to be able to remain competitive within the scoring process. The competition will also allocate up to £2m from the £15m fund specifically

for projects (both at the demonstration and FOAK commercial scale) that are at the feasibility stage of development (details below). This is so that the competition is able to ensure the future pipeline of UK SAF projects remains strong, including with a diverse range of technologies supported.

In addition, projects that provide **match funding** across all stages of scale and development stages will also be prioritised during the assessment process; with higher marks available to projects able to offer higher proportions of match funding during the Funding Period. However, the DfT reserves the right to fund projects at up to 100% of total costs of eligible work where appropriate and where compliant with subsidy control requirements.

Table 2: Scoring criteria

Category	Scoring criteria
Project relevance (5%)	1. Clarity of the project objectives and relevance to the competition objectives
Technical approach (25%)	2. Credibility of the technological approach, clarity of the project data and justification with relevant pilot/demo plant data
	3. Level of innovation and progress as a result of the proposed plant
	4. Level of progression of the fuel pathway through ASTM certification process
	5. Level and evidence of GHG emissions savings of the proposed plant (and expected GHG emissions savings at commercial scale if different)
Commercial approach (20%)	6. Level of progression towards construction of a FOAK commercial plant as a result of the funded activities
	7. Potential and case for economic benefits of the proposed plant during construction and operation, including CAPEX, OPEX, revenues of plant and local economic benefits
	8. Potential and case for benefits of future deployment of the technology within the UK, and benefits from export markets
Project Implementation (50%)	9. Credibility of current status of the project and readiness to proceed with funded activities
	10. Confidence in skills and experience of the project team
	11. Appropriateness of project management and governance structure and partners roles
	12. Appropriateness and credibility of the project work plan
	13. Detailed understanding of the project risks and their management
	14. Credibility of detailed project costing for the funded activities
	15. Strength of case for the DfT funding, including level of match funding leveraged and status of securing funding

Funding allocation

Following the scoring of applications, the competition board will allocate grant offers to a selection of winning projects that have passed the 50% score threshold. The competition board will employ a portfolio approach for this allocation process which will consider scores received through the scoring process, including the scores received in respect of individual scoring criterion, and the breadth of technology pathways represented by the applications that meet the quality threshold. This approach means that a project that achieves a lower assessment score may be selected for funding over higher scoring projects that use a SAF production

pathway for which one or more higher scoring applications have already been selected for funding.

The value of grant offers allocated to winning projects will also be at the discretion of the competition board and will also be subject to this portfolio approach. This may result in projects receiving grant offers at less than their original request where the competition board views projects may satisfactorily achieve some development objectives with a lower funding offer, and/or where a reduced funding offer would enable a wider portfolio of projects to be supported by the competition.

Applicants should note that nothing in this guidance document commits the DfT to award any applicant a grant offer either at all or of any particular amount or on any particular terms. The DfT reserves the right not to award any grant offers, in particular if the DfT is not satisfied by the quality of proposals received or if the funding assigned to the scheme is reallocated to other purposes. The DfT will not, under any circumstances, make any contribution to the costs of preparing proposals and applicants accept the risk that they may not be awarded any funding, or the amount of funding requested.

The competition board will provide brief reasons for its decisions to any applicant that it decides not to fund or to provide only part of the funds sought.

Feasibility stage funding pot

As stated, a £2m funding pot has set aside to support feasibility studies across all eligible TRL levels. Feasibility stage applications will only be considered for support under this funding pot if they pass the 50% quality score threshold. In addition, the competition board may choose not to use the full £2m in funding in line with the portfolio approach outlined above. Any unallocated budget from the feasibility study pot will be reallocated to the main funding pot.

Funding intensity

The DfT has set the maximum aid intensity at 100% of total costs although proposals that include match funding will be scored preferentially, with increased match funding able to score higher marks. The competition board may rely on funding intensity to decide funding allocation in marginal cases. All applications for funding are subject to assessment and there is no guarantee that successful applicants will be offered the full amount they have applied for.

Maximum and minimum awards

While there is no maximum award, the total grant funding available is £15m. There is also no minimum award threshold and no guarantee that the full £15m will be awarded.

Interaction with other funding schemes

Grant schemes: It is possible to apply or to have applied for other grant scheme funding so long as Subsidy Control rules are not breached. This may mean a single eligible project applies for grants from two schemes up to the maximum subsidy control intensity, or that grants are applied to different elements of a project, so long as the base eligible costs do not overlap. In particular, projects previously or currently being supported under the Future Fuels for Flight and Freight Competition (F4C) or the Advanced Biofuels Demonstration Competition (ABDC) are required to demonstrate how funding through this competition will directly support different work even if for the same plant development project.

Loan schemes: Applicants that have received loans from other schemes remain eligible for GFGS funding as long as the loans received were provided on a commercial basis (i.e. including an appropriate rate of interest).

Please contact the competition delivery partner if you have any questions regarding the eligibility of your project: GFGS@ricardo.com. Anonymised questions and responses will be published on an FAQ page available on the [competition website](#).

Due Diligence

For all valid applications, the applicants and each partner in any consortium may be subject to due diligence and must provide all information required in the competition application form to facilitate this process, plus any additional information requested during the assessment period. Due diligence may also be carried out on sources of match funding (where appropriate). Applications from any organisation failing the test (including failure to provide requested information within the time frame requested) or involving a consortium that includes any organisation failing the test, may be ruled ineligible.

Approval of applications

If your application for funding is successful, you will receive a grant offer letter. 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 applications are not successful, we will send you a letter informing you that your application has been unsuccessful with brief reasons for decisions taken. All decisions made by the DfT are final.

Grant payments

The grant offer letter sets out all terms of the funding and the duties and responsibilities of both parties. The DfT will only release milestone-based funds after signing of the grant offer letter. Grantees must follow the conditions in their agreements on release and use of funds. Applicants must also satisfy the due diligence, financial and organisational checks required prior to receiving public funds.

The DfT recognises the importance of remaining flexible and pragmatic throughout project implementation and will consider changes to ensure the most effective use of funds. The 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. The 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 extensions to the project timescales are expected given that competition funding is tied to the 2021/22 Financial Year. Where circumstances outside the control of grantees occur that impact on delivering the expected outputs in the Funding Period, grantees must inform their delivery partner 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, on exception you may submit evidence of lack of funds and the payment can be made in advance with the DfT's written agreement. 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

Each winning project will be provided a Monitoring Officer from the GFSGS delivery partner team. The grantee must maintain regular communication with their nominated Monitoring Officer.

Short updates from winning projects will include:

- A brief monthly narrative (due by the 15th of the following month). This may take the form of a written update, a call with the Monitoring Officer or both.
- 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 GFSGS competition on behalf of the 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 GFSGS competition evaluation. This may be carried out by a third party on behalf of the DfT and the grantees will be required to participate.

Intellectual property rights

IP developed within the project remains the property of the applicant/consortium. Any information provided to the DfT may be subject to the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or other legislation. The DfT will work with applicants to ensure that no commercially sensitive information is disclosed as far as possible under the law.

APPENDIX A: Currently certified ASTM SAF pathways, and those in the qualification process

Note that not all these pathways will be eligible for the competition – additional feedstock and GHG savings eligibility requirements apply. Additional pathways could also be considered.

ASTM Abbreviation	ASTM Description	Certification Status
FT-SPK	Fischer-Tropsch - Synthetic paraffinic kerosene	Certified
FT-SPK/A	Fischer-Tropsch - Synthetic paraffinic kerosene with added aromatics	Certified
HEFA-SPK	Hydroprocessed Esters & Fatty Acids - Synthetic paraffinic kerosene	Certified
HFS-SIP	Hydroprocessing of Fermented Sugars - Synthetic Iso-Paraffinic fuels	Certified
ATJ-SPK	Alcohol-to-Jet Synthetic Paraffinic Kerosene	Certified
CHJ	Catalytic Hydrothermolysis Synthesized Kerosene	Certified
HC-HEFA-SPK	Hydrocarbon-hydroprocessed Esters and Fatty acids	Certified
	Co-processing of up to 5 vol% FT waxes from MSW	Certified
	Co-processing of up to 5 vol% oils and fats in a refinery to produce kerosene	Certified
HDO-SAK	Hydro-deoxygenation Synthetic Aromatic Kerosene	Assessment
HFP HEFA-SK	High Freeze Point Hydroprocessed Esters and Fatty Acids Synthetic Kerosene	Assessment
IH ²	Integrated Hydropyrolysis and Hydroconversion	Assessment
ATJ-SKA	Alcohol-to-Jet Synthetic Kerosene with Aromatics	Assessment

Source: http://www.caafi.org/focus_areas/fuel_qualification.html

APPENDIX B: TRL definitions and Demo/Pilot vs commercial scale definitions

TRL	Type of plant	Description
1	-	Basic principle observed
2	-	Technology concept formulated
3	Lab	Experimental proof of concept
4	Lab	Technology validated in lab
5	Pilot	Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
6	Demonstration	Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
7	Demonstration	System prototype demonstration in operational environment
8	FOAK Commercial	System complete and qualified
9	Commercial	Actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies)

Source: HORIZON 2020 – WORK PROGRAMME 2014-2015 General Annexes Page 1 of 1 Extract from Part 19 - Commission Decision C(2014)4995 https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf

APPENDIX C: Project Lifecycle Stage Definitions

Note that the below table is intended to help a project clearly identify which stage of the project lifecycle they are at. It is not intended to give a complete breakdown of all outputs and outcomes expected at each stage – for example, outputs relating to planning permission, financing activities, supply and offtake agreements would also be expected in addition to the engineering outputs defined below, developed to a degree commensurate with the project’s lifecycle stage.

Lifecycle stage	Typical engineering outputs at this stage	Typical outcomes at this stage
Feasibility (Also known as FEL-1)	<ul style="list-style-type: none"> • Options appraisal • Material balance • Energy balance • Project charter • Order of magnitude CAPEX and OPEX assessment 	Determine the design options available and the feasibility of each design option. Several possible locations for the plant will have been evaluated at high level. Feasibility studies should enable the development of an AACE (Association for the Advancement of Cost Engineering) Class 5 Cost Estimate
Pre-FEED (Also known as FEL-2)	<ul style="list-style-type: none"> • Preliminary equipment design • License cost (if needed) • Preliminary layout • Preliminary project schedule • Preliminary CAPEX/OPEX estimates 	Identifying, defining and selecting the optimum business design/solution for a project’s development. A specific location for the plant will have been identified. Pre-FEED usually contains sufficient elements to perform a CLASS 4 or advanced 4 AACE (Association for the Advancement of Cost Engineering) cost estimate based on the outputs
FEED (Also known as FEL-3)	<ul style="list-style-type: none"> • Purchase-ready major equipment specifications • Definitive CAPEX and OPEX estimate (+/- 15 - 20%) • Project execution plan • Preliminary 3-D model and advanced layout • Process lists (I.e. electrical, civil, mechanical, instrumentation, piping) • Preliminary Hazard Assessment on design (i.e. HAZOP) 	The outcome of this stage is used as the basis for bidding for Execution Phase Contracts (EPC, EPCI, etc) and used as the project design basis. A specific location for the plant will have been evaluated. FEED allows a class 3 AACE cost estimate.

APPENDIX D: Eligible and Ineligible Project Work

Eligible activities and costs

- Technical reviews, in-depth research and feasibility studies
- Strategy work and option appraisals
- Process and Instrumentation Diagrams (P&IDs) development
- Hazard and Operability Study (HAZOP), safety and ergonomic studies
- Other plant design and plant modelling work
- Feedstock availability assessments
- Developing detailed GHG emissions projections for plants
- Obtaining estimates for goods and services
- Economic assessments (including detailed revenue and cost modelling)
- Plant site identification and review
- Permitting and planning application work
- Developing detailed project plans, risk assessments, and detailed budgets
- Hosting meetings with potential consortia members
- Formalising a consortium or partnership arrangement
- Hosting meetings between applicant consortia and others necessary to further the development of the project
- Securing private sector funding
- Addressing legal issues
- Progressing procurement to support eligible activities and costs

Ineligible activities and costs

- Any costs incurred before a grant offer letter has been signed with the DfT
- Purchased goods and services to build and commission the proposed plant
- 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.