



Department for
Business, Energy
& Industrial Strategy

Net Zero Innovation Portfolio: Industrial Fuel Switching Phase 2 Competition

Competition Guidance Notes

An SBRI Competition: prj_754



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Please note that references to the "Department" throughout these documents mean The Secretary of State for Business, Energy and Industrial Strategy acting through his/her/their representatives in the Department for Business Energy & Industrial Strategy (BEIS).

Any reference to “programme” is a reference to the Net Zero Innovation Portfolio: Industrial Fuel Switching programme, run by the Department for Business Energy and Industrial Strategy (BEIS).

Any reference to “portfolio” is a reference to the Net Zero Innovation Portfolio (NZIP).

Supporting Documents

The following documents support this Competition Guidance and are available within the application form and at the competition website.

- Annex 1: SBRI Terms and Conditions
- Annex 2: Declarations
 - a. Declaration 1: Statement of non-collusion
 - b. Declaration 2: Form of Tender
 - c. Declaration 3: Conflict of Interest
 - d. Declaration 4: Standard Selection Questionnaire
 - e. Declaration 5: Code of Practice
 - f. Declaration 6: The UK General Data Protection Regulation Assurance Questionnaire for Contractors
- Annex 3: IFS Project Cost Breakdown Form
- Annex 4: Word Version Application Form (to view only, do not submit)
- Annex 5: Partner Information Form

1 Industrial Fuel Switching Competition – Overview

The [Industrial Fuel Switching \(IFS\) Competition](#), up to £55 million, forms part of BEIS' £1 billion [Net Zero Innovation Portfolio \(NZIP\)](#), which aims to accelerate the commercialisation of innovative clean energy technologies and processes through the 2020s and 2030s. Switching industry to lower carbon fuels will be critical for meeting the UK's legally binding commitment to achieve Net Zero by 2050.

The IFS Competition aims to support the development of fuel switching and fuel switch enabling technologies for UK industry. This includes fuel switches from high carbon fuels to hydrogen, electricity, biomass, and other low carbon fuels. It will be open to all industrial sectors and fuel switching technology developers.

1.1 Competition Lots

The funding for this competition (see Procurement Route below), is divided into three Lots, to ensure development of a wide portfolio of solutions:

1. Fuel switch and fuel switch enabling technologies for hydrogen,
2. Fuel switch and fuel switch enabling technologies for electrification,
3. Fuel switch and fuel switch enabling technologies for biomass, and/or wastes, and/or other net zero compatible fuels.

Further details on the scope and eligibility can be found within this Guidance document. The competition will fund solutions which are at Technology Readiness Level (TRL) 4 to 7 at the start of the project and are seeking to reaching at least TRL 7 at the end of the demonstration project. TRL definitions are provided in Appendix 1: Technology Readiness Levels.

1.2 Procurement route – SBRI

The projects will be funded through a Small Business Research Initiative (SBRI)¹ pre-commercial procurement process, providing 100% funding to applicants. Therefore, 100% of any project costs eligible for Phase 2 must be funded by BEIS. Consequently, match-funding and in-kind contributions should not form part of an application or project. As per the SBRI process, the competition has been run in two consecutive phases – Phase 1: Feasibility, Phase 2: Demonstration. This guidance document relates solely to Phase 2 of the competition.

¹ This competition is **not** limited to small and medium sized organisations.

Phase 1: Feasibility

The purpose of the Phase 1 feasibility studies was to develop the industrial fuel switch or enabling technology concept. The feasibility studies supported the development of the project team's understanding of the core and ancillary technology, the performance of the technology, the market potential, the route to market (including competition) and costs and delivery plan for Phase 2. A strategic level public report detailing the key findings will be published on the gov.uk website following project completion. Twenty-one projects were funded under Phase 1, with a total of up to £5.6m of funding provided under this phase, to demonstrate the feasibility of the proposed solutions.

Phase 2: Demonstration

The purpose of Phase 2 is to support the physical demonstration of fuel switch or fuel switch enabling solutions for an industrial process on an industrial site, including engineering design, build, trial, decommissioning, market assessment, and knowledge dissemination. Phase 2 is open to all applicants, whether or not they have taken part in Phase 1.

The budget for each demonstration project will be between a typical minimum of £1 million² and a fixed maximum of £6 million. The total budget allocated for Phase 2 will be up to £49.4 million.

1.3 Allocation of funding between Lots

Each Lot will be allocated a maximum budget, which will be assigned to projects in order of merit until the funds in that Lot run out. If there is remaining budget in a Lot (due to a lack of applications or funding requested, or applications failing to score above the 60% overall threshold or a minimum of 2 in any given criterion), the remaining budget will be transferred to a central pot. Once the maximum budget has been reached in each of the other Lots, all remaining/unfunded projects across the Lots will be combined and ranked in order of merit. The remaining funds in the central pot will then be assigned against this order of merit to projects (with a minimum 60% threshold mark and minimum of 2 in any given criterion) until money runs out.

A lead organisation may enter up to a maximum of three applications as the lead, across all Lots. For example, this could be three applications under the same Lot, or three applications spread across the different Lots. Additionally, for a particular technology/solution being developed, only one application involving the provider/original equipment manufacturer will be allowed in any Lot. Further details on multiple applications are provided within section 3.3 of this guidance document.

² Exceptional Phase 2 project proposals below the minimum budget of £1 million may be considered so long as the proposal meets the goals of the competition and is of sufficient scale.

2 Competition Context and Objectives

2.1 Context

UK industry accounted for 16% (72 MtCO₂e) of UK greenhouse gas emissions in 2018³, making it the third largest emitting sector; meeting the Net Zero target requires a near-complete decarbonisation of UK industry. The Committee on Climate Change (CCC) estimated that decarbonising industry will take c. £8 billion public and private investment a year⁴. This competition aims to address this by providing innovation funding, as part of the £1 billion [Net Zero Innovation Portfolio](#), to develop fuel switching and fuel switch enabling solutions for industry, while building the UK's decarbonisation skills and supply chain. The NZIP is outlined in the [Energy White Paper: Powering our Net-Zero Future](#) and it runs until March 2025, with the aim to accelerate the commercialisation of innovative clean energy technologies and processes through the 2020s and 2030s.

This competition supports the [Industrial Decarbonisation Strategy](#) (March 2021), which identified that government investment is required to advance the development of low carbon technologies to address the barrier around uncertainties associated with novel technologies for the private sector. Industrial decarbonisation technologies need to be ready for large-scale deployment from the 2030s, which is why government is supporting innovation now.

The strategy identified five areas of near-term innovation priorities: fuel switching, carbon capture utilisation and storage (CCUS) for industry, energy and resource efficiency improvements (including digitalisation), advanced technologies, and product innovation. This funding will support Action 6.1 of the Industrial Decarbonisation strategy: to “Support innovation in fuel switching technologies, including low carbon electricity, hydrogen and biomass”. The remaining innovation priorities are addressed by other competitions in the [Net Zero Innovation Portfolio](#).

The [Energy Innovation Needs Assessment](#), published in October 2019, highlighted fuel switching as an innovation priority, identified as having a large impact on reducing costs/ deployment barriers across a range of industries. The research also stated that all industries have the potential for fuel switching, but at different economic costs.

In the mid to longer term, technologies and solutions developed as part of this innovation competition may become ready for further roll-out, especially if the resulting products can be marketed and sold as ‘low carbon’. Other developed solutions may go on to seek further government deployment funding or seek private investment for further development and roll-out.

³ [The Industrial Decarbonisation Strategy](#), p.16 analysis based on [Final UK Greenhouse Gas Emissions](#), 2018
⁴ [CCC Net Zero Technical Report](#), May 2019, p.105. Modelling compares a ‘do nothing’ scenario with a ‘further ambition’ scenario (cutting industry emissions to 10 MtCO₂e by 2050).

The [IFS competition](#) will support the development of fuel switching and fuel switch enabling technologies across a wide range of the UK's industrial sector, to enable industry to reach the UK's net zero target.

2.2 Competition Objectives

The IFS competition aims to achieve the following objectives:

1. Demonstrate potential for industrial greenhouse gas emissions reduction via industrial fuel switching technologies for UK industry to reach net zero.
2. Demonstrate the potential commercial viability of industrial fuel switching solutions.
3. Gather evidence to inform future industrial decarbonisation policy making, such as supporting the delivery of the [Industrial Decarbonisation Strategy](#), [Industrial Energy Transformation Fund](#), and further understanding the use of hydrogen, electricity and other low-carbon fuels in industry.
4. Increase awareness of potential industrial fuel switching solutions and technologies, by collecting and disseminating findings across industry and investors.
5. Strengthen supply chains and skills for industrial decarbonisation around the UK.

2.3 Project Scope

The Competition will fund industrial fuel switch and industrial fuel switch enabling solutions, at TRL 4 to 7 at the start of the project (see Appendix 1: Technology Readiness Levels). It is being delivered over two phases; Phase 1 (total budget up to £5.6m) has supported 21 projects to scope and develop feasible demonstration projects that could be run in Phase 2. Phase 2 (total budget up to £49.4m) will be an open competition, supporting the most promising proposals for physical demonstration of the industrial fuel switching or fuel switch enabling solution, whether or not they have come through Phase 1. Demonstrations can take place onsite or at suitable test facilities that simulate industry conditions. There is an expectation that demonstrations should take place in the UK, unless it can be proven that this is not possible. In all cases, by financial value, over 50% of the project funded should be conducted in the UK.

2.3.1 Demonstration

Demonstration projects should either demonstrate an entire fuel switching solution, key components of a system, a prototype in a relevant environment, or further develop and demonstrate the physical design of new solutions to enable an industrial process to be switched from using high to low carbon fuels. There is an expectation that demonstrations should occur on an industrial site in the UK, unless it can be proven that this is not possible. In all cases, over 50% of the project funded should be conducted in the UK. Companies will also develop technical and business plans for future market deployment.

A strategic level public report detailing the key findings and outcomes will be published on the gov.uk website upon project completion. The budget for each demonstration project will be between a typical minimum of £1 million and a maximum of £6 million. The total budget allocated for Phase 2 will be up to £49.4 million. Phase 2 project final reports must complete by 28th February 2025. Final payments and all other programme activities must then be completed by 31st March 2025.

2.3.2 Competition Lots

The competition will be split into three Lots, as per Table 1. The table includes examples of potential projects, but the competition is not limited to this list.

Applicants should select the Lot that their project falls into when submitting their application. If the application falls under multiple Lots, the applicant should select the Lot that best represents the majority of the project work and fuel used. During assessment and moderation of applications, BEIS reserves the right to change which Lot a project is allocated to, if assessors deem this to be appropriate. In such an instance, funding will be allocated as outlined in 1.3, with the given application to be considered within its reallocated Lot. If funding remains unallocated in any Lot, BEIS will transfer this to a central pot and allocate that funding in order of merit to projects across all remaining Lots, as outlined in section 1.3.

Table 1: Lots, example projects and Phase 2 funding split

Lot	Examples (not exhaustive)	Funding available for Phase 2
1: Hydrogen Industrial fuel switch to hydrogen, or technology to enable this.	Examples (non-exhaustive) may include: <ul style="list-style-type: none"> • Develop and test innovative industrial hydrogen appliances (e.g., hydrogen boilers, kilns, furnaces, CHP, dryers). • Direct reduction with hydrogen (steel manufacturing). • Develop and test hydrogen fuel switch enabling technologies for industrial sites, such as storage solutions and fuel delivery/distribution and/or control systems. 	£22.2m (~45% of total budget)
2: Electrification Industrial fuel switch to electricity (grid or local renewable), or technology to enable this.	Examples (non-exhaustive) may include: <ul style="list-style-type: none"> • Develop and test industrial electric technologies (e.g., electric boilers, kilns, furnaces). 	£17.8m (~36% of total budget)

	<ul style="list-style-type: none"> • Develop and test microwave, infrared or induction heating systems. • Storage systems or other infrastructure that supports fuel switching to renewable electricity. • Develop and trial innovative industrial heat pumps. 	
3: Biomass, Waste, Other Industrial fuel switch to biomass or waste fuel, or technology to enable this. Fuel switch to another fuel not listed, which must be compatible with Net Zero, or the technology to enable this.	Examples (non-exhaustive) may include: <ul style="list-style-type: none"> • Direct reduction using sustainably sourced biomass/waste materials. • Sustainably sourced biomass or waste combustion, compatible with CCUS in future (where other low carbon options are not viable). • Use of other fuels such as ammonia or e-fuels to power industrial processes. 	£9.4m (~19% of total budget)

If a project falls under multiple Lots, applicants should select the Lot which is most applicable to the majority (greater than 50%) of the project work. During assessment and moderation of applications, BEIS reserves the right to change which Lot a project is allocated to, if assessors deem this to be appropriate.

2.3.3 Hydrogen

Where the proposed decarbonisation fuel switch is to hydrogen, applicants should engage with potential hydrogen suppliers to consider where they will source hydrogen supply for a trial, how this would be delivered within the timescales available, and how any potential challenges related to hydrogen supply will be overcome. Therefore, it is important that applicants engage with an organisation that can supply hydrogen and provide evidence of this engagement as part of their bid. A non-exhaustive list of hydrogen suppliers and points of contact are given in Appendix 4: Hydrogen Suppliers. However, applicants are encouraged to engage with whichever supplier they choose, whether or not they are listed in Appendix 4: Hydrogen Suppliers. If hydrogen suppliers are interested in being listed here, they are welcome to contact BEIS at industry.innovation@beis.gov.uk by 28 October 2022.

As hydrogen production is expected to develop and decarbonise, for the purposes of proving an industrial fuel switching innovative technology, any supply of hydrogen, including electrolytic hydrogen or that produced via methane reformation with or without CCUS, will be considered for this competition. However, applicants are expected to set out a path to low carbon hydrogen beyond this competition in their application. Additionally, where it enables the industrial fuel switch and does not become the main focus of the project or use of funding, hydrogen storage will be considered as part of a project proposal for this competition.

Applications for industrial fuel switching to any blend of hydrogen and other fuels will be eligible for this competition. See Section 2.3.2 Competition Lots for guidance on projects which span across lots.

2.3.4 Electrification

Electrification demonstration projects should provide evidence that any potential constraints (i.e. grid capacity) on electricity supply have been considered and can be overcome by the project team within the funding period. Where it enables the industrial fuel switch and does not become the main focus of the project or use of funding, energy storage and/or renewable supply will be considered as part of a project proposal for this competition.

Taking into consideration potential technical and cost issues with electricity supply from the grid or local renewables, BEIS will consider other sources of electricity for the purposes of demonstration, as long as the applicant can show a long-term plan for connecting to the grid or sourcing low carbon electricity.

2.3.5 Biomass, Waste, or Other

Where the decarbonisation fuel switch of choice is to biomass, waste, or other, applicants must firstly prove that these options are compatible with the UK's Net Zero by 2050 target. They must also justify the reasons for choosing these over alternative low carbon options, that are within the scope of the IFS Competition. As an example, a justification could include an explanation that the industrial site does not have access to local gas or electricity grid infrastructure and it is unfeasible to establish a connection, evidence that the capacity of the local electricity grid infrastructure is insufficient to meet the needs of the site, or the site has a demand that cannot be met by electricity or other low carbon alternatives.

2.3.5.1 Biomass

The IFS Competition will consider biomass proposals where these relate to a solid, liquid or gaseous fuel of biological origin, that is either purposely created for energy use (virgin) or produced as a co-product of other sectors (residual).

Applications for projects that involve fuel switching towards virgin or residual biomass (as described above) will be supported in situations where:

- the project involves a switch away from an original fuel with a higher carbon intensity than the proposed biomass fuel, and evidence is provided to prove that other low carbon alternatives are unfeasible,
- the application discusses the future CCUS compatibility of the proposed technology; either proving that it will be compatible with future CCUS deployment, or that this is not possible and no other low carbon alternatives are available.
- the source of the biomass considered is sustainable and the application shows that the biomass fuel used will deliver greenhouse gas reductions that will not result in adverse environmental impacts, such as air pollution, soil erosion, or deforestation, through compliance with existing local and national environmental and air quality regulation, as

well as the biomass sustainability criteria used in Schedule 3 of the Renewable Heat Incentive Scheme Regulations 2018.

As well as meeting the above requirements, for industrial fuel switches to biogas to be permitted for consideration, applications must also provide justification that:

- innovation is required,
- the project site is not on the local or national gas grid, and
- the biogas is sourced from a dedicated supply that could not otherwise be injected into the gas grid.
- Industrial fuel switches involving gasification of biomass and/or waste are also permitted for consideration, provided that the gas produced is used for an industrial switch on site and the biomass and biogas source meets the eligibility criteria above. Proposals that do not meet all the relevant requirements above will not be eligible for funding.

2.3.5.2 Waste

There are many types of waste streams which can be used as a fuel source, some may overlap with categories of biomass fuels. Where the waste fuel is biological in origin, the proposal must comply with the biomass eligibility criteria (as stated above) and the air quality criteria (as stated in section 2.4.3: Air Quality).

Applications for projects that involve switching towards waste fuels, will be supported in situations where:

- applicants can justify why there is no better use for the waste product, including whether there are better alternatives, such as waste minimisation,
- the project involves a switch away from an original fuel with a higher carbon intensity than the proposed waste fuel and evidence is provided within the application to prove that no other low carbon alternatives are feasible, and
- the application discusses the future CCUS compatibility of the proposed technology; either proving that it will be compatible with future CCUS deployment, or that this is not possible and no other low carbon alternatives are possible.

Industrial fuel switches involving gasification of waste are also permitted for consideration, provided that the gas produced is used for an industrial switch on site, and the waste source meets the eligibility criteria above.

2.3.5.3 Other

Applications for projects that involve switching towards fuels that have not been specified within the scope will be considered where:

- assurances are provided that the proposal fits with net zero ambitions and the industrial decarbonisation strategy,
- the fuel switch is not listed in the exclusions (section 2.3.6),

-
- evidence is given to show that the proposal is sustainable (i.e., the fuel is sustainably sourced),
 - if the proposed fuel switch involves a type of biomass or waste, all sustainability criteria in sections 2.3.5.1 and 2.3.5.2 are met,
 - the fuel switch meets the relevant health, safety and environment, planning, and air quality criteria, including those outlined throughout Section 2.4: Environmental, Health, Safety and Planning Considerations.
 - innovation is required.

An example fuel which would fall under this lot could include ammonia, but most low- or no-carbon fuel not listed in the Exclusions (section 2.3.6) should qualify.

2.3.5.4 CCUS Requirements for Switches to Biomass, Waste, or Other Fuels

Where relevant, applications focussing on fuel switches to biomass, waste derived or other low carbon fuels (not electricity or hydrogen), should prove that they will be compatible with future CCUS deployment. The competition is not designed to result in carbon emitting technologies that cannot be retrofitted with CCUS, hence, proposals in the 'Biomass, Waste, or Other' Lot which are able to prove future CCUS compatibility in the application, will be prioritised for funding. It is only not essential to prove such compatibility if switching to a zero-carbon fuel, or if it can be proved that future CCUS is not possible and no other low carbon options are available.

For further information on CCUS, in May 2022 BEIS, AECOM and The University of Sheffield published a [study reviewing next generation carbon capture technologies for industrial, waste and power sectors](#).

2.3.6 Exclusions

The following will be excluded from this competition:

- Energy and resource efficiency projects without a fuel switch (including waste heat recovery). A fuel switch that results in energy efficiency is encouraged.
- Fuel switches that are not compatible with achieving Net Zero by 2050.
- Fuel switches which involve the gasification or use of fossil fuels.
- Fuel switches to unsustainable biomass sources.
- Fuel switches to biomass that are incompatible with future CCUS, unless it can be proved that no other low carbon alternatives are available.
- Switching of feedstocks, except where feedstock provides chemical energy to drive the process (e.g., reduction of iron).
- Fuel switches to biomethane and/or synthetic methane, where the site is on the current gas grid and little or no innovation is needed for end users.

-
- Projects that convert biomass to biofuels for later uses that are not part of a fuel switch.
 - Projects to upgrade to biomethane for injection into the gas grid.
 - Fuel production for the fuel switch, unless this is innovative, enables the fuel switch, and fits within the competition budget without being the main focus of the project.
 - Carbon capture, utilisation, storage (CCUS), unless this enables the fuel switch and fits within the competition budget.
 - Fuel switches that do not power an industrial process, such as for transportation, domestic heating, or lighting.

2.4 Environmental, Health, Safety and Planning Considerations

Applicants will be required to consider the environmental, health and safety impacts as well as planning requirements of their solution and the regulations which must be adhered to. Some details regarding these requirements are outlined below and more details, with signposting to environmental considerations and regulations, can be found in Appendix 5: Environment Agency Signposting to Environmental Considerations and Regulations.

The [Environment Agency](#) is the principal regulator on environmental matters in England. The environmental regulators for Scotland, Wales and Northern Ireland are the [Scottish Environment Protection Agency](#) (SEPA), [Natural Resources Wales](#) (NRW) and the [Northern Ireland Environment Agency](#) (NIEA), respectively. We strongly encourage applicants, as early as possible, to consider the possible environmental impacts of proposed projects, and ways to minimise any negative impacts, to ensure that sufficient detail can be provided at application stage.

2.4.1 Health, Safety and Environment

Applications must evidence that the project being proposed will comply with (and ideally go over and above) all relevant health, safety, and environmental regulations. As a starting point, potential applicants should consider the Environment Agency advice and regulations signposted to in Appendix 5: Environment Agency Signposting to Environmental Considerations and Regulations.

2.4.2 Planning

Applications must evidence that they have considered the appropriate national and local planning regulations for the deployment of their demonstration and show how they aim to ensure the appropriate permissions will be obtained in line with their project schedule.

2.4.3 Air Quality

Applications should demonstrate that applicants have considered the impacts of the fuels and processes associated with their project and the targeted technology on air quality, including within their local area.

Applicants must prove that they will meet (and ideally go over and above) existing local and national air quality regulations, to reduce emissions and mitigate impacts that are damaging to air quality. The response should also provide assurance that there is scope for the project/technology to be compliant with more stringent air quality regulations, which may be a requirement in future.

Where relevant, applications should pay attention to the damaging air pollutants that the UK currently has national emission reduction commitments for, including:

- fine particulate matter (PM2.5),
- ammonia (NH₃),
- nitrogen oxides (NO_x),
- sulphur dioxide (SO₂), and
- non-methane volatile organic compounds (NMVOCs).

Although other air pollutants may need to be considered, fine particulate matter (PM2.5) will typically be relevant to biomass or waste projects, whilst nitrogen oxides (NO_x) are likely to be most relevant to hydrogen fuel switching, and ammonia (NH₃) may be relevant, if used as a fuel itself or for a hydrogen delivery mechanism.

The gov.uk website provides [general information](#) on air quality and [guidance](#) on how planning can take air quality considerations into account, such as national and local regulations. As air quality is a devolved matter, regulations may vary amongst the devolved administrations.

3 Competition Timetable, Application and Assessment Process

The Competition funding will be awarded using the Small Business Research Initiative (SBRI) approach. SBRI is a well-established pre-commercial procurement process that enables the development of innovative products and services in response to specific challenges faced by government departments and public-sector bodies. Successful business partners receive finance to develop their innovative ideas, generating new business opportunities and routes to market. This competition and the SBRI approach are not limited to small and medium sized organisations.

An SBRI will fund 100% of eligible costs up to the maximum of £6,000,000.00 per project for Phase 2. Exceptional Phase 2 project proposals below the minimum budget of £1 million may

be considered so long as the proposal meets the goals of the competition and is of sufficient scale.

3.1 Phase 1 Feasibility – Timetable

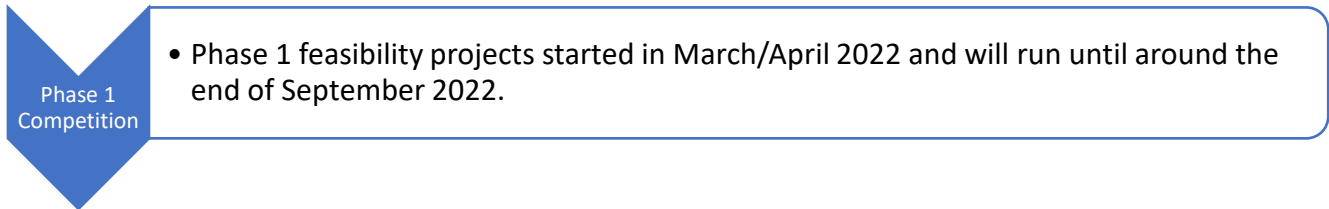


Figure 1: Timetable for Phase 1

3.2 Phase 2 Demonstration – Timetable

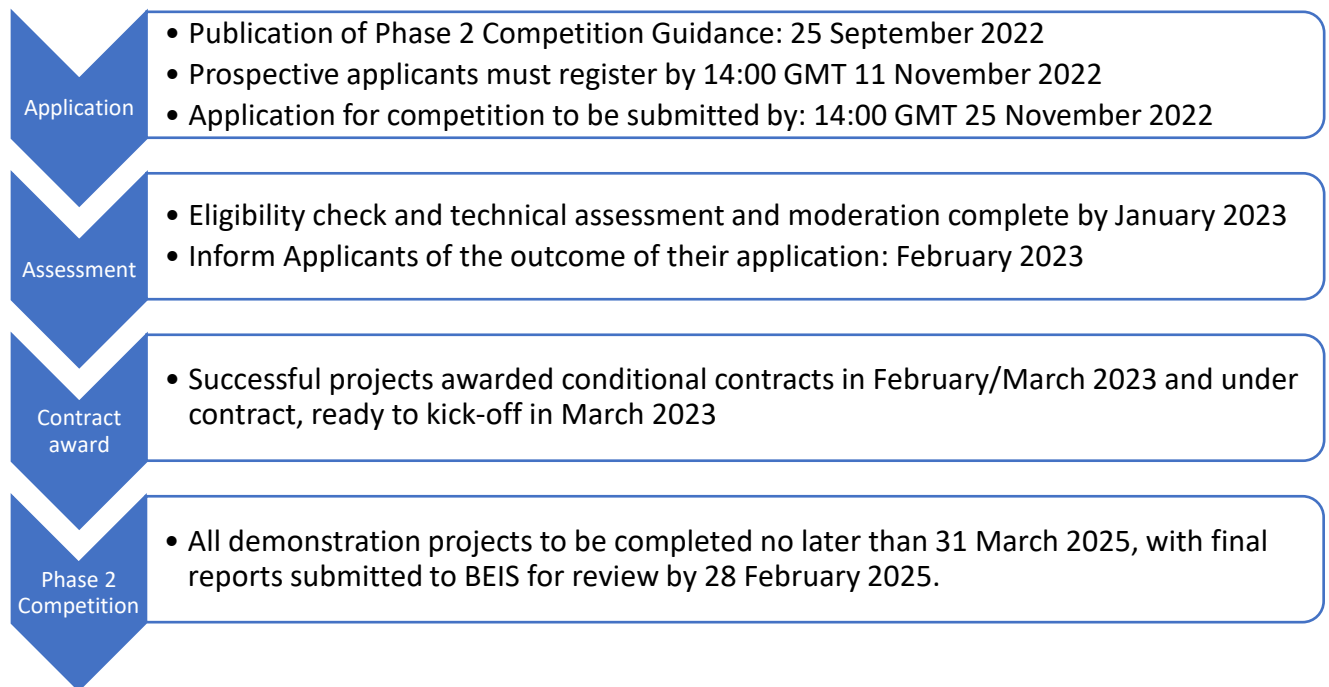


Figure 2: Timetable for Phase 2

3.3 Stage 1: Application

Phase 2 Submissions

Phase 1 feasibility studies will be expected to strengthen the evidence used for the Phase 2 application process, however only the response to the Phase 2 application form will be used to assess and select the projects to be funded. Phase 2 uses similar assessment criteria to Phase 1; however, it is expected that costs and performance can be quantified and evidenced, with a greater focus on how the proposed demonstration will move the solution closer to

commercialisation. Phase 2 is open to those who did not participate in Phase 1 of this competition.

Prospective applicants must register their interest in applying to this competition by **14:00 GMT, 11 November 2022**.

Applicants must submit [the online competition application form](#), with supporting information by **14:00 GMT, 25 November 2022**. Applicants should explain their proposed industrial fuel switching solution, indicate the applicable Lot, and outline their proposed project for Phase 2. Further details about the application process and forms required to apply for this competition can be found in the Supporting Documents section. The notes below explain the details of the application process.

Questions about the Competition

If you have any questions on the competition process or require clarifications on the eligibility criteria after reading these guidance notes, please raise queries in the first instance through the online [Q&A form](#) for the competition.

All questions should be submitted by **14:00 GMT, 4 November 2022**. Questions submitted after this date may not be answered. We will reply to any queries which, in our judgement, are of material significance through an anonymised Q&A sheet published on our [website](#) by **17:00 GMT, 9 November 2022**, so there is sufficient time to include the responses in the applications.

Please see Section 14: Further Instructions to Bidders for further instructions on amendments to the competition documents. All applicants should take these replies into consideration when preparing their own applications and we will evaluate applications on the assumption that they have done so.

Online Registration Form

You must first register via the online [registration form](#) to be entered into this Competition. Once the [registration form](#) is submitted you will receive a password to the [online application form](#). Those applicants that do not register will not be able to access the [online application form](#) and hence will not be able to apply/enter the application/assessment process. Previous correspondence relating to Expressions of Interest or attendance at any Industrial Fuel Switching stakeholder events **does not** result in an automatic registration. **You must register to be entered into Phase 2 Demonstration by 14:00 GMT, 11 November 2022**, the online [registration form](#) will be closed after this time to new applicants. There is no obligation to submit an application if you register.

Submission of Application

The full application for the Competition must be submitted online by the deadline: **14:00 GMT, 25 November 2022**. The [online application form](#) will be closed for submissions after this time.

No further materials can be submitted after this deadline. It is recommended that applicants allow sufficient time for file uploads to complete before the deadline.

Application documents: All application documents must be submitted via the [online application form](#). In the form there are opportunities to upload relevant supporting documents. In some sections we specify the supporting information we would like to see uploaded. For more information, see Annex 4: Word Version Application Form.

Submission Content/Checklist

Each Phase 2 online application must include the following:

- Completed Application Form (the online application form can be found [here](#)).
- Completed Project Finance/Cost Breakdown Form (this should be uploaded in the Finance Section of the assessed criteria in the application form).
- An organogram outlining the key roles of each partner and of team members.
- A CV package with brief CVs of lead individuals within the project team.
- A detailed project plan for the Phase 2 Demonstration project outlining:
 - a. The project and technologies being demonstrated
 - b. How the project will be delivered
 - c. Who is involved in the delivery of the project, highlighting key roles, individuals and organisations
 - d. The project schedule and key milestones
- A supporting, detailed Gantt chart must be uploaded in the Project Plans section of the assessed criteria in the application form.
- Completed risk register for the project proposed to be uploaded in the Project Risks section of the assessed criteria in the application form.
- Completed development plan, outlining the project's plan for further development, commercialisation, and exploitation.
- Preferred: letters of support from OEMs/fuel suppliers/key sub-contractors. These will support the assessment of your submission and will evidence engagement and/or agreements from collaborators who will be important in making sure the project is successful.
- Optional: supporting information can also be submitted in the final section before you submit your online application form, where they add background/ supporting information (this could include but not limited to relevant papers, assumptions/ calculations to back up the assertions made in the application) to the application. However, the assessment will be based on the information directly written in the online application; you should not assume that any additional information will be cross-referenced or reviewed as part of the selection process.
- Signed declarations (which can be found in Annex 2: Declarations).

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- You should endeavour to answer all the questions on the application in full. Some questions will be 'required fields' in the form and you will not be able to proceed to the next section until these questions are complete. Incomplete applications and any containing incorrect information may be rejected. However, BEIS may, at its discretion, request clarification before making a final decision. Any applications or supporting documentation received after the application deadline will not be considered. Applicants are advised to use the downloadable word version when working on a draft application, but also to ensure they leave sufficient time to copy their application to an online version and answer all the compulsory questions. Applicants are also advised to make an early start on the application process as it may take considerable time, and to use the [Q&A form](#) to clarify anything they are unsure about.

Submission Costs

You will not be entitled to claim from the Department any costs or expenses that you may incur in preparing your application, whether or not your application is successful.

Consortium Applications

Applications from consortia are welcome. **Only one submission should be submitted for each separate project application**, but all consortium partners are required to sign the completed application form for their project(s).

If a consortium is not proposing to form a separate corporate entity, the project partners must complete a Consortium Agreement (once a contract has been awarded) and also nominate a lead organisation who we will be the primary contact for BEIS. The project partners should draft a Consortium Agreement as early as possible, and these will need to be in place and signed within one calendar month of contract signature. Doing so will enable the Agreement to be signed as soon as possible following contract award, thus preventing any impact on project timescales. Please note that BEIS reserves the right to require a successful consortium to form a single legal entity in accordance with Regulation 19 of the Public Contracts Regulations 2015.

BEIS recognises that arrangements in relation to consortia and sub-contractors may (within limits) be subject to future change. Applicants should therefore respond in the light of the arrangements as currently envisaged and are reminded that any future proposed changes in relation to consortia and sub-contractors must be submitted in writing to BEIS for consideration on a case-by-case basis.

Multiple Applications

Lead organisations may enter up to a maximum of three applications as the lead, across all Lots. For example, this could be three applications under the same Lot, or three applications spread across the different Lots. Consortium members/Subcontractors may be part of multiple applications; however, it is the duty of the lead organisation to manage any arrangements with

regards to conflict of interests with sub-contractors/consortium members where those sub-contractors/consortium members are part of other applications. Where consortium members are part of multiple applications, the project consortium must provide assurance that the consortium members have sufficient resources to successfully deliver all projects they are involved in. BEIS must be content with the response from organisations involved in multiple projects prior to contract award. The lead organisation must also ensure that funding is not double counted for the same piece of work.

Lead organisations must also ensure that for a particular technology/solution, only one application is submitted by the technology provider/OEM or a consortium that includes that provider per Lot. It is the duty of all applicants to ensure that for a particular solution requiring development, only one application is submitted to the competition per Lot when applicants are part of multiple applications. BEIS will contact the relevant organisations involved which are believed to have entered multiple applications within a category for a particular technology from the same provider, to discuss a way forward. Any issues arising in this area will be discussed with the relevant parties. Please contact industry.innovation@beis.gov.uk using the subject “NZIP Industrial Fuel Switching” if you would like to discuss this before submitting an application.

Tender Validity

Phase 2 applications shall be valid for acceptance for a minimum of 180 calendar days from the submission deadline (14:00 GMT, 25 November 2022).

3.4 Stage 2: Assessment

Applications will initially be assessed against the Eligibility Criteria in Section 4: Eligibility for Funding. Applications which fail the Eligibility Criteria will not be assessed further, so it is essential to ensure that your project meets these criteria before you submit your application.

The eligible projects will be further assessed against the assessment criteria described in Section 6: Assessment Process and Criteria, by at least three reviewers, possibly including external reviewers⁵, these scores will then be moderated to determine an overall ranking list that will be used to allocate the funding for the Competition. To be eligible to receive funding, a project must be allocated a minimum total score of 60% against these assessment criteria and a minimum score of 2 (40%) against each individual sub-criterion. The projects will be funded in ranked order until money for that Lot runs out or all successful applications have been funded (whichever happens first). If there is remaining budget in a Lot (due to lack of applications or applications failing to score above the 60% threshold), this will be transferred to a central pot, where all remaining/unfunded projects across the Lots will be combined and ranked in order of merit, funding will be assigned against order of merit to projects with a

⁵ All external reviewers have signed up to adhering to strict conflicts of interest terms and will be subject to a confidentiality agreement.

minimum 60% overall threshold mark, minimum score of 2 against all sub-criteria and of sufficient quality.

After the assessment stage, all applicants will receive a short summary of key feedback regarding their applications irrespective of whether they are successful or not. BEIS aims to provide all feedback to applicants once all applications have been reviewed and assessed. Feedback will be given at the same time as the successful/unsuccessful letters are sent to the applicants.

3.5 Stage 3: Contract Award

Phase 2 contracts are expected to start in February/March 2023 and run to March 2025⁶. Please note that BEIS will not back date the start date of contracts.

Contract terms

The IFS Phase 2 contracts will be based on the BEIS pre-commercial procurement contract. The terms and conditions for the Phase 2 contract are provided in Annex 1: SBRI Terms and Conditions of these guidance notes. For this contract (Phase 2), clause 18.7 of the terms and conditions stipulates that liability is limited to 150% of the contract value. All applicants should review the clauses 27 and 28 of the terms and conditions, which contain important provisions relating to arising intellectual property and its exploitation.

By applying to the Net Zero Innovation Portfolio: Industrial Fuel Switching Phase 2 Competition, applicants are accepting the terms and conditions (listed in Annex 1), which are final and non-negotiable. If, prior to contracts being signed, applicants wish for any of the contractual terms and conditions to be explained, a BEIS official will respond to any such queries at that stage.

Consortium applications

With consortium applications, the lead company (project co-ordinator) will be the recipient of the contract (the supplier) and will be responsible for managing payment to the other project partners. If a consortium is not proposing to form a separate corporate entity, the project partners will need to complete a Consortium Agreement. Funding will not be provided by BEIS until a signed Consortium Agreement has been finalised between all its members and BEIS may decide to withdraw the funding offer if a Consortium Agreement is not signed within one month of contract signing and this starts to significantly impact the commencement of the project.

Consortium members/sub-contractors may be part of multiple applications; however, it is the duty of the lead organisation to manage any arrangements with regards to conflicts of interest with sub-contractors/consortium members where those sub-contractors/consortium members are part of other applications. Where consortium members are part of multiple applications, the

⁶ Start dates may vary depending on number of applications received.

lead organisation must ensure that the consortium member have sufficient resources to successfully deliver multiple applications/work packages. The lead organisation must also ensure that funding is not double counted for the same piece of work.

4 Eligibility for Funding

4.1 Competition Eligibility Criteria

To be eligible for Phase 2 funding, proposed projects must meet all the following yes/ no eligibility criteria:

1. Technology Lots

The technology must be in scope for the Lot applied for. If the project falls under multiple Lots, applicants should select the Lot which is most applicable to the majority (greater than 50%) of the project work.

Eligibility question: Is the technology in scope? YES/NO

2. Innovation and technology readiness

This competition is to support the development of innovative fuel switch and fuel switch enabling solutions. It is to support the development of technologies that are not yet commercial from Technology Readiness Levels (TRLs) 4 to 7 at the start of the project and are seeking to reach at least TRL 7 at the end of the demonstration project. Definitions for the TRLs which apply to this competition are in Appendix 1: Technology Readiness Levels.

Eligibility question: Will your technology / system be at TRL 4 to 7 at the start of the project and seeking to reach at least TRL 7 at the end of the project? YES/ NO

3. Technology scope

The focus of the Competition is to support the development and demonstration of innovative industrial fuel switching solutions, as detailed in section 2.3.

Exclusions: As listed in section 2.3.6, funding will not be provided for projects where the technology development focuses on:

- Energy and resource efficiency projects without a fuel switch (including waste heat recovery). A fuel switch that results in energy efficiency is encouraged.
- Fuel switches that are not compatible with achieving Net Zero by 2050.
- Fuel switches which involve the gasification or use of fossil fuels.
- Fuel switches to unsustainable biomass sources.
- Fuel switches to biomass that are incompatible with future CCUS, unless it can be proved that no other low carbon alternatives are available.

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- Switching of feedstocks, except where feedstock provides chemical energy to drive the process (e.g., reduction of iron).
 - Fuel switches to biomethane and/or synthetic methane, where the site is on the current gas grid and little or no innovation is needed for end users.
 - Projects that convert biomass to biofuels for later uses that are not part of a fuel switch.
 - Projects to upgrade to biomethane for injection into the gas grid.
 - Fuel production for the fuel switch, unless this is innovative, enables the fuel switch, and fits within the competition budget without being the main focus of the project.
 - Carbon capture, utilisation, storage (CCUS), unless this enables the fuel switch and fits within the competition budget.
 - Fuel switches that do not power an industrial process, such as for transportation, domestic heating, or lighting.

Eligibility question: Can you confirm that your application does not request funding for any of the technologies listed on the exclusions list? YES/NO

4. Project status

BEIS is unable to fund retrospective work on projects.

Eligibility question: Can you confirm that your application does not seek funding for retrospective work on this project? YES/ NO

5. UK Requirements

Projects can work with international partners, but they must be led by a UK-based company and over 50% by financial value of the project funded must be conducted in the UK.

Eligibility question: Is the project being led by a UK company, and will > 50% of the work by financial value be carried out in the UK? YES/NO

6. Additionality

Projects can only be funded where evidence can be provided to show that innovation would not be taken forwards (or would progress at a much slower rate) without public sector funding.

Eligibility question: Can you confirm that this project would not be taken forward (or would progress at a much slower rate) without public sector funding? YES/ NO

7. Contract size

Phase 2 – Demonstration phase (SBRI): Split into three Lots, with a total of up to £49.4m. The maximum funding available per project is £6,000,000.00 and the full project cost should be a minimum of £1,000,000.00 (this must cover 100% of eligible project costs), although exceptional proposals below the minimum budget of £1 million may be considered so long as

the proposal meets the goals of the competition and is of sufficient scale. Demonstration projects must be complete by 31 March 2025.

Eligibility question: Can you confirm the funding requested from BEIS for your Phase 2 project cost will be between £1m - £6m? YES/NO

8. Eligible project costs

SBRI is aimed at organisations working on research and development (R&D) of an innovative process, material, device, product, or service prior to commercialisation. Funding is available for R&D activities only, including related dissemination activity. Projects requesting funding for commercialisation activities are not eligible.

The full list of eligible project costs is set out in Appendix 2: Eligible/ Ineligible Costs and outlined in Section 4.4 of these guidance notes. BEIS must fund 100% of eligible project costs, no match or in-kind funding is allowed.

Eligibility question: Can you confirm that requested funding is for eligible costs and BEIS will fund 100% of those costs? YES/NO

9. Project end date

Phase 2 demonstration projects must be completed and approved by BEIS by 31 March 2025. Projects need to allow for time for the BEIS Monitoring Officer to review the final project report and documentation, this process can take up to a month and we therefore require final project reports to be submitted to BEIS by the 28 February 2025. This should be included in your project plan.

Eligibility question: Can you confirm that the project will meet the specified project end dates? YES/ NO

10. Risk-Benefit sharing

The sharing of risks and benefits is an important aspect to the SBRI approach. Projects receive financial support and retain any intellectual property generated, with certain rights of use retained by BEIS. Project outputs are also expected to be shared widely and publicly and project teams are not permitted to include profit in the eligible project costs.

Eligibility question: Do you agree to this approach? YES/NO

11. Delivering multiple projects

If project consortium member(s) are part of multiple successful applications, they must be able to deliver on them and they must not have applied for funding for the same piece of work more than once.

Eligibility question: If you or a member of your consortium are part of multiple successful applications, would you and/or they be able to successfully deliver all projects, if necessary? YES/NO/Not Applicable

12. Multiple applications

If you intend to submit multiple applications, you must comply with the following limits of entry into the competition:

- Lead organisations may only enter a maximum of three applications as the project lead, across all Lots. For example, this could be three applications under the same Lot, or three applications spread across the different Lots.
- A technology provider/OEM are limited to one application for a particular technology/solution requiring development per Lot.

12(a) Eligibility question: Can you confirm that you have only submitted a maximum of three applications as project lead, across all Lots? YES/NO

12(b) Eligibility question: If you or your consortium are part of multiple applications, could you confirm that the main technology being developed is different in each application i.e., only one application per particular OEM's technology has been submitted per Lot? YES/NO

13. Russian Involvement

Under current restrictions, this competition will not fund any procurement, commercial, business development or supply chain activity with any Russian entity as lead, partner or subcontractor. This includes any goods or services originating from a Russian source.

Eligibility question: Can you confirm that this will not be the case for your project? YES/NO

14. Registration

Prospective applicants must register their interest in applying to this competition by 14:00 GMT, 11 November 2022 through the online [Registration Form](#).

Eligibility question: Can you confirm that you have registered for this competition? YES/NO

Terms and Conditions: By applying for funding from this competition you confirm that have read the SBRI Terms and Conditions in Annex 1 and are prepared to enter into a contract on this basis. For more detail on this, please see Annex 2: Declarations.

4.2 General BEIS Procurement Conditions

There are six declaration forms which must be completed, covering issues such as: conflict of interest, non-collusion, bribery, corruption and fraud, GDPR assurance and overall agreement to the terms of this pre-commercial procurement process. It is advised that every consortium member completes and signs each declaration. However, within the application, declarations can be completed by the lead organisation on behalf of other consortium members, but it must

be clearly stated that this is the case. Sub-contractors are not required to complete these declarations. Note that in the event of the application being successful, all consortium members should then complete the declarations.

These declarations are provided in Annex 2: Declarations, and can be downloaded from the IFS Phase 2 Application form. They must be signed and attached to the application by the applicant. The GDPR Assurance Questionnaire is published on the competition [website](#) (as stated in Declaration 6 – The General Data Protection Regulation) and must be returned as part of the application.

Conflicts of interest: The BEIS standard terms and conditions of contract include reference to conflict of interest and require contractors to declare any potential conflict of interest to the Secretary of State.

For research and analysis, conflict of interest is defined as the presence of an interest or involvement of the contractor, subcontractor (or consortium member) which could affect the actual or perceived impartiality of the research or analysis.

Where there may be a potential conflict of interest, it is suggested that the consortium or organisation designs working arrangements such that the findings cannot be influenced (or perceived to be influenced) by the organisation that owns a potential conflict of interest. For example, consideration should be given to the different roles which organisations play in the research or analysis, and how these can be structured to ensure an impartial approach to the project is maintained.

This is managed in the procurement process as follows:

- During the application process, organisations may contact BEIS to discuss whether or not their proposed arrangement is likely to yield a conflict of interest.
- Contractors are asked to sign and return Declaration 3 (this is contained in the Competition Application Form and is attached for reference in Contract Size and Restrictions on Funding)

4.3 Competition Budget and Availability

The total budget available for this two phase Competition is up to £55m. BEIS reserves the right to allocate more or less than the total budget depending on the number and quality of applications received and budget availability.

A maximum of £49.4 million will be available for Phase 2 demonstration projects, with a maximum expected value of £6,000,000.00 (excluding VAT) per project application. The competition is split into three Lots: Lot 1 will focus on industrial fuel switching to hydrogen solutions, Lot 2 on industrial fuel switching to electricity, and Lot 3 on industrial fuel switching to biomass, waste, and other low carbon fuels. The number of Phase 2 projects funded depends

on the range of solutions proposed, the quality of the applications, how much they cost and the number of projects that are affordable within the allocated budget.

Demonstration project final reports must be submitted by the 28 February 2025. This should allow all project activities, including reporting and approval of the final invoice submission to be completed by 31 March 2025. All costs should be provided excluding VAT, though where VAT applies, applicants should specify the amount. Your total costs excluding VAT should not exceed the maximum allowable budget per project. Any costs incurred by the project that is greater than the agreed total project costs will not be covered by BEIS.

Note: Nothing in this funding call requires BEIS to award any applicant a contract of any particular amount or on any particular terms. BEIS reserves the right not to award any contracts, in particular if BEIS is not satisfied by the applications received or if the funding assigned to the scheme is required for other, unforeseen, purposes. BEIS will not, under any circumstances, make any contribution to the costs of preparing applications and applicants accept the risk that they may not be awarded a contract.

4.4 Eligible Costs

Applicants are instructed that the project costs quoted must reflect forecast costs at a 'fair market value' and for this Competition, **profit must not be included**, including within labour costs which should include salary plus employer costs only.

Applicants must ensure all your project costs are eligible (See Appendix 2: Eligible/ Ineligible Costs). At any stage of the competition BEIS can ask for any ineligible cost to be removed from the project costs.

Applicants must justify all costs in their application.

All eligible project costs **must be 100% funded by BEIS**. Projects which have higher costs than the maximum allowed (£6m excluding VAT) are ineligible, even when the project team are providing the additional/in-kind funding.

Please note this does not exclude projects from covering any ineligible costs at their own expense, however they will not be included in the assessment of the project or form part of the contract.

In Phase 2, eligible costs are those directly associated with the development, implementation, monitoring, and decommissioning (if necessary – see separate note below) of the Industrial Fuel Switching demonstration projects.

Further details of eligible and ineligible costs are provided in Appendix 2: Eligible/ Ineligible Costs. Applicants must complete the Competition [Finance Form](#) (separate spreadsheet) to provide the necessary cost information for the assessment process; further itemisation of costs and methods of calculation may be requested to support the application.

4.5 Decommissioning Costs

Where the Industrial Fuel Switching solution includes a physical asset, the chosen suppliers will have responsibility for decommissioning demonstration equipment when the project has been completed if it is not feasible to continue to operate/develop the equipment. When applying, suppliers need to include any decommissioning costs, at fair market value, in the total estimated costs for the Phase 2 demonstration project.

5 Deliverables

It should be noted that SBRI contracts require project outputs to be shared publicly – therefore non-commercial information developed by this competition will need to be shareable.

Phase 2 will consider applications to demonstrate the entire process, key components, or to further develop and demonstrate the design of new solutions to enable industrial fuel switching and fuel switch enabling solutions, to help industry reach net zero.

In addition to a physical demonstration, successful applicants to Phase 2 will need to deliver:

- An evidence-based final project report for BEIS (and other government departments) detailing:
 - a. the design and development of the system
 - b. demonstration and trials results (including emissions reductions, system/process efficiencies)
 - c. Solution costs (capital and operating costs of the demonstration as well as forecasts for commercial deployment and use)
 - d. key successes
 - e. lessons learned
 - f. next steps
 - g. how the technology/process can be scaled and replicated more widely
 - h. assessment of the benefits and challenges of the system including risks to deployment
 - i. Environmental, safety and regulatory considerations and requirements
- An accessible version of the Phase 2 project report alongside a one page case study which can both be published.
- A detailed assessment of the business plan for how the process, technologies and knowledge will continue to be developed after the funding for the demonstration ends. This should make clear how the IFS funding has allowed the project team to improve the supporting evidence to underpin any assumptions as well as improving the accuracy of any technical/performance data.

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- Progress reporting to BEIS as outlined in Section 9: Reporting Requirements.
 - Knowledge dissemination requirements, see Section 11: Knowledge Dissemination Requirements.
 - Evaluation reports of their knowledge dissemination activities, detailing their activities & lessons learnt

BEIS will need to include sufficient time for the approval of the final report, projects are therefore required to submit final project reports no later than 28 February 2025. This will allow time BEIS to comprehensively review the reports and give time for projects to action any amendments as required. Where certain information is not publishable for commercial reasons, this should be discussed with BEIS at the earliest opportunity once the contract has been awarded.

Applicants will retain ownership of the intellectual property generated during the project subject to certain requirements. See Section 9 and Annex 1: SBRI Terms and Conditions of these guidance notes for further details. If there are aspects of the main report which are commercially confidential, then project teams will be required to provide a version of the Phase 2 final project report which can be published.

6 Assessment Process and Criteria

6.1 Assessment Process

All applications will be considered initially against all the competition eligibility criteria (described in section 4) and then against the assessment areas outlined below, which are based on the competition's objectives and the likelihood of effective project delivery.

The eligible projects will be assessed against the assessment criteria to determine an overall ranking list which will be used to allocate the funding for the competition. To be eligible to receive funding, a project must also be allocated a minimum total score of 60% against these assessment criteria and a minimum score of 2 (40%) against each individual sub-criterion. Projects in each Lot will be ranked with the highest scoring projects funded until funding runs out or until all successful applications are allocated a place, whichever comes first. If there is remaining budget in a Lot (due to lack of applications or applications failing to score above the 60% threshold), this will be transferred to a central pot, where all remaining/unfunded projects across the Lots will be combined and ranked in order of merit, funding will be assigned against order of merit to projects (with a minimum 60% threshold total mark and minimum 40% on all sub-criteria) until funds run out.

The application form and guidance notes are designed to inform you about the types of information you should provide to BEIS for your application to be assessed.

6.2 Assessment Criteria

The assessment criteria for the IFS Phase 2 Competition is broken down into 5 separate criteria, with these broken down further into sub-criteria. Each sub-criterion will be scored independently and will be given a scoring between 1-5. Bids must receive a moderated score at least two in all sub-criteria in order to be eligible.

Table 2: High-level Assessment Criteria and Weighting for Phase 2

Criteria	Weighting
1. Idea	25
1a) Concept and innovation	10
1b) Technical feasibility/performance and emissions savings	10
1c) Health, Safety, Environmental and Regulatory Feasibility	5
2. Team and Resources	20
2a) Skills and experience	10
2b) Project team structure and resource	10
3. Delivery	25
3a) Delivery plan	15
3b) Development plan	5
3c) Risk	5
4. Cost and value for money	20
4a) Justification of costs	10
4b) Value for money	10
5. Social value and Dissemination	10
5a) Dissemination	5
5b) Social Value	5

The scoring guidance and the criterion weighting is summarised in the table below.

Criterion 1	Idea
Weighting	25% (Split into sections 1a – 10%, 1b – 10%, 1c – 5%)
Guidance	<p>This criterion will be used to assess the technical and regulatory feasibility of your fuel switching solution, the novelty of the solution compared to current state-of-the-art technology and the performance of the solution, including impact on the costs and quality of the product resulting from the industrial process.</p> <p>Applicants are also expected to:</p> <ul style="list-style-type: none"> • evidence, with justification, the TRL at the project start and outline how they will meet the expected TRL at the end of the project (projects should aim to reach at least TRL 7 at the end of the demonstration project), • indicate, with justification, the expected carbon emissions savings and wider environmental impacts of the solution. • explain how the solution supports and fits with a Net Zero future, • indicate, with justification, the total lifetime costs associated with implementing the proposed fuel switching solution, and the technical barriers to such implementation.
Criterion 1a	Concept and Innovation
Weighting	10%
Guidance	<p>This sub-criterion will be used to assess how well the project will support the competition objectives, the level of innovation and how appropriate the demonstration is in representing/simulating industrial conditions.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> • Provide an overview of the proposed project, in a way that gives assessors a good understanding of the key concepts, innovations and nature of the demonstration. • Explain what your solution is, why it is innovative and what benefits it brings, compared to the state-of-the-art and/or competing innovative solutions. • Explain whether any similar technologies exist, and how your proposed approach is different and improved. • Summarise the work that has been done to date on the solution. Describe what technological progress will be made through the

Criterion 1	Idea
	<p>project and the potential for knowledge gain in the system and technologies.</p> <ul style="list-style-type: none"> Clearly outline the nature of the demonstration and explain how representative this is of real industry conditions. The demonstration can take place at a dedicated industrial site or at suitable test facilities but these should simulate industry conditions. <p>Higher marks will be awarded to answers where the project is: clearly described; representative of real industry conditions; will strongly support the competition objectives; is innovative; and will lead to a large amount of technological progress and knowledge gain.</p>
Criterion 1b	Technical feasibility/performance and emissions savings
Weighting	10%
Guidance	<p>This sub-criterion will be used to assess the technical performance and feasibility of the fuel switching solution, as well as the expected emissions savings from the solution.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> Provide evidence to demonstrate that the proposed approach is technically feasible, including justification for all technical data provided. Appraise outstanding technical challenges and risks of the solution, describing how these can be overcome or mitigated. Describe and justify the Technology Readiness Level (TRL) at the start and end of the project, outlining how the end TRL will be achieved within the project timeframe. Projects should aim to reach at least TRL 7 at the end of the demonstration project. Describe the performance of the fuel switching solution and the impact on the costs and quality of the product resulting from the industrial process. Provide emissions factors for the proposed technology by using the Green Book as guidance. Estimate the potential emissions savings from the solution by using the Green Book as guidance. Provide any supporting data and calculations to support your answer.

Criterion 1	Idea
	<ul style="list-style-type: none"> Describe how the emissions savings could contribute to the UK's 2050 Net Zero target, and international targets, assuming wide-scale deployment of the solution. Provide any supporting data and calculations to support your answer. Describe how and to what extent the solution will enable wider carbon saving across industry, beyond the primary target sector. Describe lifetime costs of the solution (including boundary condition assumptions), and how confidence in lifetime costs will be improved. <p>Provide any supporting data and calculations to support your answer.</p>
Criterion 1c	Health, Safety, Environmental and Regulatory Feasibility
Weighting	5%
Guidance	<p>This sub-criterion will be used to assess the regulatory feasibility of fuel switching solutions as well as the health, safety and environmental considerations and impacts.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> Describe the wider safety and environmental impacts not related to greenhouse gas emissions savings, such as air quality and health and safety regulatory requirements, associated with the industrial fuel switch solution (local and global) and how you will look to meet these, as well as mitigating any negative potential impacts. Show that you have considered the appropriate national and local planning regulations for the deployment of your demonstration and show how you aim to ensure the appropriate permissions will be obtained in line with their project schedule. Outline any health, safety, or regulatory challenges and how the project would look to overcome these.

Criterion 2	Team and Resources
Weighting	20% (Split into sections 2a – 10%, 2b – 10%)
Guidance	This criterion will be used to assess the project team's capability to deliver the proposed project. Responses should include relevant experience and detail skills required for key project tasks, as well as clearly outlining the structure and commitment of the project team.

Criterion 2a	Skills and experience
Weighting	10%
Guidance	<p>This sub-criterion will be used to assess the project team’s potential capability and capacity to deliver a Phase 2 demonstration project in the time available.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> • Identify the skills and competencies required for each task, and how the project team meets them. • Provide evidence of the capability, experience and capacity of the project team, with experience of successfully delivering comparable projects. • Provide details of the relevant skills, qualifications, and experience of main project team members, including descriptions and evidence of previous relevant work carried out. Include brief details of relevant previous projects that specific members of the team have been involved with, including the date, location, client and project size. • Provide CVs of lead individuals within the project team in an attachment to this criterion (individuals’ CVs should be no longer than 2 pages of A4 each, only the first 2 pages of CVs exceeding this limit will be read by assessors).
Criterion 2b	Project team structure and resource
Weighting	10%
Guidance	<p>This sub-criterion will be used to assess the level of commitment of the project team to the project, as well as proposed governance structure and strategy to procure/develop key equipment or knowledge.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> • Give confidence that consortium agreements will be in place within one month of contract signature. • Evidence that the project team will be structured and governed in a way that is appropriate for the demonstration project and equal to the challenges. • Provide an organogram and outline the key roles for each partner and the proposed governance and communication arrangements in managing and coordinating the project between the partners to ensure effective project delivery.

	<ul style="list-style-type: none"> • List any external parties responsible for delivering goods or services worth more than 10% of the total project value and explain how they will ensure that these parts of the project do not give rise to delays in the delivery of the project. <ul style="list-style-type: none"> a. Include organisation name, size, role/activities, location of project work and evidence of their commitment to the project (e.g. a signed letter of support, which can be uploaded within the online application form) • Outline how key capital equipment items will be manufactured/procured. • Evidence any engagement and/or quotations/agreements with OEMs, fuel suppliers and key sub-contractors. <p>Applicants may attach letters of support from OEMs, fuel suppliers or other key sub-contractors to support their response to this criterion, which will be assessed.</p>
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Criterion 3	Delivery
Weighting	25% (Split into sections 3a – 15%, 3b – 5%, 3c – 5%)
Guidance	<p>This criterion will be used to assess the expected effectiveness and efficiency of delivery of the demonstration study; and will also consider the project plan. This will be assessed by looking at a range of factors, including:</p> <ul style="list-style-type: none"> • The completeness and quality of the proposed project delivery plans for the proposed demonstration project. • The appropriateness and realism of the project milestones and deliverables • Justify how the project is not heavily dependent for success on external factors beyond the project’s direct control. • The project team’s plan for further development, commercialisation, and exploitation. • The quality of risk assessment and contingency planning, including consideration of health and safety and other regulatory requirements. <p>BEIS will discuss with successful applicants and agree upon a number of stage gate reviews that will be carried out throughout the project life. These stage gates are to be identified by the project and agreed with BEIS during the inception meeting. We reserve the right to terminate the</p>

Criterion 3	Delivery
	contract, at our discretion, if stage gates are not met. Further guidance will be provided within the contract.
Criterion 3a	Delivery plan
Weighting	15%
Guidance	<p>This sub-criterion will be used to assess the effectiveness and efficiency of delivery of the project; and will also consider the plan(s) for a reliable fuel supply.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> • Outline the project team’s approach to project management for this particular project. • Set out the key work packages for the Phase 2 demonstration project. Outline and describe a project plan, listing the key tasks, skills and competencies required, timescales, and dependencies. • Provide a separate Gantt chart to complement the project plan. Ensure you clearly outline the critical path on your Gantt chart, show dependencies and justify what measures are in place to identify project slip and how this will be rectified/mitigated. • The appropriateness and realism of the project milestones and deliverables. • Outline the preferred option(s) to fuel your demonstration project, justifying why this option(s) is the most suitable. • How the project will ensure that they have access to the necessary skills and operational knowledge, specialist facilities, and materials, including a reliable fuel supply. • Provide stage gate review points in the project life that captures key project milestones/risks for subsequent agreement with BEIS. • Explain how the project team, if involved in multiple NZIP IFS Phase 2 Competition applications, will ensure they have sufficient capacity to deliver all successful project applications. <p>Applicants must attach tables describing the information requested on work packages and Gantt charts to support their response to this criterion, which will be assessed.</p>
Criterion 3b	Development Plan
Weighting	5%

Criterion 3	Delivery
Guidance	<p>This sub-criterion will be used to assess the project’s plan for further development, commercialisation, and exploitation.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> • Describe the long-term development plan for further development, commercialisation, and exploitation beyond the industrial fuel switching competition, including a credible route to market within the UK. • Highlight the key barriers and challenges to achieving commercialisation, timescales, and estimated long term development costs, and detail how these will be addressed. • Outline potential routes to low-carbon fuel production as per Section 2.3: Project Scope. • Describe how you plan to scale the solution to meet potential demand. • Justify and provide quantitative figures on the expected scale up growth (i.e. number of expected sites using your project’s fuel switch/fuel switch technology by 2050 with the corresponding expected emission savings from this), making clear any assumptions and dependencies in these calculations. Include justification of how you plan to improve the accuracy of these estimates through the delivery of the demonstration project.
Criterion 3c	Risk
Weighting	5%
Guidance	<p>This sub-criterion will be used to assess the project’s approach to risk management as well as the level of risk in demonstrating the chosen technology.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> • Provide a detailed project risk register for their demonstration proposal, identifying key risks and providing suitable mitigation strategies, grouping into appropriate categories, such as: technical, legislative/regulatory, environmental, safety, policy, economic, commercial, financial or project management. • Provide information on contingency planning.

Criterion 3	Delivery
	<ul style="list-style-type: none"> • Demonstrate that the project is not heavily dependent on the success of external factors beyond the project's direct control. • Outline the project team's approach to risk management and how risk will be managed during project delivery. • Applications will be assessed on the quality of risk assessment and contingency planning, showing a realistic and robust approach to risk management, including consideration of health and safety and other regulatory requirements. • Applicants should attach a risk assessment table/register to this criterion, which will be assessed.

Criterion 4	Cost and value for money
Weighting	20% (Split into sections 4a – 10%, 4b – 10%)
Guidance	<p>This criterion will be used to assess the project costs, including assessing whether the project delivers fair market value and provides additionality.</p> <p>In recognition of the fact that the risks of the project development are shared with HM Government, but the applicant stands to gain all the benefits occurring after completion of the project, the applicant is asked to explain where cost savings, from the point of view of HM Government, will be provided compared to the case where the project would be carried out under an exclusive development contract.</p> <p>Eligible project costs are expected to be at fair market value. Project costs are also expected to be robust, i.e., realistic and justified for the proposed project, and sufficient to meet proposed objectives.</p>
Criterion 4a	Justification of costs
Weighting	10%
Guidance	<p>This sub-criterion will be used to assess the justification of project costs and whether these costs are eligible and realistic to deliver the proposed project.</p> <p>Applicants are expected to:</p>

Criterion 4	Cost and value for money
	<ul style="list-style-type: none"> • Complete all sheets in the project finance form, as well as justifying and describing the basis of the costs. Include actual labour costs, and depreciation of capital items. • Ensure all costs are eligible. The eligible costs are set out in Section 4.4 and Appendix 2: Eligible/ Ineligible Costs. • Applicants must ensure all overheads are justified and provide a detailed breakdown of the overhead costs. This must be fully detailed in the Finance Form, and justified within the box at the bottom of the Labour & Overhead Costs worksheet. BEIS will not normally pay overheads over 20%, unless robust justification is provided for this being surpassed. • Provide a detailed description of major cost items greater than £10,000 (material, capital items, sub-contract and other costs). • For capital items, include depreciation only (based on utilisation of item and residual value at the end of the project). Please see Appendix 6: Residual Value Guidance for further guidance on calculating eligible cost and residual value of capital items. • Describe, and justify the selection and costing of suppliers and subcontractors. • Use the Project Location worksheet to demonstrate that at least 50% of the work (on a cost basis) is to be undertaken in the UK.
Criterion 4b	Value for money
Weighting	10%
Guidance	<p>This sub-criterion will be used to assess whether the proposal represents good value for money for HM Government.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> • Describe why the application represents good value for money for HM Government. • Explain how the availability of public funding makes a material difference to the actuality and pace of moving the solution towards commercialisation. What would occur in the absence of public funding? • Clearly state where cost savings are being provided compared to exclusive development contracts. • Qualify and quantify the savings that are being passed on to HM Government to reflect the asymmetric balance of risks and benefits

Criterion 4	Cost and value for money
	<p>accruing to the project consortium and HM Government (refer to Risk-Benefits sharing Competition Eligibility Criteria in the NZIP Industrial Fuel Switching Phase 2 Competition Guidance Notes).</p> <ul style="list-style-type: none"> • Demonstrate that the funding represents good value for money for HM Government, including no element of profit in the project costs.

Criterion 5	Social Value and Dissemination
Weighting	10%
Guidance	This criterion will be used to assess the plans for the social value gained from supporting the project. This includes strengthening supply chain, job creation and training or educational opportunities.
Criterion 5a	Dissemination
Weighting	5%
Guidance	<p>This sub-criterion will be used to assess the effectiveness of the project team’s plan to disseminate the findings of the proposed project.</p> <p>Applicants are expected to:</p> <ul style="list-style-type: none"> • Provide a dissemination plan, describing how the learnings from the demonstration project will be shared with industry. This should also include key stakeholders and any challenges faced during delivery. • Provide details of the channels that the information will be disseminated through (e.g., meetings, webinars, events, industry publications). Responses will score higher where applicants are able to include specific events/activities.
Criterion 5b	Social Value
Weighting	5%
Guidance	<p>This sub-criterion will be used to assess how well the proposed project could generate social value.</p> <p>Applicants are expected to:</p>

Criterion 5	Social Value and Dissemination
	<ul style="list-style-type: none"> • Describe the commitment(s) your organisation will make to ensure that the opportunities under the contract deliver the Policy Outcome of “Create new business, new jobs and new skills”. • Support the UK’s commitment to reach Net-Zero emissions by 2050. • Describe and quantify the applicability/ replicability of the solution across various industrial sector(s) and any plans for promoting its wider use. • Provide details of how funding the solution will support the development of a resilient UK supply chain and provide export opportunities. • Provide quantitative and qualitative information about UK jobs, training, or educational opportunities created as a result of the funding awarded for, and beyond, the industrial fuel switching competition. Examples might include employment and skills issues, workforce sustainability and growth, as well as the delivery of apprenticeships and qualifications. • Describe how you will monitor, measure and report on your commitments/the impact of your project. Examples of possible reporting metrics could include number of employment opportunities created under the contract, number of learning hours as well as the number of training and apprenticeship opportunities. <p>gov.uk provides more information on social value</p>

6.3 Scoring Guidance

Projects that offer the best value for money overall based on their assessment against the criteria outlined in section 6.2 will be selected. The projects will be scored against the five scoring criteria set out in table below (Table 3). Projects must score a minimum of 60% (based on total score) and a minimum moderated score of 2 against each individual criterion/sub-criterion to be eligible for funding.

Table 3: Scoring Descriptions

Score	Description
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1	Not Satisfactory: There is no evidence to very little evidence that the question has been satisfactorily answered and major omissions are evident. Any bid which scores a 1 in any sub-criteria will not be eligible for funding.
2	Partially Satisfactory: There is little evidence that the question has been satisfactorily answered and some omissions are evident. Much more clarification is needed.
3	Satisfactory: There is reasonable evidence that the question has been satisfactorily addressed but some omissions are still evident and further clarification is needed.
4	Good: The question has been well addressed with a good evidence base, with only minor omissions or lack of clarity.
5	Excellent: There is clear evidence that the question has been completely addressed in all aspects, with the question answered clearly, concisely and with a strong evidence base.

7 Financial Information

Applicants are requested to provide a fixed price quotation for the work. A detailed cost breakdown is required to enable assessment of value for money.

Financial information should include costs for Phase 2 of the project, detailing labour (including staff rates), material and capital equipment costs, and any travel and subsistence requirements. Applicants are required to complete a detailed financial summary template (the finance form) as part of the application process.

Estimated project costs should also be provided for the Phase 2 demonstration study.

Financial Viability Checks

BEIS will undertake financial viability checks on all successful applicants. These will include looking at the latest independently audited accounts filed on the Companies House database. BEIS reserves the right to also verify the financial viability of all members of the consortium and all sub-contractors.

Where a business is not required to file accounts with Companies House, or is a relatively new company without a significant trading history, other financial information may be requested to enable an appropriate financial viability review to be undertaken. We will be looking for evidence of your ability to resource the cashflow for the project appropriately, so the

information we request will be focused on understanding how your business operates in this respect.

Before your project starts, BEIS may ask for evidence that you have the funding mechanisms in place to manage your cash flow across the life of your project. This could include letters of credit or other such mechanisms.

BEIS will not make payments in advance of need and typically makes contract payments in arrears on satisfactory completion of agreed milestones and deliverables. BEIS understands, however, the difficulties which small businesses may face when financing this type of project. BEIS will explore cash flow issues with the applicant as part of developing the financial and milestone profile during the Contract Award process. BEIS will offer flexibility in terms of profiles and payments, within the confines of the requirements for use of public money within which it operates.

8 Notification and Publication of Results

8.1 Notification

Applicants will be informed by email if their application has been successful, subject to compliance with the terms and conditions of the Conditional Contract Offer (conditional on successfully passing due diligence and satisfactory responses to clarifications from assessors).

BEIS may wish to publicise the results of the scheme, which may involve engagement with the media. At the end of the application and assessment process, BEIS may issue a press release or publish a notice on its website. These public documents may, for example, outline the overall results of competitions and describe some of the projects to be funded.

Some organisations may want their activities to remain confidential and you will be given a chance to opt out of any involvement in media activity and further case study coverage of projects, should you see this as being necessary. However, the public description of the project you provide in your application will be made available in the public domain if your application is successful, and you are not able to opt out of the project description being published, as such, you must provide a short description (<200 words) of your proposed industrial fuel switching solution. In addition, all funded projects must include reporting and dissemination milestones – agreed with BEIS – as part of their project deliverables. Information about all contracts awarded will also be published on [Contracts Finder](#) within 30 days of contract signature, as legally required under The Public Contracts Regulations 2015.

Any organisation that wishes to publicise its project, at any stage, must contact the Competition Programme Manager or their Project Monitoring Officer at BEIS for approval.

8.2 Publication of Results

SBRI involves a high degree of risk–benefit sharing. In return for provision of funding and non-financial support during demonstration activities, BEIS expects to be able to use and share the results and outputs of the demonstration activities with other government departments and on the government website (gov.uk).

BEIS also wishes to publicise details of the award recipients. Therefore, on or after issuing a SBRI contract, BEIS will publish the following information:

- Identity of the participant and its partners
- Project summary information including aims and expected outcomes of the project and technology area
- Total award value

Following completion of the funded projects, BEIS will publish on its website a summary of the funded activities and the outcomes achieved. This will include a final summary report from each project detailing technical approach, and key achievements. BEIS may also revisit projects at a later date and publish an evaluation report for the competition as a whole.

BEIS recognises the need to maintain confidentiality of commercially sensitive information. We will consult applicants regarding the nature of information to be published, to protect commercially sensitive information. The notice of the award on [Contracts Finder](#) will also include the value of the contract.

9 Reporting Requirements

9.1 Project Monitoring and Reporting Requirements

BEIS will appoint a Monitoring Officer⁷ to support the delivery of the demonstration project, including agreeing on the deliverables and milestone payment schedule for the project, project reporting via the BEIS online project monitoring tool, collection of Key Performance Indicators (KPIs) and approval of materials for publication.

There will be several requirements on contractors during the project. Such requirements are at the discretion of the BEIS Monitoring Officer and Programme Manager and these may change during the project duration. It is the responsibility of the contractor to meet the requirements as outlined by BEIS during the project and by applying to the competition you are committing to do so.

⁷ In some instances, the monitoring services will be provided by an external organisation. External organisations will be subject to a confidentiality agreement.

Sections 9.1 to 9.5 provide a brief, high level overview of requirements. However, more detailed guidance on requirements will be communicated by BEIS at the start of the project. This guidance may also change during the project if BEIS requires.

9.1.1 Monthly Monitoring and Reporting

A BEIS Monitoring Officer will engage with project teams to monitor the progress of the project throughout its duration. At the start of the project, the Monitoring Officer will agree on the milestone payment plan and schedule and deliverables with project teams. Monthly calls will then be arranged between the BEIS Monitoring Officer, Programme Manager and project team. These calls will typically cover:

- project progress against milestones and deliverables.
- upcoming milestones.
- project risks, issues or opportunities identified during the prior month and risk scores for these, highlighting any changes in project timeline or cost forecasts.
- changes to the project plan or forecasts.
- any communications requests, such as press releases (BEIS will require sight of, and must approve, all press releases/publications associated with the project before they go out).
- upcoming site visits; and
- questions the projects team have for BEIS.

The outcomes of each meeting and report will be reported internally within BEIS. This information will not be shared outside of BEIS, unless the project team gives permission to do so.

9.1.2 Quarterly Monitoring and Reporting

On a quarterly basis, a quarterly review meeting will be held with the wider project team. This will involve more detailed reports, with more specific requirements to be outlined by the BEIS Monitoring Officer and Programme Manager. These reports must be submitted to BEIS at least 3 working days prior to the Quarterly review meeting.

A Quarterly Report will typically require:

- a summary of work and activities undertaken in the quarter versus the plan for that quarter (as copied from the previous quarterly report or project plan) and a project RAG rating.
- a plan for activities and work to be undertaken in the upcoming quarter.
- any highlights from the previous quarter, including any publications.
- detailed reporting on risks, including an updated risk/issues/opportunities register with risk ratings, mitigations and any new risks highlighted.

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- an updated log of any proposed or required changes to the project, including any change requests versus the original project and finance plan with reasoning and justification for each (any changes will require approval from BEIS before being agreed).
 - an update on social value and benefits monitoring as compared to the original social value and benefits plan in the original application.
 - an update on any dissemination activities that have been undertaken as part of the project as compared to the dissemination plan in the original application and/or agreed upon at the start of the project; and
 - an update on progress for each milestone and deliverable in the project plan.

For each milestone, projects will typically be required to provide:

- a RAG status and reason for this status;
- % of work completed to date for the whole milestone;
- original and forecast completion date of the milestone;
- whether the spend is on target; and
- reasons for any deviations in scope from the plan within each milestone.

Following submission of the Quarterly Report to BEIS, BEIS will review and provide feedback before organising Quarterly Project Meetings between the BEIS Monitoring Officer, Programme Manager and project team. Within these meetings, projects will be required to make a short presentation on ongoing project work to BEIS. The quarterly report submissions and general project progress will also be discussed with BEIS.

Timings for the Quarterly Project Meetings will be set from the start of the project. Due to the high number of quarterly calls that need to be carried out by BEIS in a short timeframe, BEIS will kindly ask you to try to adhere to the originally selected timeframe. If the time of the call no longer aligns with your availability, please let your Monitoring Officer know as soon as possible. Following this call your Monitoring Officer will let you know if they have any further questions on the report, and will confirm when the review is signed off and complete.

The outcomes of each meeting and report will be reported internally within BEIS. This information will not be shared outside of BEIS, unless the project team gives permission to do so.

9.1.3 Site Visits

As part of each demonstration, it will be a requirement for BEIS monitoring officers and/or BEIS representatives to visit the projects on the demonstration or organisation site. Two to three site visits are expected to be completed throughout the duration of the project. Typically, this will include a visit near project start for BEIS representatives to meet the project team and discuss plans, an interim visit during the demonstration set-up at a key point in the project (such as

arrival or installation of critical equipment for the demonstration), and a visit towards the end of the project in order to see the demonstration in action on the industrial site.

Timings of site visits should be agreed between the BEIS Monitoring Officer and project team at project start and the visits should be included as deliverables within the milestone payment plan and schedule. It will be the responsibility of the project team to organise visits, including any personal protective equipment (PPE) requirements for attendees. Arrangements for the visits will be at the discretion of, and require approval from, the BEIS Monitoring Officer and Programme Manager.

9.2 Invoicing

At the start of each project, the BEIS Monitoring Officer will agree with projects the deliverables and evidence required, as well as invoicing profile as part of the payment milestone schedule.

When invoicing BEIS, projects must submit the following information alongside project invoices:

- Invoice cover sheet
- Completed deliverables (to be reviewed by BEIS appointed Monitoring Officer)
- Supporting evidence (to the satisfaction of the Monitoring Officer), which could include:
 - a. Timesheets
 - b. Purchase orders/invoices (as required)
- Evidence of deliverable completion (work done)
- Reasonable assurance report (as required)

Please note that BEIS can only pay for work that has been completed (not future work) and sufficient evidence must be provided for each deliverable completion that satisfies the BEIS Monitoring Officer.

9.3 Change Requests

As mentioned in 9.1.1 and 9.1.2, projects will be required to inform BEIS and request approval for any changes to the project that may be required. Changes typically include any scope, schedule (deliverables and work package), project team or financial variations that may be required and come to light. All changes should be noted on a Change Log with justification, and these should be raised with BEIS when reporting on a monthly and quarterly basis. The BEIS Monitoring Officer will review the Change Log and either request further information, approve, or reject any changes.

Changes which are materially significant will require a formal change request form to be submitted by the project. The BEIS Monitoring Officer will escalate this request to the BEIS Programme Manager and, where appropriate, to the Senior Responsible Owner (SRO). BEIS

will decide whether to approve the change request and/or whether additional requirements or assurances on the project are needed as a result.

Typically, over 5% variation in milestone cost, over 2 week milestone delay, any scope change, or any increase in total project costs, would meet the threshold to require a formal change request process. However, these are only indicative and may change. BEIS will determine where thresholds for formal change requests lie depending on circumstances at any time throughout any project.

9.4 Knowledge Sharing

Effective knowledge sharing and dissemination are important requirements of Phase 2 of the IFS competition, and applicants will be assessed on the scope and scale of their proposed knowledge dissemination and sharing activities. The specific knowledge dissemination activities to be delivered are at the discretion of the project and will be agreed at project award.

Projects are also encouraged to identify how they will facilitate knowledge sharing and lessons learned between other IFS-funded and other relevant projects, for the purposes of maximising the amount of information shared with stakeholders and improving the overall quality and success of the project.

Projects will be required to produce evaluation reports of their knowledge dissemination activities, detailing their activities & lessons learnt. The Monitoring Officer assigned by BEIS will monitor the knowledge dissemination of project teams.

Projects will be required to contribute to a minimum of three knowledge dissemination activities. Projects will be expected to support sector capacity-building, contributing to knowledge dissemination activities such as participation in industry workshops, conference presentations, publication of articles in peer-reviewed scientific journals, or making project data openly available.

9.5 Evaluation and Key Performance Indicators

BEIS require the project teams to support the evaluation of their project by providing data on NZIP portfolio-wide key performance indicators (KPIs) annually for up to three years post-project; and to take part in other forms of data collection as required, particularly interviews, focus groups and surveys. Approximately one day of project time will be required to participate in these other forms of data collection, over the life of the project evaluation.

BEIS uses a standardised set of key performance indicator metrics (KPI metrics) to help assess the set-up, progress, achievements, and long-term impacts of all projects funded within the Net Zero Innovation Portfolio. A subset of KPIs will be selected for each project according to the KPIs' relevance to the project's design, aims and objectives.

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- You are required to work with BEIS to select all relevant KPIs to be tracked, measured, and reported against for your project.
 - You are required to build in project data collection and reporting for all selected KPIs.
 - You will be required to report on KPI metrics at the specified intervals, which differ by metric, but are no more frequent than quarterly. The collection frequency has been set for each metric to reflect the likelihood of it changing in meaningful ways over that period. During the funding period reporting takes place during quarterly project reviews.
 - You will also be required to provide a subset of KPI data in annual follow-up data collection for 3 years post project-completion, with focus on Technology Readiness Levels (TRLs), Commercial Readiness Levels (CRLs), follow-on funding, sales and expected long-term impact.
 - Please note KPIs are related to but separate from the monitoring and evaluation plan for each project or programme. BEIS is planning the evaluation of the programme and successful tenderers will be required to share evidence and collaborate in evaluation activities for example interviews, workshops held as part of these activities.

By submitting a bid, you agree that BEIS can hold your contact details for evaluation purposes for the duration of the competition, even if your bid is not successful. BEIS may, within that time, contact you to request your participation in an evaluation, exploring issues such as the application process or the development of your technology in the absence of BEIS funding. You are not required to participate in such an evaluation.

10 Intellectual property

The proposed arrangements for intellectual property rights and exploitation of IPR are set out in the contract terms and conditions for this competition, in Annex 1: SBRI Terms and Conditions. Subject to the requirements of Conditions 27(3) and 28(5) of the pre-commercial terms and conditions (Annex 1: SBRI Terms and Conditions), applicants will retain ownership of the intellectual property generated from the project. Applicants are required to identify and record any such intellectual property and to protect patentable knowledge in accordance with Condition 28 of the standard terms and conditions. If within five years of its creation applicants have not commercially exploited intellectual property generated from the work, then in line with clause 28(5) of the standard terms and conditions, BEIS may request the Arising Intellectual Property be assigned to BEIS.

For further information please refer to the T&Cs, notably Conditions 27-28.

10.1 Ownership of Demonstration Devices

Subject to the terms and conditions applicable to intellectual property within the terms and conditions, suppliers will retain responsibility and ownership for the technologies and

demonstration devices developed. Suppliers will retain responsibility and ownership for the technologies and related equipment developed and used during the delivery of the contracts.

11 Knowledge Dissemination Requirements

Effective dissemination and knowledge sharing are key requirements of the IFS competition, and applicants will be assessed on the scope and scale of their proposed knowledge dissemination and sharing activities.

Projects will be expected to contribute to sector capacity-building, engaging significantly with industry conferences or trade shows, as well as engaging in wider knowledge dissemination activities. The specific knowledge dissemination activities to be delivered are at the discretion of the project and will be agreed at project award.

Projects will be required to produce evaluation reports of their knowledge dissemination activities, detailing their activities & lessons learnt. The Monitoring Officer assigned by BEIS will monitor the knowledge dissemination of project teams.

Projects must agree to publish non-confidential project outcomes and learning and provisional findings throughout the project lifecycle, as well as a final report, to enable knowledge dissemination. Specific outputs and timings will be agreed with projects before the GFA is signed.

12 Feedback, Reapplication and Right of Appeal

A short summary of key feedback regarding the applications will be provided to all applicants. This feedback will be based on the comments of technical assessors. No additional feedback will be provided and there will be no further discussion on the application.

The feedback from the assessors is intended to be constructive. Comments are not a checklist of points which must be answered or argued in a resubmitted application as the assessors/requirements may be different and it is the applicant's decision as to whether to act on the suggestions made.

13 Confidentiality and Freedom of Information

Where any request is made to BEIS under the Freedom of Information Act 2000 (“FOIA”) for the release of information relating to any project or applicant, which would otherwise be reasonably regarded as confidential information, BEIS will notify you of the request as soon as we become aware of it. An applicant must acknowledge that any lists or schedules provided by it outlining information it deems confidential or commercially sensitive are of indicative value only and that BEIS may nevertheless be obliged to disclose information which the applicant considers confidential.

As part of the application process, all applicants are asked to submit a public description of the project. This should be a public facing form of words that adequately describes the project but that does not disclose any information that may impact on Intellectual Property (IP), is confidential or commercially sensitive. The titles of successful projects, names of organisations, amounts awarded, and the description of the project may be published once the award is confirmed as final.

All assessors (internal and external) used during the assessment of applications and project Monitoring Officers will be subject to a confidentiality agreement. Assessors external to BEIS will also be required to declare any potential conflicts of interest in a written and signed declaration. If assessors, or anyone involved in the assessment process, encounter a conflict of interest, they will be removed from the process.

14 Further Instructions to Bidders

Please refer to the IFS Q&A document, which will be published on the competition [website](#) by 17:00 GMT, 9 November 2022.

The Department reserves the right to amend the enclosed Competition documents at any time prior to 17:00 GMT, 11 November 2022. Any changes are most likely to correct editorial errors and may include further [Q&A's](#) on the Guidance Notes asked by stakeholders before 14:00 GMT, 4 November 2022. Any such amendment will be numbered, dated and issued on the competition [website](#). Where amendments are significant, the Department may, at its discretion, extend the deadline for receipt of tenders.

The Department reserves the right to withdraw this contract opportunity without notice and will not be liable for any costs incurred by contractors during any stage of the process. Contractors should also note that, in the event an application is considered to be fundamentally unacceptable on a key issue, regardless of its other merits, that application may be rejected. By issuing this Competition document, the Department is not bound in any way and does not

have to accept the lowest cost, or any application and reserves the right to accept a portion of any application unless the tenderer expressly stipulates otherwise.

Appendix 1: Technology Readiness Levels

Technology readiness levels are an indication of the maturity stage of development of a technology on its way to being developed for an application or product. The table below provides the TRL 1 to 9 definitions that apply to this competition.

TRL	Description
TRL 1 – Basic Research	Scientific research begins to be translated into applied research and development.
TRL 2 – Applied Research	Basic physical principles are observed, practical applications of those characteristics can be 'invented' or identified. At this level, the application is still speculative: there is not experimental proof or detailed analysis to support the conjecture.
Applied research and development	
TRL 3 – Critical Function or Proof of Concept Established	Active research and development is initiated. This includes analytical and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative.
TRL 4 – Laboratory Testing/Validation of Component(s)/Process(es)	Basic technological components are integrated to establish that the pieces will work together.
TRL 5 – Laboratory Testing of Integrated/Semi-Integrated System	The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in a simulated environment.
Demonstration	
TRL 6 – Prototype System Verified	Representative model or prototype system is tested in a relevant environment.
TRL 7 – Integrated Pilot System Demonstrated	Prototype near or at planned operational system, requiring demonstration of an actual system prototype in an operational environment.
Pre-commercial deployment	

TRL	Description
TRL 8 – System Incorporated in Commercial Design	Technology is proven to work - actual technology completed and qualified through test and demonstration.
TRL 9 – System Proven and Ready for Full Commercial Deployment	Actual application of technology is in its final form - technology proven through successful operations.

Appendix 2: Eligible/ Ineligible Costs

Eligible Costs

Directly incurred costs: these are costs that are specific to the project that will be charged to the project as the amount spent, fully supported by an audit record justification of a claim. They comprise:

- Labour costs for all those contributing to the project, broken down by individual salary and employer costs.
- Material costs (including consumables specific to the project)
- Capital equipment costs directly related to the delivery of the project.
- Sub-contract costs
- Travel and subsistence

Indirect costs: indirect costs should be charged in proportion to the amount of effort deployed on the project. Applicants should document the methodology they have applied to calculate them, using their own cost rates. They may include:

- General office and basic laboratory consumables
- Library services / learning resources
- Typing / secretarial
- Finance, personnel, public relations and departmental services
- Central and distributed computing
- Overheads (including for example buildings, utilities, insurance) up to 20%, where overheads can be reasonably justified.

Ineligible Costs

Under no circumstances can costs for the following items be claimed:

- Commercialisation activities
- Profit (i.e., applicants should not include profit for themselves or the other project team members within indirect costs or include it as a separate project cost)
- Protection of IPR
- For activities of a political or exclusively religious nature
- In respect of costs reimbursed or to be reimbursed by funding from other public authorities or from the private sector

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- Contingency sums beyond the expected costs of the project work
 - In connection with the receipt of contributions in kind (a contribution in goods or services as opposed to money)
 - To cover interest payments (including service charge payments for finance leases)
 - For the giving of gifts to individuals, other than promotional items with a value no more than £10 a year to any one individual
 - For entertaining (entertaining for this purpose means anything that would be a taxable benefit to the person being entertained, according to current UK tax regulations)
 - To pay statutory fines, criminal fines or penalties
 - In respect of VAT that you are able to claim from HM Revenue and Customs.

Appendix 3: Frequently Asked Questions

This section provides responses to some frequently asked questions. If these responses do not answer other queries you have, please raise these through the competition [Q&A form](#) by **14:00 GMT, 4 November 2022**. Questions submitted after this date may not be answered.

We will reply to any queries which, in our judgement, are of material significance, through an anonymised Q&A sheet published on our [website](#) by **17:00 GMT, 9 November 2022**, so there is sufficient time to include the responses in the applications.

1. Is energy from nuclear or geothermal excluded from the IFS competition?

This is not excluded, as long the project is innovative, meets the competition requirements, the energy enables an industrial fuel switch to a lower carbon fuel, and is compatible with net zero. Projects looking to feed heat into domestic heat networks will not be eligible for this funding.

2. What is BEIS doing about high electricity prices for industry?

We recognise that the UK's industrial electricity costs are currently higher than those of similar nations, which partly reflects how the costs of the electricity system are distributed across household and industrial customers. Steps have been taken to reduce the cumulative impact of energy and climate change policies on industrial electricity prices for eligible sectors. The total package of compensation and exemptions from electricity policy costs was worth over £470 million in 2019, through compensation for indirect costs of the EU ETS and Carbon Price Support, as well as exemptions for Contracts for Difference, Renewables Obligation and small-scale feed-in-tariffs.

As committed to in the Energy White Paper, a Call for Evidence on Energy Consumer Funding, Fairness, and Affordability will be published, which will help build an evidence base to make decisions on rebalancing government mandated costs placed on electricity and gas prices.

The IFS competition is looking to develop fuel switch and fuel switch enabling technologies, including electrification. The funding will cover 100% of eligible costs, including the cost of electricity consumed for the fuel switch, as long as this fits within the budget limits per project.

3. Is an industrial fuel switch from natural gas to electricity eligible?

Yes, so long as the fuel switch is innovative, and the technology development proposed fits the eligibility criteria (see Section 4: Eligibility for Funding).

4. If the technology being proposed is an undemonstrated prototype but the individual technologies making up the prototype are above TRL 7, is this proposal eligible for the Competition?

Yes, as long as the overarching technology being proposed is innovative, has not been demonstrated, matches one of the definitions for TRL 4 to 7 in Appendix 1, and fits the relevant eligibility criteria given in Section 4.

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5. Is natural gas processing considered to be an industrial process, and is fuel switching of natural gas processing activities eligible for funding from this competition?

Yes, gas processing is considered an industrial process and would be eligible for funding, if the project meets the scope and eligibility criteria of the competition.

6. Can an individual organisation make an application, or do all applications have to be made by a consortium?

Applications made by an individual organisation will be eligible for this competition, if they meet the eligibility requirements listed in these guidance notes. All applications will be assessed against the assessment criteria as set out in the competition guidance notes.

Further questions can be asked by submitting the online IFS Phase 2 [Q&A form](#) before 14:00 GMT on 4 November 2022.

Appendix 4: Hydrogen Suppliers

As stated in Section 2.3.3: Hydrogen, as hydrogen production is expected to develop and decarbonise, for the purposes of proving an industrial fuel switching innovative technology, any supply of hydrogen, including electrolytic hydrogen or that produced via methane reformation with or without CCUS, will be considered for this competition. However, applicants are expected to set out a path to low carbon hydrogen beyond this competition in their application.

It is highly advisable that applicants engage with an organisation that can supply hydrogen and evidence this engagement as part of their bid. To support this, a list of hydrogen suppliers and points of contact are given in the table below. Please note that this is a non-exhaustive list and applicants are encouraged to engage with whichever supplier they choose, whether or not they are listed. BEIS does not endorse companies listed below over any others.

If hydrogen suppliers wish to be listed, please contact BEIS at industry.innovation@beis.gov.uk by 28 October 2022.

Table 4 - Non-exhaustive list of contacts for hydrogen supply companies.

Organisation	Point of Contact	Contact Email
Air Liquide UK	Pauline Ronsin	pauline.ronsin@airliquide.com
Air Products	Jon Roper, Marketing Manager	roperj2@airproducts.com
	Shahid Sheikh, Business Development Manager	sheikhs@airproducts.com
AqSorption Ltd.	Paul Geary, Managing Director	paul@agsorption.com
BayoTech	Steve Jones, SVP Europe	steve.jones@bayotech.co.uk
BOC	Chris Hine, Senior Product Manager	chris.hine@boc.com
	Wayne Bridger, Application Sales Manager	wayne.bridger@boc.com
Clean Power Hydrogen Group Ltd.	Qamar Khan, Business Development Manager	gamar.khan@cph2.com
GeoPura	Hydrogen Team	hydrogen@geopura.com
HiiROC	Enquiries	info@hiiroc.com
ITM Power	Sales Department	sales@itm-power.com

Organisation	Point of Contact	Contact Email
Kiwa Gastec	Matthew Barnett, Business Development Manager	matthew.barnett@kiwa.com
	Consultancy Bid Lead	uk.consultancytenders@kiwa.com
Logan Energy Ltd.	Nick Stapley, Business Development & Communications Manager	nick@loganenergy.com
Nippon Gases	Stuart Lidgard, Commercial Manager	stuart.lidgard@nippongases.com
Protium	Jen Baxter, Director of Innovation and Policy	jen@protium.co.uk
	Jon Clipsham, CCO	jon_clipsham@protium.co.uk
Ryze Hydrogen	Jamie Burns, Chief Financial Officer	Jamie.burns@ryzehydrogen.com

Appendix 5: Environment Agency Signposting to Environmental Considerations and Regulations

The text below has been provided by the Environment Agency (EA) for signposting to environmental considerations and regulations. **Please note that the use of ‘we’ in Appendix 5 below refers to the Environment Agency and does not refer to BEIS or the NZIP IFS competition.**

If you are developing or implementing a Hydrogen, Greenhouse Gas Removals, Carbon Capture, Utilisation and Storage innovation or bioenergy (biomass, biofuels, waste derived fuels) development project, we strongly encourage you to consider, as early as possible, the potential associated environmental impacts of your project. This consideration is needed at every stage of technology development to ensure that the risks to the environment and human health are adequately understood. The project should seek to design out and minimise environmental risks and maximise wider environmental co-benefits.

In England, the EA protects the air, land and water and enables a net zero nation that’s resilient to climate change. We work with government, policy makers and developers to manage environmental risks at the earliest opportunity and help industries prepare for necessary regulation. We also aim to build public trust in their regulation of the key

environmental risks. The environmental regulators for Scotland, Wales and Northern Ireland are the [Scottish Environment Protection Agency](#) (SEPA), [Natural Resources Wales](#) (NRW) and the [Northern Ireland Environment Agency](#) (NIEA), respectively. For relevant contacts, please see below Table 5.

Environmental Principles

It is important to assess comprehensively what environmental risks could be associated with the technology you are testing, and how you can reduce those risks. We outline three environmental principles that summarise how you should approach this.

The Environmental Agency are supportive of technologies and approaches that:

7. **Consider environmental risks early and comprehensively.** This includes:
 - a. Building environmental considerations into decision making at the earliest stage – not as an afterthought
 - b. Providing robust evidence that allows the environmental risks to be effectively managed and regulated, and which considers risks of deployment at commercial scale
 - c. Assessing all impacts from cradle-to-grave - including harvesting feedstocks & raw materials, decommissioning, and safe long-term recovery or disposal of waste
 - d. Engaging the public so they understand the risks and benefits
8. **Minimise the impacts and risks to people and our environment** – air, land and water. This includes:
 - a. Maximising decarbonisation and greenhouse gas reduction within safe environmental limits
 - b. Maximising resource, energy and water efficiency – wasted resources, energy and water represent harm without benefits
 - c. Maximising co-benefits for people and the environment
9. **Are fit for the future**, including resilience to the impacts of climate change

Environmental Regulation

The Environmental Agency are supportive of innovation and know that some of the technologies and approaches we'll need to achieve UK Net Zero by 2050 haven't yet been invented. We want to help innovators to design solutions to the climate emergency that are fit for the future and safe for people and wildlife. We also want to ensure that innovative technologies are subject to proportionate and risk-based regulation to provide the necessary level of environmental protection. This includes developing [Best Available Techniques](#) for new

technologies and updating pre-existing BAT guidance, to prevent or minimise their emissions and impacts on the environment.

Please read and follow our regulatory guidance relevant to your technologies, some of which are listed below. Please note that we may charge for detailed pre-application and permitting advice. The scope and costs associated with this service will be discussed and agreed prior to providing detailed regulatory advice. Further details of our pre-application advice service [here](#).

Table 5: Examples of guidance for specific Environment Agency regulation of relevance

Does your innovation project involve...		Regulations you may need to consider:
Planning Permission		<ul style="list-style-type: none"> • Environmental advice on planning proposals
Getting an environmental permit		<ul style="list-style-type: none"> • Check if you need an environmental permit • Risk assessments for specific activities: environmental permits • For further guidance on exemption for R&D projects, contact the relevant environmental regulator
Control of Major Accident Hazards Regulations		<ul style="list-style-type: none"> • COMAH
Air	<i>Carbon Capture and Storage</i>	<ul style="list-style-type: none"> • Carbon Capture and Storage Best Available Techniques • Environmental Risk Assessment for Carbon Capture and Storage
	<i>Hydrogen Production and Use</i>	<ul style="list-style-type: none"> • Inorganic chemicals sector: additional guidance • Guidance in development for hydrogen production from methane/RFG with CCS is available on request. • We are in the process of developing other guidance to support hydrogen production and use. Please refer to Technical guidance for regulated industry sectors: environmental permitting for our latest publications.
	<i>Gasification</i>	<ul style="list-style-type: none"> • Gasification, liquefaction and refining installations: guidance
	<i>Anaerobic digestion</i>	<ul style="list-style-type: none"> • Regulation Anaerobic Digestion (biogas-info.co.uk)
	<i>Emissions to air</i>	<ul style="list-style-type: none"> • Air quality in planning

Does your innovation project involve...		Regulations you may need to consider:
		<ul style="list-style-type: none"> • Emissions Trading Scheme
Land	<p><i>Waste management</i></p> <p><i>(Think very carefully about potential waste status of each output and check guidance)</i></p>	<ul style="list-style-type: none"> • Check if your material is waste • Get an opinion from the definition of waste service • New waste management techniques • Waste and environmental impact • Register or renew waste exemptions • Incineration of waste (EPR5.01): guidance
	<p><i>Spreading waste/ materials to land (e.g. biochar, enhanced weathering)</i></p>	<ul style="list-style-type: none"> • Landspreading guidance • Storing and treating waste to make biochar: LRWP 60 • Storing and spreading biochar to benefit land: LRWP 61
Water	<p><i>Water abstraction</i></p>	<ul style="list-style-type: none"> • Fresh Water - Apply for a water abstraction or impoundment licence • Seawater - Do I need a marine licence Engage with Marine Maritime Organisation
	<p><i>Effluent to water</i></p>	<ul style="list-style-type: none"> • To Fresh Water and Sea water - engage with EA if novel, otherwise enhanced pre-application for Discharges to surface water and groundwater permit
	<p><i>Farming</i></p>	<ul style="list-style-type: none"> • Farming rules for water • Storing silage, slurry and agricultural fuel oil

If you have any further technology or regime specific queries, then contact:

- In England, Ross Lowrie, Senior Advisor (Decarbonisation & Net Zero), at ross.lowrie@environment-agency.gov.uk
- In Scotland, please contact SEPA: ppc@sepa.org.uk
- In Wales, please contact NRW: enquiries@naturalresourceswales.gov.uk
- In Northern Ireland, please contact NIEA: IPRI@daera-ni.gov.uk

Appendix 6: Residual Value Guidance

Capital equipment costs are eligible for funding, but only those which are essential for the demonstration. The eligible capital cost excludes the value of assets at the end of the demonstration (i.e. the residual value), BEIS will therefore not fund 100% of capital equipment costs where there is residual value at the end of the project. Applicants are asked to include in the Project cost breakdown form the capital costs at purchase and the residual value of the capital items at the end of the demonstration. The eligible cost is the difference between the purchase capital cost and residual value (for items which are used solely for the funded activities during the funding duration i.e. 100% utilisation):

Eligible capital cost = Purchase cost – residual value at end of demonstration

This section provides basic guidance on our expectations around residual value.

Asset Classes

For the purposes of this competition we can divide capital assets into three classes, which can be treated differently:

Mature assets: Fully mature with functioning market (e.g. solar farm or new laptops). The eligible cost is only the depreciation costs for the duration of the project i.e. excluding the residual value at the end of the demonstration. The residual value should be calculated using standard accounting practices for depreciation, such as the reducing balance or straight line depreciation methods, with the key assumptions and the lifetime of the asset clearly stated and justified.

Developing assets: Assets without a mature market but with a potentially significant residual value. These may have a market developing (and therefore resale value), or may have a value in their continued use on the site of the demonstrator (value in use). For example, a mid-high TRL electrolyser which is not significantly bespoke. A fair residual value for such assets should be calculated using the principles in this Appendix.

Fully bespoke R&D assets which only have value for the duration of the innovation project and have no residual value afterwards. An example of this asset class is a bespoke gasification system designed to trial hydrogen production at pilot scale for a specific application, but which cannot be used for commercial operation. The eligible cost of these assets is 100% less the scrap value.

Developing Assets

With regards to the 'Developing assets' above, if standard depreciation is not considered a fair and appropriate method, applicants could alternatively consider the:

Resale value – value which could be achieved in selling the asset to another party at the end of the demonstration.

Value in Use – the value of the asset for the current site or owner, for example through revenue generation in commercial operation.

Scrap value – for example the salvage value of the equipment when it is disposed of as scrap material/components after its useful life.

For these developing assets, applicants should use the highest of the above three values as the residual value, except where continued use in the proposed industrial application is planned. If you plan to use the asset for the duration of its lifetime (>3 years) in the proposed industrial application, providing further evidence on fuel switching, the scrap value can be used as the residual value. The applicant must provide evidence that the asset is being used for the agreed purpose and time period, including after the end of the demonstration funding period.

Examples:

- For an applicant considering selling the fuel used after the funding period ends: the applicant could consider using standard depreciation on the asset, or could consider the value of the asset based on its estimated revenue generating ability through the remaining lifetime (e.g. using the expected market price of such fuel).
- For an applicant considering selling assets after the funding period ends: the residual value would be the resale value minus any costs of selling. The resale value is uncertain due to the emerging market and will depend on the technology, scale and condition. The value could be estimated based on:
 - a. discussions with technology suppliers or potential purchasers
 - b. standard accounting practices for depreciation
 - c. the expected value of the asset in another application
- The applicants would be expected to clearly and robustly justify the assumptions based on the particular circumstances of the project.

Application, Assessment and Delivery

Applicants are expected to select a reasonable approach for their assets and project and justify this in the application and Project cost breakdown form. The BEIS and external assessors will use their expert knowledge to determine if the residual value provided is appropriate. If the residual value provided is deemed too low, the project is likely to score lower on value for money. BEIS may request clarification on residual values during the assessment period.

At the end of the demonstrator, prior to project sign off, BEIS will review the residual value of the largest assets and if there is a material change in the residual value (e.g. due to market conditions or the outcome of the demonstrator), this may be adjusted and the final invoice

amended (up to the maximum project grant limit agreed). For example, if a sale price has been agreed for an asset that is greater than the anticipated residual value, this will be reflected.

Applicants are reminded that BEIS reserves the right to review the status of the project and assets 2 years after the end of the demonstrator to ensure the agreed funding, residual value and asset use remains valid and as agreed. If there is found to be a material change in the agreement or value, BEIS reserves the right to claw back any grant overpaid.

This publication is available from: www.gov.uk/government/publications/industrial-fuel-switching-competition-phase-2-demonstration-projects

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