Department for
Business, Energy
& Industrial Strategy

Industrial Hydrogen Accelerator: Stakeholder Engagement Session & Guidance Notes Q&A

Stream 1 Grant Competition

Stream 2A SBRI Competition

Version 3

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Contents

Industrial Hydrogen Accelerator: Question and Answer (Q&A)

UPDATE 27.05.22: This newly updated Q&A covers answers to questions submitted after publication of the Competition Guidance Notes to nzip.hydrogen@beis.gov.uk up until 2pm BST, 18 May 2022. Additional questions submitted during the clarification window, which in our judgement were of material significance, have been addressed and published in this document as questions 40 to 88.

Questions 1-39 were originally published as the Stakeholder Engagement Session Question and Answer (Q&A) on 22/03/22 and updated on 28/04/2022. Of the original questions 1 to 39, the only questions updated since the last publication on 28/04/2022 are questions 15 and 25.

Further details are provided in the Industrial Hydrogen Accelerator Competition Guidance documents/ITTs for Stream 1 and Stream 2A, which are available on the competition webpage. Please note that the Competition Guidance documents have been updated, with the latest version of Stream 1 dated 13.05.22 and of Stream 2A dated 27.05.22, with the adjustments outlined on the web page as well. All questions apply to both Stream 1 and Stream 2A of the competition, unless stated otherwise.

Abbreviations

BEIS	Department for Business, Energy & Industrial Strategy
CHP	Combined Heat and Power
FEED	Front End Engineering Design
HBM	Hydrogen Business Model
HMG	Her Majesty's Government
IETF	Industrial Energy Transformation Fund
ITT	Invitation to Tender (Competition Guidance notes)
NZHF	Net Zero Hydrogen Fund
NZIP	Net Zero Innovation Portfolio
RD&D	Research, Development and Demonstration
SBRI	Small Business Research Initiative
TRL	Technology Readiness Level

Stakeholder Engagement Session Q&A

Section 1: Competition Structure and Timetable

1. Can large businesses apply for SBRI funding? (Stream 2A)

Yes, all businesses can apply for SBRI funding.

2. Why do projects need to be complete by March 2025? Is there flexibility on timescales? (Stream 1 and Stream 2B)

All projects must be complete by March 2025. The funding period ends on 31st March 2025 in accordance with wider HMG funding allocation. For this reason, there is no flexibility on this timescale.

3. What is the definition of "completion" of the project? Is this a constructed & commissioned system, with operation to follow, or is there a minimum period of operation within the timeframe?

The aim of IHA is to promote the demonstration of innovative technology. We expect the demonstration period, after construction and commissioning, to be of the order 2 months. By February 2025 the demonstration of the end-to-end system must be complete, with the project and all outputs finished by March 2025. For Stream 2B, if a project is focussed on a FEED study, the FEED study must be complete and shared with BEIS by March 2025.

4. What is the rule about use of these facilities/capabilities after the end of the funding? Could they then be switched to commercial use for example? (Stream 1 and Stream 2B)

We expect projects to explain the proposed use of the assets post-demonstration (e.g. operational deployment at industrial site, further RD&D uses, decommissioning). Value for money is a scoring criteria. Projects will score better if they propose to use assets to provide additional evidence on industrial use of hydrogen after the demonstration ends, either in long term industrial operation or in further RD&D. This not an eligibility criterion. So yes, the facilities could be re-purposed for commercial use. Eligible costs are those associated with the demonstration, not the commercial deployment of the project or the wider infrastructure on the industrial or pilot site.

5. If a feasibility project, at the conclusion of the Stream 2A funding, shows that it is not commercially or technically viable or not sufficiently attractive, will the funding be withdrawn? (Stream 2A)

The funding for the completed feasibility project will not be withdrawn provided it is completed to the required standard. However, a follow-on project will likely not be successful in receiving funding for the Stream 2B demonstration phase if it is shown not to be viable.

Please note that funding for both Stream 2A and Stream 2B will be awarded after an application process. Succeeding in Stream 2A is not a guarantee of Stream 2B funding.

6. Is there any flexibility allowed for the Stage gate criteria? (Stream 1)

A stage gate decision will be taken on a case-by-case basis. For each project it will be taken into consideration what is feasible and necessary, and the timeframe to achieve it.

Section 2: Competition Scope and Eligibility

7. What does "end-to-end" mean in the context of the IHA programme? Would you accept projects that address only one technology component of an end-to-end system?

End-to-end means that projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. For the purposes of this competition, a robust chain means a full system configuration that could reasonably be used long term on a commercial basis; projects must justify this in their application. The hydrogen generation and end-use do not need to be co-located on the same site. All technologies within the end-to-end system must be within the same IHA application and project team.

8. What "end-use" of hydrogen is in scope?

The end-use of the hydrogen must be for an industrial process, such as manufacturing or refining.

End-use of hydrogen for building space and hot water heating, however large, is not considered an industrial process. Equally, use of hydrogen for district heating for building heat is also not considered an industrial process in this competition. End-use of hydrogen for transport applications or other mobile applications, such as forklifts, is not considered an industrial process. See question 13 for a response on multiple end-uses.

9. Are projects which have already received some funding in previous initiatives in scope?

For Stream 2A projects (SBRI funded feasibility studies), 100% of the project costs must be covered by the funding received through the IHA Stream 2A competition, so any previous funding cannot be used towards any of these project costs.

BEIS will support projects that have previously received other funding. If the other funding is required for the IHA project to progress, funding must be confirmed at the point of the IHA demonstrator application (Stream 1 and 2B), and there must be no overlap in the scope of the costs covered. Demonstrator applications (Stream 1 and 2B) will not be successful if their delivery relies on other funding sources which are not yet confirmed.

For Streams 1 and 2B if a project already has BEIS or other funding for one innovation aspect (e.g. Low Carbon Hydrogen Supply 2 or Industrial Fuel Switching), that does not exclude it

from the IHA, provided the scope of costs is separate and the IHA application meets all other eligibility criteria and grant intensities.

Please note however that for Streams 1 & 2B, projects will be required to meet the funding intensity limits set out in the IHA competition guidance. Use of other public funds in scope of UK Subsidy Control & EU State Aid rules (whether received from BEIS or any other UK or non-UK public fund) for any element of the end-to-end demonstrator in scope or not in scope of IHA funding will count towards the funding intensity limits set in the competition guidance.

If considering the use of non-IHA public funds within their projects, applicants are further advised to consult the specific rules associated with the receipt of that funding.

10. Does the hydrogen produced have to be from electrolytic / green sources? Or can other sources be developed?

The IHA programme is technology agnostic and does not directly exclude any hydrogen generation technology types. Applicants must confirm the hydrogen generation technology can be operational by January 2025 and will be low carbon by 2030 (for demonstration projects). Projects will score more highly if the hydrogen generation technology used in the Stream 2B demonstrator meets the Draft Low Carbon Hydrogen Standard (LCHS). Other hydrogen carriers, such as ammonia, may be included, but must justify that their use is widely applicable to UK industry and fully compatible with a net zero future.

11. Do projects need to have pre-existing on site renewables or will you consider projects either where renewables are delivered as part of the project or renewables are contracted and supply of green power is via the grid?

A project is not required to be connected to a dedicated renewable energy production system. As long as the hydrogen generation eligibility is met, applicants are free to choose their energy source for hydrogen production. If renewables are used these could be pre-existing or could be delivered as part of the project.

A portion of the funding requested can be used to cover:

- Renewable electricity generation capex
- Electrical infrastructure, such as grid/direct wire connection
- Other energy inputs to hydrogen generation e.g. biogas generation

Eligible costs exclude residual value of these assets at the end of the demonstration – see competition guidance (Stream 1 Appendix 4) for further information.

12. Does the hydrogen production have to be co-located on the same site(s) as the industrial switchers? Alternatively, can production & use take place on separate dispersed sites, or connected via an existing network?

Hydrogen production and use are not required to be co-located.

13. Could the hydrogen supply element of the project be used for mixed purposes, i.e. both the IHA end-use demonstration and the supply of hydrogen to another business for example?

The programme will allow projects which include multiple offtakers for the low carbon hydrogen. However, the core hydrogen end-use must be for industrial processes and a minimum of 50% of the hydrogen generated in the demonstration project in the timeframe of this competition funding must be used for the core industrial application(s). If any portion of the hydrogen is used for non-industrial end-use applications, BEIS will not provide funding for those end-uses or for the relevant portion of the hydrogen generation and delivery assets.

14. Is hydrogen power generation in scope?

Hydrogen based power generation is not considered as an industrial application in this programme unless the generator / CHP is integral to the industrial site / process. Hydrogen-based power generation primarily for grid export is not considered an industrial process. See the competition guidance section 2.2 for more detail.

15. What industrial sectors are in scope? What qualifies as industry - for example, does industry include ports and port operations or shipping?

UPDATED: The core hydrogen end-use must be for an industrial process under industrial operational conditions (but these could be simulated at a pilot facility). Non-exhaustive examples include the use of hydrogen in furnaces, kilns, dryers and steam boilers to replace fossil fuels in manufacturing and refining processes.

Ports/harbours are not excluded directly. Whether a port project is eligible will depend on whether the project and the component technologies meet the eligibility criteria, as outlined in sections 2.2 and 5 of the competition guidance. In particular, the core hydrogen end-use must be for industrial processes and a minimum of 50% of the hydrogen generated in the demonstration project in the timeframe of this competition funding must be used for the core industrial application(s). Please note that end-use of hydrogen for transport applications (including shipping) or other mobile applications, such as Non-Road Mobile Machinery (e.g. forklifts), is not considered an industrial process under this competition. Using a share of the hydrogen generated for such an application is permissible but these costs are ineligible. There can be more than one industrial application in a single project.

16. Can hydrogen be used as feedstock e.g. in chemical plants?

Hydrogen can be used as an industrial feedstock, and this would be considered an industrial application. The applicant will need to justify that knowledge gained from the project/system demonstration is applicable widely to UK industry to achieve high marks.

17. Can the hydrogen be used for partial industrial fuel switching via blending?

Other hydrogen carriers, such as ammonia, may be included, but must justify that their use is widely applicable to UK industry and fully compatible with a net zero future. They must be

produced from hydrogen which meets the criteria outlined above. Carbon-based synthetic fuels, such as synthetic methanol or methane, are not eligible for this competition. Hydrogen blends are acceptable if the hydrogen component is low carbon, projects can be justified as innovative in their production or end-use, are widely applicable to UK industry and compatible with a net zero future.

18. Is it necessary that the hydrogen generation is located in the UK, if the industrial application is in the UK?

Yes, all technologies within the end-to-end demonstration chain must be in the UK, including hydrogen generation.

19. What TRL level are the submissions expected to be at?

The end-to-end industrial hydrogen system will likely be made up of multiple component technologies (e.g. electrolyser/reformer, delivery pipework, furnace/burner), some of which may be more mature than others. Projects must be able to justify that the full solution/system and/or specific technologies within it are innovative and unproven prior to launch. There are no eligibility stipulations over the TRLs of the technologies; individual components are permitted to be mature/commercially available. However, applicants should bear in mind that projects where all component technologies are currently commercially available are unlikely to score highly unless there is significant innovation in the technology integration / system configuration. Conversely, projects where multiple component technologies in the system are low TRL may present a high risk to successful project completion.

20. Will there be a project size restriction, rather than a funding one e.g. in terms of size of electrolyser capacity / hydrogen demand? Can projects >10MW apply?

For Stream 1 and Stream 2B demonstration projects we expect them to be of the order 1-10MW (~1-7MWH2 higher heat value equivalent), but this is an indicative guide and not an eligibility criterion. Projects >10MW are therefore eligible. However, considering the existence of RD&D projects below 1 MW already in the UK, a project of this scale would be less likely to offer the level of knowledge-gain necessary at an industrial scale to score highly on the relevant assessment criteria.

21. Do you need to have completed feasibility/concept stage before applying to Stream 1 demonstrator grant? What evidence will you need to provide? (Stream 1)

A project does not have to have completed a funded feasibility project prior to application to Stream 1, but significant prior work will be expected to achieve high marks.

Please refer to Section 6 of the IHA Stream 1 competition guidance document to see the information required in the assessed criteria.

22. Are feasibility studies from other competitions acceptable as pre-work for Stream 1? Are new applications of a similar nature to previous NZIP programmes such as Green Distilleries still considered innovative? (Stream 1)

As above, we do not require formal submission of a feasibility study in applying for Stream 1. However, any work completed in feasibility studies (from other competitions or otherwise) will be useful in developing a strong proposal. Applications of a similar nature to previous NZIP programmes could apply if they meet the eligibility criteria; however, if they are very similar to projects that have already been funded, they may score less well on innovation.

23. Could the pilot activity be undertaken at an R&D (non-manufacturing) site?

Yes. The end-use must be an industrial application under industrial operational conditions, but these could be simulated at a pilot facility. The project must justify that the knowledge gained is relevant in an operational industrial environment.

24. Will RTO organisations be eligible for claiming 100% funding in the Demonstrator phases?

For all Streams, applications must be led by private organisations or research and technology organisations (RTO) and may not be led by universities or non-commercial organisations. We welcome university consortium partners where they can add value. As with other government funding bodies funding higher education institutions, we will not pay more than 80% of the Full Economic Costs (FEC) calculated using the Transparent Approach to Costing (TRAC) methodology. Any applications requesting items that would ordinarily be found in a department, for example non-specialist computers, must include justification. Where applicable, other research organisations that are not higher education institutions, can receive up to 100% funding.

25. Will applications to the Stream 2A feasibility stream need to specify who will provide the hydrogen supply, or can this question be answered as part of the feasibility investigations? (Stream 2A)

UPDATED: Projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. To score highly in Stream 2A criterion 5, a Stream 2A applicant would need to show a draft plan for hydrogen supply and a letter of support from a potential supplier. Feasibility studies may still apply if they do not have a confirmed hydrogen supply route, and may explore these during the study.

Section 3: Application

26. Can academic organisations join the competition as a partner? Will there be any requirement to have academic involvement?

Applications must be led by private organisations or research and technology organisations (RTO) and may not be led by universities or non-commercial organisations. Academic institutions can participate in collaborative applications. There is no requirement to have academic involvement in an application.

27. Is IHA open to consortia or only individual companies?

IHA is open to both consortia and individual companies.

28. Is it possible to have subcontractors for a project funded by IHA?

Yes, it is possible to have subcontractors and partners.

29. Can one company apply to both streams?

Applicants may submit more than one application to the overall IHA programme. Applicants may submit more than one application to each Stream, provided they are materially different in their core innovation and/or configuration.

For a single project, applicants are encouraged to choose between Stream 1 and Stream 2A depending on how much feasibility work has already been completed on the project. If a project considers itself applicable to both IHA Streams, the applicant may apply to both Streams for the same project, but will need to fill out separate applications and declare on the application that the project has applied to both Streams. The same project or scope of work cannot be funded twice.

Section 4: Commercial

30. Why is the Stream 2 of the competition a hybrid of SBRI (for Stream 2A feasibility studies) and grants (for Stream 2B demonstration projects)?

At feasibility stage (Stream 2A) projects will be less developed and further from the commercial market, with more risk and uncertainty associated with them. For this reason BEIS will provide 100% funding through SBRI, to reduce the financial risk to applicants.

At demonstration stage (Stream 2B), projects will be better developed, with reduced risk of being unable to generate useful knowledge that informs commercial usage. For this reason, a sharing of risk through grant funding is more appropriate as it offers the best value for money for the taxpayer, whilst still mitigating the financial risk to the project.

31. Are there any restrictions on the source of matched funding? I.e. are all of debt, equity, other grants / project budgets acceptable?

Match funding will not be required for Stream 2A (SBRI funded feasibility studies), for which 100% of project costs must be funded through the IHA programme.

Match funding will be required for Streams 1 and 2B (grant funded demonstration projects). In line with UK Subsidy Control rules, projects will be eligible to receive a maximum level of public funding, as a percentage of overall project costs, which are set relative to the organisation's size and subject to adherence to competition rules. The funding level limits for each organisation type are set out within the competition guidance. Projects will be required to fund the remainder of project costs (i.e., match fund) from other sources beyond the IHA programme.

Debt and equity are acceptable sources of match funding, provided that this is accessible and projects are able to provide evidence of the availability of this funding by the first project milestone (the timing of project milestones will be agreed with projects at contracting stage). In circumstances where equity or debt is not accessible for use against project costs by the first milestone, for example where equity has not been sold/released, this would not be an acceptable form of match funding.

For an explanation of whether other grants and public funding are acceptable forms of match funding, please see Question 32.

32. Can we match-fund against other grant funding?

Other public funds (whether received from BEIS or any other UK or non-UK public fund) will not be acceptable forms of match funding.

Projects receiving other public funds (whether received from BEIS or any other UK or non-UK public funding) may still apply to the IHA. However, all forms of public funding will count towards the public funding limits and grant intensities set for the programme.

Please see the answer to Question 9 and the competition guidance documents for more information.

33. Is funding from overseas governments allowed against any of the stream routes?

Other public funds (whether received from BEIS or any other UK or non-UK public fund) will not be acceptable forms of match funding.

For Streams 1 and 2B, a project which already has funding from overseas governments (or any other public funding route) for one innovation, may apply for the IHA, provided the scope of costs is separate and the IHA application meets all other eligibility criteria and grant intensities. For Stream 2A, all project costs must be funded through the IHA.

Please see the answer to Question 9 and the competition guidance documents for more information.

34. Should match funding be cash in bank or is in kind (tangible - labour etc) allowable? (Stream 1)

In kind contributions such as staff time can be included in the match funding total, as long as they relate to eligible project costs, are appropriately costed at a fair market value, and are robust, realistic and justified in terms of the proposed project plans.

Section 5: Other BEIS Funding and Competitions

35. How does IHA link to the Hydrogen Business Model (HBM) and the Net Zero Hydrogen Fund (NZHF)? Can projects apply to IHA and also HBM, for operational support?

Please see section 2.3 of the competition guidance document.

36. Is there a link with other Net Zero Innovation Portfolio (NZIP) funding and could a project receive both?

The IHA is a new competition, and there is no requirement to have participated in any other NZIP programmes. If a project already has BEIS or other funding for one innovation aspect (e.g. Low Carbon Hydrogen Supply 2 or Industrial Fuel Switching), that does not exclude it from the IHA, provided the scope of costs is separate and the IHA application meets all other eligibility criteria and grant intensities. For example, a project which is already receiving funding to demonstrate a novel electrolyser, could apply to the IHA for the remainder of the chain (hydrogen delivery and industrial end-use). Please see section 2.3 of the competition guidance notes / ITT for further information.

Section 6: Miscellaneous

37. Will there be any networking events to help connect hydrogen SMEs to potential industrial partners?

A Launch and Networking event is taking place on Monday 9th May 10-12. BEIS will provide an overview of the competition and attendees will have the chance to meet and network with other prospective applicants. For more information please visit the competition webpage and the Gemserv website here.

For anyone who would like to network with others who may be interested in applying to the IHA competition and are looking for collaborators, please sign up to the B2Match IHA networking platform. You can sign up here: https://industrial-hydrogen-accelerator.b2match.io/.

38. Will BEIS be managing the grant competition?

Yes, BEIS will manage all the IHA competition phases. External third-party support is planned to be used for assessment and project monitoring.

39. Are companies that are based outside of the UK able to participate, or will the company need to register in the UK to participate?

For all IHA Streams, projects can work with international partners, but over 50% of the funded project work (by value) must be conducted in the UK. The physical demonstrators must be conducted in the UK.

Guidance Notes Q&A – Clarification window

40. Is the use of hydrogen for industrial heat (e.g. in an industrial boiler/kiln) on a mine or quarry eligible? The competition guidance excludes the construction and mining and quarrying sector due to the Red Diesel Replacement programme.

The use of hydrogen for industrial heat in an industrial process boiler/kiln on a mining or quarrying site can be considered an industrial process for the purposes of this competition, and is not excluded on the basis of the sector. An updated version of the competition guidance documents was published on 13 May 2022 to reflect this eligibility answer.

41. Are hydrogen fuel / power generation projects in scope of the IHA?

As stated in section 2.2 of the competition guidance documents, hydrogen-based power generation is not considered an industrial application unless the generator / CHP is integral to the industrial site / process, such as industrial sites which use the majority of the heat and power from a CHP unit. This must be justified in the application. A hydrogen-based power generation technology, such as a gas turbine, which is used primarily to provide mechanical work in an industrial process that previously used fossil fuels is eligible. A hydrogen-based power generation technology which is newly built on an industrial site to supply a site electricity demand which was previously supplied from the electricity grid is not eligible. Hydrogen-based power generation primarily for grid export is not considered an industrial process under this competition.

42. Is use of hydrogen in harbours / ports an eligible end-use?

Ports/harbours are not excluded directly. Whether a port project is eligible will depend on whether the project and the component technologies meet the eligibility criteria, as outlined in sections 2.2 and 5 of the competition guidance. In particular, the core hydrogen end-use must be for industrial processes and a minimum of 50% of the hydrogen generated in the demonstration project in the timeframe of this competition funding must be used for the core industrial application(s). Please note that end-use of hydrogen for transport applications (including shipping) or other mobile applications, such as Non-Road Mobile Machinery (e.g. forklifts), is not considered an industrial process under this competition. Using a share of the hydrogen generated for such an application is permissible but these costs are ineligible.

43. Are green marine vessels (e.g. ferries or ships) running on hydrogen fuel cells eligible as an end-use?

See section 2.2 of the competition guidance: End-use of hydrogen for transport applications (including shipping) or other mobile applications, such as Non-Road Mobile Machinery (e.g. forklifts), is not considered an industrial process under this competition. Using a share of the hydrogen generated for such an application is permissible but these costs are ineligible.

44. Would transporting the hydrogen by marine vessels (e.g. ferries) between production and end-use be considered a robust end-to-end chain?

Section 2.2 of the competition guidance states that “For the purposes of this competition, a robust chain means a full system configuration that could reasonably be used long term on a commercial basis; projects must justify this in their application.” There is nothing to exclude water transport of hydrogen within the chain, but projects should consider and justify in their application whether the chain meets the criteria given and in particular that the economics could be reasonable for commercial operation for the hydrogen end-user.

45. Is the use of hydrogen in distilleries considered an industrial application?

Yes, food and drink manufacturing processes are considered industrial processes, so provided the project meets all other eligibility criteria, this is acceptable.

46. Is energy intense municipal wastewater treatment considered an industrial process in scope of the competition?

Yes.

47. Is the production/ manufacture of Sustainable Aviation Fuel with Green Hydrogen used as a base classed as an appropriate industrial use case?

Projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. Other hydrogen carriers, such as ammonia, may be included, but must justify that their use is widely applicable to UK industry and fully compatible with a net zero future.

End-use of hydrogen or hydrogen based fuels for transport applications (including aviation) is not considered an industrial end-use process under this competition. The manufacture of carbon-based synthetic fuels, such as synthetic methanol or methane, as a hydrogen end-use, is not eligible for this competition. Ammonia manufacture is considered an industrial end-use process.

48. Is the manufacture of fertiliser or fertiliser feedstock with green hydrogen used as a base classed as an appropriate industrial use case?

Fertiliser manufacture is considered an industrial process under IHA. Projects will score higher (in the performance criterion) if the knowledge gained is widely applicable to UK industry, so projects would need to justify the applicability of the knowledge gained across other industrial sectors.

49. IHA Guidance states: the construction and mining and quarrying sectors are not considered industry for the purposes of this competition. Can you confirm whether brick making is considered an eligible industrial process, and not considered as construction?

Yes, brick making is considered an eligible industrial process. Please note that there was an update to the competition guidance on 13 May 2022 on this exclusion stating “However, the use of hydrogen for industrial heat in an industrial process (for example industrial boiler/kiln) on a construction, mining or quarrying site is considered an industrial process for the purposes of this competition, and is not excluded on the basis of the sector.”

50. Is on-site hydrogen production and use in a brewery in scope of the competition?

Yes, providing the technologies/project meets all other eligibility criteria, hydrogen generation and use in a brewery process is in scope.

51. Would extracting hydrogen from spent grain (biohydrogen) and using the hydrogen in a manufacturing facility be in scope?

The IHA programme is technology agnostic and does not explicitly exclude any hydrogen generation technology types. Please see section 2.2 (page 14) of the competition guidance for more detail on the hydrogen generation technology requirements. Use of hydrogen in a manufacturing facility, for an industrial process, is in scope. The hydrogen can be used on the same site that it is produced on, but this is not a requirement.

52. Is ammonia production considered an end use eligible for application? Under what circumstances is an ammonia project using hydrogen for production not eligible?

Ammonia manufacture is considered an industrial end-use process. Projects will score higher if the knowledge gained is widely applicable to UK industry (criterion 2), so projects would need to justify the applicability of the knowledge gained across other industrial sectors.

53. Does industry include agricultural industry?

All industrial processes are considered in scope except where they are explicitly listed in technology exclusions; this can include the agricultural sector. However, non-road mobile machinery NRMM (e.g. tractors, forklifts) and other mobile machinery are excluded.

54. If the hydrogen produced by an industrial asset will be used to electrically power the asset, via a fuel cell or CHP generator, is this eligible? Would a project be eligible if a new asset, performing a new role onsite, consequentially decreases total grid energy consumed on the site (by reducing the need for another electricity consuming asset)?

Yes, using hydrogen within a CHP/fuel cell is acceptable, provided the majority of the heat and electricity from the CHP/fuel cell are used within the industrial process(es), and that the process change reduces site/process CO2e emissions. A project reducing the electricity grid import is acceptable, providing the new process reduces CO2e emissions of the overall site/process, and meets all other eligibility criteria. Please see page 17 of the Stream 1 guidance and 16 & 17 of the Stream 2A guidance around power technologies.

55. Is it acceptable for a new asset to increase energy efficiency on a site (as a whole), and thus increase the potential capacity of the site?

New assets which increase the energy efficiency and capacity of the site are eligible, provided they meet all other eligibility criteria. The full capital equipment cost of new assets is only eligible for equipment that is specialised and bespoke enough that it only has a value for the duration of the project. For capital equipment that has a value at the end of the funded project, the eligible cost is only depreciation costs for the duration of the project.

56. The guidance states that "for mature assets (e.g. solar PV), the eligible cost is only the depreciation costs for the duration of the project." Given that this is a grant, could you please confirm whether the 'unfunded portion' (e.g. 60% for a large company), which is invested by the applicant, may include the full value of the asset (e.g. £10m), not just the depreciation (which might only be £1m)? (Stream 1)

Applicants must first calculate the eligible cost of the project (including for each individual component/work package/contract), before applying the relevant grant intensities. The eligible project costs must account for the residual value of the assets at the end of the demonstration – guidance on calculating residual values can be found in Appendix 4 of the Stream 1 competition guidance notes. Only the eligible costs can be included in the project cost breakdown form as part of the total project value. The relevant grant intensity must then be applied to the eligible costs. In the clarification example, if a mature technology (e.g. solar farm) capital cost is £10m, and you estimate the residual value at the end of the funded project to be £9m, the eligible cost is £1m and the relevant grant intensity should be applied to the £1m. The £9m is not an eligible cost and cannot form part of the match funded contribution (the 'unfunded' portion) to the project.

57. Is a project eligible if hydrogen is transported using tankers between generation and end-use for trial purposes, with a view to changing to a permanent solution after Stream 2B is complete? The hydrogen supplier is part of the application.

Projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. For the purposes of this competition, a robust chain means a full system configuration that could reasonably be used long term on a commercial basis; projects must justify this in their application. Hydrogen transportation by tanker is eligible if it is justified as a potential long term solution for the project. However, if tankers are used for trial purposes only and would not be considered as a long term end-to-end solution, the project is not eligible.

58. Is direct connection to a third-party hydrogen supply eligible? Is a project sourcing hydrogen from the local gas network eligible? Can the hydrogen generation already exist as a separate project outside IHA? The hydrogen supplier is part of the application.

Transport of the hydrogen by pipeline is acceptable, whether this be a new pipeline or an existing pipeline. The hydrogen generation and end-use do not need to be co-located and do not need to be owned/operated by the same organisation. Projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. For demonstrator projects, applicants must confirm the hydrogen generation

technology can be operational by January 2025 and will be low carbon by 2030. The hydrogen generation/supply may already exist, but must meet the eligibility criteria and projects will score more highly if the hydrogen generation technology used in the demonstrator meets the Draft Low Carbon Hydrogen Standard (LCHS). Equally, the hydrogen supply may be funded separately outside the IHA programme, but funding must be confirmed at the point of the IHA demonstrator application, and there must be no overlap in the scope of the costs covered.

59. Is hydrogen generation through electrolysis considered innovative? Is a commercially available electrolyser eligible if it is used in an industry which is novel? Would a commercially available electrolyser powering a bespoke industrial hydrogen burner system be eligible?

Whether electrolysis technology is considered innovative will depend on the type of electrolysis. A commercially available electrolyser is permitted as the hydrogen generation technology, providing there is innovation in other technologies or in the system integration of the technologies. See eligibility criterion 2 “There are no specific technology readiness levels required for the component technologies, but projects must be able to justify that the full solution and/or specific technologies within it are innovative and unproven prior to launch.”

60. Would plasma technology converting black bin waste to hydrogen and carbon black for hydrogen use in the chemical industry be eligible? The technology has been developed on a small scale but is not commercialised for industry yet.

The IHA programme is technology agnostic and does not explicitly exclude any hydrogen generation technology types. Projects will score more highly in the ‘Emissions, environment and safety’ criterion if the hydrogen generation technology used in the demonstrator is consistent with the Draft Low Carbon Hydrogen Standard (LCHS). You will need to explain what the carbon black will be used for and the environmental and emissions impact of that use. Hydrogen use in the chemical industry is an eligible end-use.

61. Can the feasibility study assess a number of different hydrogen production options?

Projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. To score highly in Stream 2A criterion 5, a Stream 2A applicant would need to show a draft plan for hydrogen supply and a letter of support from a potential supplier. Feasibility studies may still apply if they do not have a confirmed hydrogen supply route, and may explore these during the study.

62. Are there any conditions on the type of manufacturing the hydrogen would be used in?

The core hydrogen end-use must be for an industrial process under industrial operational conditions (but these could be simulated at a pilot facility). Please see section 2.2, page 15 of the competition guidance notes, as well as the technology exclusions for more detail.

63. Can you take part in the feasibility study without going ahead with Stream 2B?

The Stream 2A feasibility study will support the development of the project team's understanding of the core and ancillary technologies, the performance and costs of the technology/system, and the delivery plan for Stream 2B demonstration/FEED. Projects which receive Stream 2A funding are under no obligation to proceed to Stream 2B. Projects will score better in Stream 2A Criteria 1 and 4b if their plans will better support the competition objectives and the project as a whole will provide greater evidence on industrial use of hydrogen.

64. Does the hydrogen generation technology have to be operational by January 2025 for Stream 1, Stream 2A and 2B? Can you confirm it is acceptable to apply to Stream 2A funding on the basis of applying for funding in Stream 2b for a FEED study?

For applicants applying for demonstration funding in Stream 1 or in the future Stream 2B, applicants must confirm that the hydrogen generation technology can be operational by January 2025. For applicants considering applying to Stream 2A and then Stream 2B for a FEED study, the FEED study can be completed on a hydrogen supply route that would not be operational by January 2025, but we would expect Final Investment Decision (FID) to be taken shortly after the FEED study is complete, with a view to implementing by the end of 2026 to support IHA programme objectives. The FEED study in IHA must be on an innovative end-to-end project. Projects looking to implement more mature permanent solutions after 2025, or looking to do a FEED study focussed only on the on-site industrial end-use, should consider the Industrial Energy Transformation Fund (IETF) as this may be a more appropriate funding route. Yes, it is acceptable to apply to Stream 2A with a view to applying to Stream 2B for a FEED study.

65. Can you please confirm whether testing activities for part of the whole industrial process can be considered as a demonstrator project for Stream 2A or 2B funding?

Projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. The industrial end-use does not need to encompass the whole industrial site or process, it could be one piece of industrial end-use equipment.

66. Can you please confirm projects applying for Industrial Hydrogen Accelerator funding can apply to Hydrogen Business Model as well, and can these projects also apply for other future funding?

IHA projects could apply to the Hydrogen Business Model for revenue support, providing they meet all eligibility requirements of IHA and HBM; please note that the hydrogen business model criteria are still under review, so this is subject to confirmation. IHA projects must be able to deliver the scope they have applied for without relying on other unconfirmed funding; applications will not be successful if their delivery relies on other funding sources which are not yet confirmed at the point of application. Please see section 2.3 of the competition guidance for more detail on other funding, including on applying to IHA alongside other public funding.

67. Can you please confirm whether activities carried out as a follow on from work done under other public funding mechanisms are eligible for IHA Stream 2A and 2B funding?

Please see question 9 of this Q&A document for more information on projects which have received funding from previous initiatives. Projects receiving other public funds (whether received from BEIS or any other UK or non-UK public funding) may still apply to the IHA. However, all forms of public funding will count towards the public funding limits and grant intensities set for the programme in Stream 1 and Stream 2B. No costs can be funded twice. Please see section 2.3 of the competition guidance for more detail on other funding, and section 4.2 of the Stream 1 competition guidance for detail on grant intensities.

68. Can you please confirm what is the maximum subcontractor costs allowed as a percentage of the total project costs?

There is no maximum percentage of costs that can be delivered by a subcontractor. However, please see pages 26-27 of the Stream 1 competition guidance and 24-25 of the Stream 2A competition guidance for more detail. Assessors will review the applications, and in particular the Project Cost Breakdown Form and Delivery Plan, to determine whether the contracting and financial arrangements are appropriate, including reviewing compliance with subsidy control. Projects must also pass financial and commercial due diligence.

69. Can you please confirm whether the costs for preparing an application for Stream 2B are considered eligible costs to be included in cost spreadsheet of the application for Stream 2A?

No, costs incurred in preparing an application to Stream 2B are not eligible costs within Stream 2A or Stream 2B. However, much of the information required for the Stream 2B application will be similar to that included in the feasibility study report for Stream 2A.

70. If a feasibility study is funded and completed by a researcher, would the industrial site be able to apply for funding to implement the solution? Does the same organisation need to lead the application to Stream 2A and Stream 2B? If the market is identified, do customers need to be confirmed and secured at the time of the submission of the application?

Yes, if a Stream 2A feasibility study has been completed on a project around hydrogen fuel switching for an industrial process/facility, the industrial facility can apply for Stream 2B funding to demonstrate the solution (and this can include implementing it on their site), provided the project meets all other eligibility criteria. Stream 2A and Stream 2B applications do not need to be led by the same organisation, but they must be based on the same project. The project scope should not be materially different than that proposed at Stream 2A application stage; the Stream 2A project monitoring officer and Stream 2B assessors will consider whether the Stream 2B project is eligible or has changed materially from Stream 2A. Any companies involved in applications to Stream 2B will also need to pass the commercial and financial due diligence checks. Please do note that applications to all streams must be led by private organisations or research and technology organisations (RTO), and may not be led by universities or non-commercial organisations.

An application to Stream 2A must include a full-end-to-end project. An application to Stream 1 and 2B must prove support from the site demonstrating the technology. Future customers for

the technology, beyond the demonstration site(s) and project team, do not need to be identified at the point of application to any IHA stream.

71. What is considered end use? It is conceivable that a project can have the following elements (1) a novel hydrogen production process; (2) a novel industrial process utilizing that H2 to produce a product; (3) the use of the product produced in (2) for an industrial application. What is required to satisfy the "industrial end use" requirement, given that each of steps (1), (2) and (3) are capable of this description?

The core hydrogen end-use must be for an industrial process under industrial operational conditions (but these could be simulated at a pilot facility). Therefore, utilising hydrogen (as a fuel, feedstock or reductant) in an industrial process to make an end-product is eligible. In the scenario above, (1) and (2) should be sufficient, providing (2) is using the hydrogen in an industrial process.

72. Does the market confirmation and use of ammonia and hydrogen blends have to be produced during application stage or can this be demonstrated as part of the output of the Stream 2A feasibility study?

Projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. In applying for Stream 2A we will expect you to share details on the whole end-to-end chain, including end-use of the hydrogen.

73. Can delivery infrastructure be included within the project costs for Stream 2B?

Please see section 8.4 of the Stream 2A competition guidance for an indicative list of eligible costs for Stream 2B (subject to change). For projects receiving Stream 2B demonstration funding, we expect that "Hydrogen generation, storage, delivery systems and end-use equipment required for the demonstration system are eligible". Delivery infrastructure for any end-products produced in a manufacturing process is not within scope.

74. Will projects which reduce the use of fossil fuels in the short term, facilitating a longer term complete removal of fossil fuels, be acceptable for this application?

Projects will need to demonstrate that their innovation is compatible with a net zero future. Projects which fully decarbonise a process will score higher on the "Emissions, environment and safety" criterion. Hydrogen blends are acceptable if the hydrogen component is low carbon, projects can be justified as innovative in their production or end-use, are widely applicable to UK industry and compatible with a net zero future.

75. Do industry presentations via webinar or conference meet the criterion for "widely disseminated"?

Industry presentations via webinars do count as a dissemination activity, provided they are open to all and advertised widely. Projects will score better on Stream 2A Criterion 5a and Stream 1 criterion 4c if they provide comprehensive and effective dissemination plans.

76. We expect that IP is not to be disseminated publicly, is this correct?

Commercially sensitive information (such as hourly rates) and IP is not expected to be publicly shared, but the scope of information withheld should be kept to a minimum and discussed and agreed with BEIS prior to redacting/withholding. See section 7 of the competition guidance documents for more information on deliverables and reporting.

77. The application form (page 4) requests the applicant to confirm the "Estimated Stream 2B Total Demonstration Project Costs (£)". Please can you confirm the level of estimating accuracy that is required for submission at this stage. (e.g. Class 1 against 18R-97 standard).

There is no accuracy level requirement of the cost estimates for Stream 2B at Stream 2A application stage. Projects should state the accuracy of the Stream 2B cost estimates in Stream 2A criterion 4b, and provide a sufficient amount of disaggregation of costs so that it is clear how the total estimated cost was arrived at.

Projects successful in Stream 2A will have another chance to estimate their Stream 2B costs during the feasibility study prior to application to Stream 2B; we would indicatively expect at least Class 4 AACE cost estimates for the demonstration/FEED by the end of the feasibility stage.

78. Would BEIS directly fund the SBRI to two partnering organisations for Stream 2A (50/50), with one acting as lead?

Bids may be submitted by single applicants or consortia. For consortium bids, only one application should be submitted for each project. The lead organisation must sign up to the Stream 2A terms and conditions. How the consortium manages the commitments that the lead organisation makes on its behalf is the responsibility of the consortium. BEIS will pay all funds directly to the lead applicant only.

79. Please could you clarify clause 18(7) within “IHA Stream 2A: Terms and Conditions (Annex 1B)” as the wording appears to be incorrect. We believe 'under this clause' should read 'under this contract'; and 'whichever is the greater' should be removed as there is only one aggregate liability position.

Yes, ‘whichever is the greater’ will be removed from this clause in the final version of the T&Cs. However, ‘under this clause’ is the correct wording.

80. Can a Stream 2A project focus only on the novel hydrogen production system?

No, applications to all Streams of IHA must cover the full end-to-end system, from hydrogen generation to industrial end-use of the hydrogen.

81. What is the maximum percentage of an academic/university budget as a partner?

Applications must be led by private organisations or research and technology organisations (RTOs) and may not be led by universities or non-commercial organisations. There is no cap on the percentage the total project budget that can be allocated to a particular partner organisation, such as an academic/university organisation. Whilst universities and other non-

commercial organisations may be project partners, applicants must demonstrate a credible and practical route to market and will be assessed on their ability to deliver the required outputs. You should calculate your bid price bearing this in mind, and that your proposal will be assessed as to whether it reflects a fair market value. You are entitled to include overheads but remember that this is a competitive tender.

82. Can we also ask for some minor equipment funding such as gas analysis equipment, HazOp study, Pilot plant design study as part of 2A feasibility costs? Are simulation software, hardware and person-time eligible for Stream 2A funding?

The Stream 2A feasibility project may also request minor funding for equipment and software required to develop the project concept further. Please see Appendix 3 of the Stream 2A competition guidance for more details on eligible and ineligible costs. The total cost for Stream 2A feasibility work must be no more than £400,000 per project and BEIS must fund 100% of eligible project costs. The full capital equipment costs is only eligible for equipment that is specialised and bespoke enough that it only has a value for the duration of the project. For capital equipment that has a value at the end of the funded project, only depreciation costs for the duration of the project are eligible.

83. Can the future Stream 2B do testing on a pilot scale pre-commercial system as well as a FEED study?

The future Stream 2B can do both pilot scale testing and a FEED study, provided these are for the same project concept (same process, innovation and industrial application). They will be considered a single project, so must not exceed £7m in the total grant funding requested for the Stream 2B.

84. Can the Stream 1 demonstration grant be used after the Stream 2A and Stream 2B feasibility and FEED work?

No. The only time a project can apply to Stream 1 demonstration is during this application window, which closes 14:00 BST, 21 July 2022 for Stream 1. Stream 1 is aimed at projects which have already done some feasibility work and are ready to go on to demonstration. Stream 1 demonstration projects must be complete by March 2025.

85. Is the testing of equipment such as fuel cell or drive trains, that ultimately have a transport application, eligible for IHA as an end-use of hydrogen?

End-use of hydrogen for transport applications (including shipping) or other mobile applications, such as Non-Road Mobile Machinery (e.g. forklifts), is not considered an industrial process under this competition. End-use of hydrogen in vehicle/fuel cell manufacturing processes is eligible if the hydrogen is used in the manufacturing process itself e.g. for heat in material/component manufacture. End-use of hydrogen for testing of transport equipment is not eligible.

86. It states in the IHA documents that a project cannot apply to both the NZHF and the IHA for capital funding at the same time. However, if one project feeds into another project would this still be eligible for both funds? For example, the company that is potentially supplying the hydrogen is seeking funding through the NZHF and this hydrogen would be used as part of the IHA project application?

A project cannot apply to both the NZHF and the IHA for capital funding at the same time, even if the scope of costs is different; the project must select the more appropriate source of capital funding. IHA projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. Projects looking for funding only for the industrial end-use demonstration / implementation could consider the Industrial Fuel Switching competition or Industrial Energy Transformation Fund. If another source of funding is required for the IHA project to progress, funding must be confirmed at the point of the IHA demonstrator/FEED application (Stream 1 and 2B), and there must be no overlap in the scope of the costs covered. In addition, the core hydrogen end-use must be for industrial processes and a minimum of 50% of the hydrogen generated in the demonstration project in the timeframe of this competition funding must be used for the core industrial application(s).

87. Does the letter of support from the hydrogen supplier commit the supplier to the full project?

The lead organisation must sign up to the Stream 2A terms and conditions or the Stream 1 Grant Funding Agreement. How the consortium manages the commitments that the lead organisation makes on its behalf is the responsibility of the consortium. The agreement between the hydrogen supplier and the lead IHA applicant is therefore between those parties. There is no obligation for all parties participating in Stream 2A to participate in Stream 2B, however please see question 70 for more information.

88. Would a long-term electrolyser testing facility be eligible for the IHA programme? Would we need industrial offtakers confirmed?

IHA projects must include hydrogen generation, hydrogen delivery infrastructure and industrial end-use in a robust chain as a single project. For the purposes of this competition, a robust chain means a full system configuration that could reasonably be used long term on a commercial basis; projects must justify this in their application. The hydrogen generation and end-use do not need to be co-located on the same site, although a greater distance may lead to more complex arrangements. The IHA end-to-end trial period is indicatively expected to be around 2 months, although longer trial periods are welcome. The hydrogen generation technology would need to meet the eligibility requirements laid out in section 2.2 of the IHA competition guidance. Yes, industrial end-user(s) would need to be confirmed at the point of applications to Stream 1 or 2B demonstrations.

This publication is available from: https://www.gov.uk/government/publications/industrial-hydrogen-accelerator-programme

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