Department of Energy & Climate Change

Nuclear Research and Development: Advanced fuel recycle technologies

Call For Proposals

December 2014

URN **14D/453**

Any enquiries regarding this publication should be sent to us at innovation@decc,gsi.gov.uk;

Contents

Introduction 4-5
Materials Testing Laboratory 6-9
Process chemistry beta/gamma active laboratory 10-13
Pyrochemical reprocessing laboratory 14-17
Annex A – Detailed Evaluation Criteria 18-19
Annex B - Template for Responses 20-21
Annex C – Questions for tenderers 22-23

1. Introduction

The Department of Energy and Climate Change (DECC) is responsible for all aspects of UK energy policy, and for tackling global climate change on behalf of the UK.

UK Government is working together with industry and academia to implement the Nuclear Industrial Strategy (NIS). The Strategy sets out the Government's clear expectation that nuclear energy will play a significant role in the UK energy mix in the future, recognising that investment in R&D infrastructure is necessary in a number of areas to provide state-of-the-art facilities that will underpin our skills and knowledge base. The Nuclear Innovation and Research Advisory Board (NIRAB) has provided advice to Government on priority R&D programmes that need to be put in place in order to meet the high level objectives set out in the NIS and in order to deliver an integrated, overarching Nuclear Innovation Programme for the UK.

Advanced nuclear fuel recycling and waste management is an important development area within the Nuclear Innovation Programme. Spent fuel recycling would be an integral component of any scenario in which fast reactors using closed fuel cycles are deployed, and could also be a tool to minimise the burden of geological disposal. In order to deploy such a fuel cycle, there is a requirement to develop safe, proliferation resistant recycling technologies that can be operated economically, with reduced environmental impact, near zero emissions, processing high burn-up LWR and (in some cases) fast reactor fuels. A step change in technology from that used today is required for economically viable deployment in the mid-21st century.

A spent fuel recycle research programme has been proposed by NIRAB with the objective of establishing recycle and waste management processes that meet the above requirements. The early focus of the programme is the development of processes for advanced aqueous and pyrochemical recycling of spent fuel from future nuclear reactor technologies and fuels that could be deployed in the UK, and the management of wastes generated by those processes.

The programme has the following medium term objectives:

- To demonstrate, within 5 years, a safe, economic, efficient and proliferation resistant aqueous LWR fuel recycle technology at lab scale using active surrogate feeds and unirradiated fuel;
- To demonstrate, within 10 years, a safe, economic, efficient and proliferation resistant aqueous LWR fuel recycle technology using spent fuel solution in hot cells;
- To demonstrate, within 5 years, components of a fast reactor fuel pyroprocessing recycle technology, leading to hot cell testing in 10 years time;
- To develop effective waste immobilisation technologies for the wasteforms generated by advanced recycling technologies and any associated effluent treatment facilities.

To underpin delivery of this Programme an integrated network of facilities is required to enable world class research into advanced nuclear fuel recycling and waste management, providing information needed to inform energy policy decisions. The proposed network consists of six laboratories, covering molecular level studies to full process scale-up and inactive simulant to post-irradiation examination work:

1. **A materials chemistry laboratory** for the development of appropriate wasteforms for advanced recycle processes, particularly pyrochemical technologies;

2. **A process chemistry beta/gamma active laboratory** for provision of kinetic and thermodynamic data necessary for flowsheet design and implementation in both uranium and thorium fuel cycles;

3. **A pyrochemical reprocessing laboratory**, focussed on non-active studies of integrated pyrochemical fuel reprocessing systems using fuel-relevant simulants;

4. **A small scale alpha active lab** for fundamental, molecular studies of alpha emitters in both hydrometallurgical and pyrochemical processes;

5. **A uranium active engineering laboratory** for pilot scale studies;

6. **An alpha active lab** capable of handling higher inventories of Plutonium and higher activities than the existing PUMA lab at NNL.

Development of this network of laboratories will require financial support from a number of sources. DECC is currently looking to support the development of the first three laboratories listed in the above summary and is therefore interested in proposals that will address the delivery of the following three facilities by March 2016.

2. Materials Testing Laboratory

2.1 Introduction

DECC is considering offering a grant to establish a materials chemistry laboratory for the development and prototyping of processes and technologies for treating wastes generated by potential advanced fuel recycle processes, with the ability to work with Uranium, Thorium, alpha- and tracer beta/gamma active materials.

2.2 Required outcomes of competition

DECC require the following outcomes:

1. Established materials chemistry laboratory which meets the capability requirements detailed in section 2.3 by March 2016;
2. Launch event for stakeholders;
3. Final publishable report detailing:
    a. Fully detailed specification of the laboratory;
    b. Exploitation plan detailing how the facility will be operated and used and made available to stakeholders external to the contractor, including a cost operating model.

2.3 Capability requirements

The laboratory must be capable of developing pyrochemical technologies, and to be able to work with Uranium, Thorium, alpha- and tracer beta/gamma active materials. The focus should be on application of high throughput techniques, and facilitating collaboration across Technology Readiness Level (TRL) scales, to accelerate innovation and optimisation of processes and materials for future waste management strategies.

At present there is no internationally accepted waste management strategy to support delivery of pyrochemical recycle technology. The materials chemistry laboratory should focus initially on the key technical and engineering challenge in this domain: the innovation of processes to efficiently and effectively decontaminate the molten salt medium, allowing reuse, whilst simultaneously capturing and consolidating the high activity waste inventory in a stable and disposable solid matrix. Solving this critical R&D challenge will enable closure of the fuel cycle, by enabling pyrochemical recycle of fast reactor fuels.

2.4 Terms of competition

DECC is considering offering a grant of up to £800K to a suitable organisation to establish a materials chemistry laboratory that will enable the UK to carry out world leading research into the development and prototyping of processes for the treatment of wastes generated by a range of potential advanced fuel recycle technologies.

It is important that any grant funding complies with EU state aid rules. These rules apply where applicants are operating as an undertaking by providing goods or services to a market. If the grant constitutes a state aid, the grant can only be awarded if the grant falls within one of the narrow exemptions permitted under EU state aid rules and we propose to award such a grant

as aid for industrial research under 25 (aid for research and development projects) of the EU General Block Exemption ("GBER")[1].

Therefore before any application can be accepted or any offer made, the applicant must satisfy DECC as to either one of the following:

a) The applicant is not an undertaking

The position of the European Commission is set out in section 2.1 (Research and knowledge dissemination organisations and research infrastructures as recipients of State aid) of the Commission's RD&I Framework[2], which can be found here.

Accordingly, if the grant is awarded on a non-aid basis you must satisfy DECC that:

i. the funding is being used for a *non-economic activity* in accordance with paragraph 19 of that section; and

ii. either the applicant does not pursue any other activities being economic activities or that if the applicant does pursue economic activities that the non-economic activities funded by the grant will not cross-subsidise those economic activities

b) The applicant meets the requirements of GBER

If the applicant considers themselves an undertaking DECC will award a grant under GBER. In order to be awarded a grant, the applicant must:

i. Specify the category of research project for which the grant is sought (i.e. *fundamental research*, *industrial research*, *experimental development* or a *feasibility study*; these terms are defined in Article 2 of GBER);

ii. specify the costs that the grant will be used to fund, and satisfy DECC that these fall within the categories of eligible cost under Article 25.3 or Article 25.4;

iii. satisfy DECC that the grant does not exceed the aid intensity limits (i.e. the proportion of the eligible costs funded by state aid) under Articles 24.5 to 24.7; please note that these limits will include any other public funding awarded;

iv. satisfy DECC that the applicant is eligible for an award under the EU Block Exemption; in particular, the grant cannot be awarded if the applicant is subject to

[1] Commission Regulation (EU) No. 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (OJ L 187, 26.06.14, p.1).

[2] Framework for State aid for research and development and innovation (OJ C 198, 27.06.14. pg. 1).

an outstanding recovery order following a previous Commission decision declaring a state aid illegal or if the applicant is an undertaking in difficulty (see Article 1).

For state aid and other reasons, the applicant must **declare any other public funding** (i.e. funding provided by or on behalf of any other UK public authority or European institution) that they have been awarded (or are applying for) in relation to the project or relevant costs.

Please note that failure to comply with the requirements of EU law relating to state aid may mean that the grant will be withdrawn or (if paid) be repayable (with interest).

The successful applicant will be expected to carry out a requirements capture exercise with relevant stakeholders, including the NIRAB community to ensure that the facility will support the objectives of the Nuclear Industrial Strategy.

The facility will be incorporated into the national infrastructure for nuclear R&D and must be 'open access', enabling and encouraging researchers from outside of the host organisation to conduct research as appropriate. The successful vendor will be expected to engage fully with potential end users and operators of other facilities which, collectively, form a national network, including attendance at relevant National Nuclear User Facility (NNUF) meetings and NIRAB sub-groups.

Applicants should be in a position to complete the delivery of all aspects of any grant by the end of March 2016.

Funding is only available for capital items, and not research and development costs.

2.5 Format and Deadline

Reponses should be made using the template at Annex B, and including the declarations at Annex C by midday on 30/01/2015. Please use Arial 11 font.

Responses should be submitted to the following email address with the subject heading 'Nuclear Research and Development: materials chemistry laboratory competition':

innovation@decc.gsi.gov.uk

2.6 Evaluation Criteria

DECC will evaluate eligible bids in accordance with the evaluation criteria set out at Annex A. Please note that DECC will treat as ineligible, and exclude, any bids which do not comply with:

a) the requirements set out in this Call for Proposals;

b) the requirements of EU law relating to state aid (see above).

DECC may also treat as ineligible, and exclude, any bid on the grounds in regulation 23 of the Public Contracts Regulations 2006.

2.7 Further Details

Any specific queries related to this call can be emailed to:

innovation@decc.gsi.gov.uk

with the heading ‘Nuclear Research and Development: materials chemistry laboratory competition’

This request for proposals does not commit DECC to proceeding with awarding the grant. DECC reserves the right not to award any grants, in particular if DECC is not satisfied by the proposals received or if the funding assigned to the scheme is required for other, unforeseen, purposes. DECC will not, under any circumstances, make any contribution to the costs of preparing proposals and applicants accept the risk that they may not be awarded a grant. **Please note that any grant award will be subject to the applicant’s agreement to, and compliance with, the terms and conditions that DECC will set out in a grant offer letter.**

3. Process chemistry beta/gamma active laboratory

3.1 Introduction

DECC is considering offering a grant to establish a process chemistry laboratory that that allows for work on beta/gamma active fission products to underpin both fundamental and application driven research (including scale up) in recycle and waste management. The laboratory must be capable of supporting research on uranium and thorium based fuel cycles, hydrometallurgical processing and the interface with pyrochemical reprocessing routes.

3.2 Required outcomes of competition

DECC require the following outcomes:

1. Established materials chemistry laboratory which meets the capability requirements detailed in section 3.3 by March 2016;
2. Launch event for stakeholders;
3. Final publishable report detailing:
    a. Fully detailed specification of the laboratory;
    b. Exploitation plan detailing how the facility will be operated and used by stakeholders external to the contractor, including a cost operating model.

3.3 Capability requirements

The laboratory must be capable of using beta/gamma active fission products (including caesium-137, strontium-90, technetium-99, d-block metals and lanthanides), uranium, thorium and low level alpha tracers, to underpin both fundamental and application driven research.

The facility should enable research to address key knowledge gaps related to advanced PUREX flowsheets for higher burn-up LWR fuel and thermal MOX fuel recycle, and new GANEX-based flowsheets for fast reactor fuel reprocessing. These knowledge gaps include, but are not restricted to, metal/(new) ligand complex speciation and redox thermodynamics, partitioning, interfacial transfer kinetics, new extractant / complexant stability under process conditions and interaction with plant materials (including steels). In terms of achieving fuel cycle closure, these are knowledge gaps that must be closed both for bench-to-pilot scale-up (in the case of GANEX for fast reactor recycle) and safety case compilation for full process (Advanced PUREX for future LWR recycle). The instrumentation and equipment within the process chemistry laboratory should enable research that addresses these gaps under conditions, both chemical and radiolytic, representative of those encountered on plant.

3.4 Terms of competition

DECC is considering offering a grant of up to £800K to a suitable organisation to establish a process chemistry laboratory that will enable the UK to carry out world-leading research on spent fuel recycle technologies

It is important that any grant funding complies with EU state aid rules. These rules apply where applicants are operating as an undertaking by providing goods or services to a market. If the grant constitutes a state aid, the grant can only be awarded if the grant falls within one of the narrow exemptions permitted under EU state aid rules and we propose to award such a grant

as aid for industrial research under 25 (aid for research and development projects) of the EU General Block Exemption ("GBER")[3].

Therefore before any application can be accepted or any offer made, the applicant must satisfy DECC as to either one of the following:

a) The applicant is not an undertaking

The position of the European Commission is set out in section 2.1 (Research and knowledge dissemination organisations and research infrastructures as recipients of State aid) of the Commission's RD&I Framework[4], which can be found here.

Accordingly, if the grant is awarded on a non-aid basis you must satisfy DECC that:

i. the funding is being used for a *non-economic activity* in accordance with paragraph 19 of that section; and

ii. either the applicant does not pursue any other activities being economic activities or that if the applicant does pursue economic activities that the non-economic activities funded by the grant will not cross-subsidise those economic activities

b) The applicant meets the requirements of GBER

If the applicant considers themselves an undertaking DECC will award a grant under GBER. In order to be awarded a grant, the applicant must:

i. Specify the category of research project for which the grant is sought (i.e. *fundamental research*, *industrial research*, *experimental development* or a *feasibility study*; these terms are defined in Article 2 of GBER);

ii. specify the costs that the grant will be used to fund, and satisfy DECC that these fall within the categories of eligible cost under Article 25.3 or Article 25.4;

iii. satisfy DECC that the grant does not exceed the aid intensity limits (i.e. the proportion of the eligible costs funded by state aid) under Articles 24.5 to 24.7; please note that these limits will include any other public funding awarded;

[3] Commission Regulation (EU) No. 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (OJ L 187, 26.06.14, p.1).

[4] Framework for State aid for research and development and innovation (OJ C 198, 27.06.14. pg. 1).

iv. satisfy DECC that the applicant is eligible for an award under the EU Block Exemption; in particular, the grant cannot be awarded if the applicant is subject to an outstanding recovery order following a previous Commission decision declaring a state aid illegal or if the applicant is an undertaking in difficulty (see Article 1).

For state aid and other reasons, the applicant must **declare any other public funding** (i.e. funding provided by or on behalf of any other UK public authority or European institution) that they have been awarded (or are applying for) in relation to the project or relevant costs.

Please note that failure to comply with the requirements of EU law relating to state aid may mean that the grant will be withdrawn or (if paid) be repayable (with interest).

The successful applicant will be expected to carry out a requirements capture exercise with relevant stakeholders, including the NIRAB community to ensure that the facility will support the objectives of the Nuclear Industrial Strategy.

The facility will be incorporated into the national infrastructure for nuclear R&D and must be 'open access', enabling and encouraging researchers from outside of the host organisation to conduct research as appropriate. The successful vendor will be expected to engage fully with potential end users and operators of other facilities which, collectively, form a national network, including attendance at relevant National Nuclear User Facility (NNUF) meetings and NIRAB sub-groups.

Applicants should be in a position to complete the delivery of all aspects of any grant by the end of March 2016.

Funding is only available for capital items, and not research and development costs.

3.5 Format and Deadline

Reponses should be made using the template at Annex B, and including the declarations at Annex C by midday on 30/01/2015. Please use Arial 11 font.

Responses should be submitted to the following email address with the subject heading 'Nuclear Research and Development: Process chemistry laboratory competition'

innovation@decc.gsi.gov.uk

3.6 Evaluation Criteria

DECC will evaluate eligible bids in accordance with the evaluation criteria set out at annex A. Please note that DECC will treat as ineligible, and exclude, any bids which do not comply with:

a) the requirements set out in this Call for Proposals;

b) the requirements of EU law relating to state aid (see above).

DECC may also treat as ineligible, and exclude, any bid on the grounds in regulation 23 of the Public Contracts Regulations 2006.

3.7 Further Details

Any specific queries related to this call can be emailed to:

innovation@decc.gsi.gov.uk

with the subject heading 'Nuclear Research and Development: Process chemistry laboratory competition'.

This request for proposals does not commit DECC to proceeding with awarding the grant. DECC reserves the right not to award any grants, in particular if DECC is not satisfied by the proposals received or if the funding assigned to the scheme is required for other, unforeseen, purposes. DECC will not, under any circumstances, make any contribution to the costs of preparing proposals and applicants accept the risk that they may not be awarded a grant. **Please note that any grant award will be subject to the applicant's agreement to, and compliance with, the terms and conditions that DECC will set out in a grant offer letter.**

4. Pyrochemical reprocessing laboratory

4.1 Introduction

DECC is considering offering a grant to establish a pyrochemical reprocessing laboratory to develop and demonstrate integrated pyrochemical reprocessing of nuclear fuel using fuel-relevant compositional mixtures, and to develop the required process monitoring, at laboratory scale.

4.2 Required outcomes of competition

DECC require the following outcomes:

- Establishment of a pyrochemical reprocessing laboratory which meets the specification requirements detailed in section 4.3 by March 2016;
- Launch event for stakeholders;
- Final publishable report detailing:
    - Fully detailed specification of the laboratory;
    - Exploitation plan detailing how the facility will be operated and used and made available to stakeholders external to the contractor, including a cost operating model.

4.3 Capability requirements

The laboratory is expected to consist of a suite of interconnected integrated controlled-atmosphere dry-boxes, equipped with the necessary furnaces and cell systems required for pyrochemical measurement of each of the essential elements of the process at the laboratory scale. There should be internal connectivity between these elements to enable the integrated process development required to establish and demonstrate the complete fuel recycle process.

Electrochemical and spectroscopic characterisation equipment will be needed for fundamental characterisation, and to further develop the process monitoring and characterisation methods developed in REFINE and EU programmes.

4.4 Terms of competition

DECC is considering offering a grant of up to £900K to a suitable organisation for design and construction of a pyrochemical reprocessing laboratory that will enable the development and demonstration of integrated pyrochemical reprocessing of nuclear fuel using fuel-relevant compositional mixtures, and enable the development of the required process monitoring, at laboratory scale.

It is important that any grant funding complies with EU state aid rules. These rules apply where applicants are operating as an undertaking by providing goods or services to a market. If the grant constitutes a state aid, the grant can only be awarded if the grant falls within one of the narrow exemptions permitted under EU state aid rules and we propose to award such a grant as aid for industrial research under 25 (aid for research and development projects) of the EU General Block Exemption ("GBER")[5].

[5] Commission Regulation (EU) No. 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (OJ L 187, 26.06.14, p.1).

Therefore before any application can be accepted or any offer made, the applicant must satisfy DECC as to either one of the following:

a) The applicant is not an undertaking

The position of the European Commission is set out in section 2.1 (Research and knowledge dissemination organisations and research infrastructures as recipients of State aid) of the Commission's RD&I Framework[6], which can be found here.

Accordingly, if the grant is awarded on a non-aid basis you must satisfy DECC that:

i. the funding is being used for a *non-economic activity* in accordance with paragraph 19 of that section; and

ii. either the applicant does not pursue any other activities being economic activities or that if the applicant does pursue economic activities that the non-economic activities funded by the grant will not cross-subsidise those economic activities

b) The applicant meets the requirements of GBER

If the applicant considers themselves an undertaking DECC will award a grant under GBER. In order to be awarded a grant, the applicant must:

i. Specify the category of research project for which the grant is sought (i.e. *fundamental research*, *industrial research*, *experimental development* or a *feasibility study*; these terms are defined in Article 2 of GBER);

ii. specify the costs that the grant will be used to fund, and satisfy DECC that these fall within the categories of eligible cost under Article 25.3 or Article 25.4;

iii. satisfy DECC that the grant does not exceed the aid intensity limits (i.e. the proportion of the eligible costs funded by state aid) under Articles 24.5 to 24.7; please note that these limits will include any other public funding awarded;

[6] Frameowrk for State aid for research and development and innovation (OJ C 198, 27.06.14. pg. 1).

iv. satisfy DECC that the applicant is eligible for an award under the EU Block Exemption; in particular, the grant cannot be awarded if the applicant is subject to an outstanding recovery order following a previous Commission decision declaring a state aid illegal or if the applicant is an undertaking in difficulty (see Article 1).

For state aid and other reasons, the applicant must **declare any other public funding** (i.e. funding provided by or on behalf of any other UK public authority or European institution) that they have been awarded (or are applying for) in relation to the project or relevant costs.

Please note that failure to comply with the requirements of EU law relating to state aid may mean that the grant will be withdrawn or (if paid) be repayable (with interest).

The successful applicant will be expected to carry out a requirements capture exercise with relevant stakeholders, including the NIRAB community to ensure that the facility will support the objectives of the Nuclear Industrial Strategy.

The facility will be incorporated into the national infrastructure for nuclear R&D and must be 'open access', enabling and encouraging researchers from outside of the host organisation to conduct research as appropriate. The successful vendor will be expected to engage fully with potential end users and operators of other facilities which, collectively, form a national network, including attendance at relevant National Nuclear User Facility (NNUF) meetings and NIRAB sub-groups.

Applicants should be in a position to complete the delivery of all aspects of any grant by the end of March 2016.

Funding is only available for capital items, and not research and development costs.

4.5 Format and Deadline

Reponses should be made using the template at Annex B, and including the declarations at Annex C by midday on 30/01/2015. Please use Arial 11 font.

Responses should be submitted to the following email address with the subject heading 'Nuclear Research and Development: Pyrochemical reprocessing laboratory competition':

innovation@decc.gsi.gov.uk

4.6 Evaluation Criteria

DECC will evaluate eligible bids in accordance with the evaluation criteria set out at annex A. Please note that DECC will treat as ineligible, and exclude, any bids which do not comply with:

a) the requirements set out in this Call for Proposals;

b) the requirements of EU law relating to state aid (see above).

DECC may also treat as ineligible, and exclude, any bid on the grounds in regulation 23 of the Public Contracts Regulations 2006.

4.7 Further Details

Any specific queries related to this call can be emailed to:

innovation@decc.gsi.gov.uk

with the subject heading 'Nuclear Research and Development: Pyrochemical reprocessing laboratory competition'.

This request for proposals does not commit DECC to proceeding with awarding the grant. DECC reserves the right not to award any grants, in particular if DECC is not satisfied by the proposals received or if the funding assigned to the scheme is required for other, unforeseen, purposes. DECC will not, under any circumstances, make any contribution to the costs of preparing proposals and applicants accept the risk that they may not be awarded a grant. **Please note that any grant award will be subject to the applicant's agreement to, and compliance with, the terms and conditions that DECC will set out in a grant offer letter.**

Annex A – Detailed Evaluation Criteria

Bids will be assessed based on the following criteria:

1. **Cost:** Applicants should set out the cost for the facility proposed, including a breakdown of costs for labour, materials, travel & subsistence, other costs, and VAT where applicable. Include an invoicing profile detailing dates, values and associated deliverables.

2. **Technical Specification:** Applicants must set out how their bid meets the 'required outcomes' specified in either section 2.2, 3.2 or 4.2 and 'capability requirements' specified in either section 2.3, 3.3 or 4.3, dependant on which specific requirement they are bidding for. Details should be given of:
    a. The facility's operating capability, such as range of activity levels and maximum temperatures;
    b. The equipment to be installed including detailed specifications and how this will address the R&D requirements and objectives of the Spent Fuel Recycle Research Programme outlined in section 1 and the overarching Nuclear Industrial Strategy;
    c. The facility's size, scale and measurement/analysis capability;
    d. Potential wasteform materials that could be tested in the facility;
    e. An estimate of the potential capacity for the throughput of research programmes.

    Applicants should confirm whether appropriate licencing arrangements are in place and should highlight the benefits of the proposed siting of the laboratory including any supporting facilities and infrastructure and availability of space. They should also clearly indicate any existing arrangements that cover Health, Safety, Environment and Quality assurance.

3. **Skills, Experience and Expertise:** Applicants should set out the expertise and skills of the organisation and staff, to cover:
    a. Capabilities and track record in research and development activities relevant to the programme of work;
    b. Development of the facility to time, cost and quality;
    c. Operational management of the facility after commissioning.

4. **Delivery Plan:** Applicants must show how they intend to deliver the facility by March 2016. Please include:
    a. A procurement plan;
    b. A commissioning plan;
    c. Key performance indicators and milestones;
    d. Risk management plan, detailing key risks and mitigating actions;
    e. Plans for ensuring appropriate Health, Safety, Environment and Quality requirements are in place where they do not already exist.

5. **Exploitation:** Applicants should set out how they intend to utilise and operate the facility including:
    a. Details of research projects that they, or other stakeholders, are already undertaking or planning to undertake that will utilise this facility, and outlining how these will support the objectives of a Spent Fuel Recycle Research Programme outlined in section 1 and the overarching Nuclear Industrial Strategy;

b. Sources of funding to enable R&D related to this facility, including international collaboration opportunities where possible;
c. Estimated annual operating and maintenance costs for the facility, and how these will be funded post March 2016;
d. How they will manage use of the facility by other UK research organisations, ensuring ‘open access’ and identifying other potential users already engaged in the project
e. How this facility will interact with the wider network of laboratories, from both a management and technical perspective and how they will engage fully with potential end users and operators of other facilities which, collectively, form a national network, including attendance at relevant National Nuclear User Facility (NNUF) meetings and NIRAB sub-groups.
f. Public engagement strategy for the facility, including plans for communications that will ensure other stakeholders are aware of the opportunity presented by the facility, and research councils / funding agencies take it into account when future R&D in this area is commissioned.

Annex B - Template for Responses (30 page limit)

Applicants are required to complete one Annex B per requirement.

Name		
Contact Details	E:	T:
Organisation		
Name of requirement	• E.g. 'Materials chemistry laboratory'.	
Proposal Summary	• Briefly set out how your bid intends to meet the requirements of the call.	
EU State aid	• Provide us with the information required under sections 2.4, 3.4 and 4.4 to demonstrate either that you: a) are not an undertaking; or b) comply with the EU Block Exemption [(specifying the category of R&D in respect of which you apply for the grant)].	
Other public funding	• Provide us with information about any other public funding awarded for the project (including the identity of the relevant public body awarding the funding and amount of the funding). • OR confirm that you are receiving no other public funding.	
Technical Specification (35%)	(refer to Annex A for guidance)	
Skills, Experience and Expertise (20%)	(refer to Annex A for guidance)	
Delivery Plan (20%)	(refer to Annex A for guidance)	

Cost (10%)	(refer to Annex A for guidance)
Exploitation (15%)	(refer to Annex A for guidance)

Annex C – Questions for tenderers

Applicants are required to complete one Annex C per requirement.

In some circumstances the Department may exclude you from participating further in a tender process. If you cannot answer 'no' to every question in this section it is very unlikely that your application will be accepted, and you should contact us for advice before completing this form.

Please state 'Yes' or 'No' to each question.

Has your organisation or any directors or partner or any other person who has powers of representation, decision or control been convicted of any of the following offences?	**Answer**
(a) conspiracy within the meaning of section 1 or 1A of the Criminal Law Act 1977 or article 9 or 9A of the Criminal Attempts and Conspiracy (Northern Ireland) Order 1983 where that conspiracy relates to participation in a criminal organisation as defined in Article 2 of Council Framework Decision 2008/841/JHA;	
(b) corruption within the meaning of section 1(2) of the Public Bodies Corrupt Practices Act 1889 or section 1 of the Prevention of Corruption Act 1906; where the offence relates to active corruption;	
(c) the offence of bribery, where the offence relates to active corruption;	
(d) bribery within the meaning of section 1 or 6 of the Bribery Act 2010;	
(e) fraud, where the offence relates to fraud affecting the European Communities' financial interests as defined by Article 1 of the Convention on the protection of the financial interests of the European Communities, within the meaning of:	
(i) the offence of cheating the Revenue;	
(ii) the offence of conspiracy to defraud;	
(iii) fraud or theft within the meaning of the Theft Act 1968, the Theft Act (Northern Ireland) 1969, the Theft Act 1978 or the Theft (Northern Ireland) Order 1978;	
(iv) fraudulent trading within the meaning of section 458 of the Companies Act 1985, article 451 of the Companies (Northern Ireland) Order 1986 or section 993 of the Companies Act 2006;	
(v) fraudulent evasion within the meaning of section 170 of the Customs and Excise Management Act 1979 or section 72 of	

the Value Added Tax Act 1994;	
(vi) an offence in connection with taxation in the European Union within the meaning of section 71 of the Criminal Justice Act 1993;	
(vii) destroying, defacing or concealing of documents or procuring the execution of a valuable security within the meaning of section 20 of the Theft Act 1968 or section 19 of the Theft Act (Northern Ireland) 1969;	
(viii) fraud within the meaning of section 2, 3 or 4 of the Fraud Act 2006; or	
(ix) making, adapting, supplying or offering to supply articles for use in frauds within the meaning of section 7 of the Fraud Act 2006;	
(f) money laundering within the meaning of section 340(11) of the Proceeds of Crime Act 2002;	
(g) an offence in connection with the proceeds of criminal conduct within the meaning of section 93A, 93B or 93C of the Criminal Justice Act 1988 or article 45, 46 or 47 of the Proceeds of Crime (Northern Ireland) Order 1996; or	
(h) an offence in connection with the proceeds of drug trafficking within the meaning of section 49, 50 or 51 of the Drug Trafficking Act 1994; or	
(i) any other offence within the meaning of Article 45(1) of Directive 2004/18/EC as defined by the national law of any relevant State.	

Department of Energy & Climate Change
3 Whitehall Place
London SW1A 2AW
www.gov.uk/decc
URN 14D/453