**NNLC543 Procurement of consultancy services in support of technology development of heat exchanger design**

**Request for Information (RFI)**

This exercise is a request for information as part of a pre-tender market consultation, it does not constitute a formal procurement process. The purpose of this exercise is to assess the capabilities within current markets to delivery this service. National Nuclear Laboratory (NNL) may choose to contact suppliers because of completing this questionnaire, if you wish for us not to contact you please make this clear on your questionnaire response.

We are not requesting formal quotations at this stage, although some questions request examples of previous contracts. This is to understand the indicative cost of any future procurement, but respondents will not be held to these values.

**Introduction**

National Nuclear Laboratory (NNL) is currently leading a project in Phase B of the Advanced Modular Reactor design competition. As part of this project we are beginning to develop a digital twin of the thermal system of the combined nuclear reactor, nuclear power plant (electrical generation) and hydrogen production plant (hydrogen generation). The digital twin will be developed in parallel to the reactor system design. Further components, such as energy storage systems, safety systems etc will be added to the digital twin as the whole system design progresses.

A digital twin represents a live coupling of the physical reality to a digital representation. In the current phase of this project the live component will be a representation of end user demand as no physical reactor demonstrator will be ready for several years. The digital twin will however help with the progress of the design, by demonstrating the required performance characteristics of key components, specifically the heat exchanger manifold that will distribute heat from the reactor to the generator or hydrogen production facility. Ultimately, we intend to use the digital twin in support of the substantiation of the business case for future phases of the AMR development programme.

In order to develop this digital twin, NNL needs to understand how the heat exchanger (system) manifold could respond to the energy dynamics of the system. NNL requires consultancy support to help develop the dynamic model of the heat exchanger manifold.

The current draft of the Scope is included below:



Please complete the following Questionnaire and return to [david.brown@uknnl.com](mailto:david.brown@uknnl.com) by **5pm 19th January 2024.** Return of this questionnaire will confirm your expression of interest to this opportunity.

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| **Contact Information** | | | |
| Company Name |  | | |
| Address |  | Postcode |  |
| Name of person completing this form |  | | |
| Contact Details |  | | |
| Email Address |  | | |
| Phone Number |  | | |

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| --- | --- | --- |
|  | **Relevant Experience** | |
| Have you worked with the Nuclear Industry before? |  | |
| Have you worked with the National Nuclear Laboratory before? |  | |
| Please detail up to three contracts where you have previously provided a similar service.  You should highlight who the contracting body is/was, the work carried out and the scope of work required. | Contract 1: |  |
| Contract 2: |  |
| Contract 3: |  |
| Please can you describe your company’s area of expertise. |  | |
| Is your company prepared to provide a (Rough Order of Magnitude) ROM cost to support with the project approval stage? | Yes/No | |
| If yes to the above, please provide the ROM cost (inclusive of breakdown and hourly rate) here. |  | |

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| **Procurement** | | |
| Are you on any frameworks operated nationally by Framework providers, for example:  CCS – Crown Commercial Service,  NHS SBS - NHS Shared Business Services  LUPC – London Universities Purchasing Consortium  Yorkshire Purchasing Organisation - YPO,  Eastern Shires Purchasing Organisation – ESPO  Dynamic Purchasing System (DPS) - NNL |  | |
| If yes, please provide the following information in relation to the framework. | Framework Provider |  |
| Framework Reference |  |
| If Lots, list all applicable |  |
| Do you have any internal or external pressures facing your business which would prevent you from tendering for this opportunity, should it become available after February 2024? |  | |

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| **Additional Comments** | |
| If you DO NOT wish to be contacted by NNL please write so here. Otherwise, you may provide any further information you think may be of use during this early market engagement exercise. |  |

**Please return this questionnaire to** [**david.brown@uknnl.com**](mailto:david.brown@uknnl.com) **before 17:00 on**

**Friday 19th January 2024.**