Questions & Answers from Supplier Briefing

Technology Demonstration Projects Utilising Very High Temperature Heat Pumps

GETS ID/RFX#: 30487515

1. **Is there a minimum or max size of HP?**

Maximum 5MW thermal capacity; ~100KW minimum size likely for very high temperature heat pumps. If your project exceeds 5MW, EECA encourages you to reach out separately to explore alternative options.

2. **What sort of suppliers are providing this technology in New Zealand**

We are not aware of any suppliers in New Zealand currently due to this being relatively new technology. There are European and Japanese manufacturers and some New Zealand suppliers who have had discussions with manufacturers overseas.

3. **What's the Return on Investment requirements for the EECA co-funding?**

We are looking for good value for public money.

4. **What level of certainty does the capital and operational cost estimate have to be?**

Initial high level cost estimations (+/- 30%) will be acceptable at the application stage if detailed costing is not available.

Please include details on any assumptions and parameters used. We recognise that costs will be refined as the projects further develop through detailed feasibility and technical design stage.

5. **I am a design and build contractor implementing hot water heat pumps on various sites. Is there a panel of contractors that we can apply to be on?**

No, we haven't established a supplier panel as this technology is new to New Zealand with overseas based manufacturers.

6. **There may be a delay in getting a project identified to suit the programme, how long can you extend the RFP period, since to go now we already need to have a concept study underway?**

The RFP can be extended at EECA's discretion. The RFP is closing 12 December, and any changes will be communicated through GETS.

If you have any questions regarding individual pieces of work you can raise these through the GETS question and answer function.

7. **What is the max temp that others are getting out of heat pumps in Europe?**

There have been demonstration installations up to 160oC and more recently commercially available units are 120-140oC, up to 160oC. Our criteria requires commercially available technology.

8. **Is the only requirement for steam that it is over 100C. I presume there is no limit in maximum temperature or any requirements on pressure?**

No, but the technology must be a suitable solution to meet operational needs and commercially available. Heat pumps capable of supplying steam or pressurised hot water above 100°C will be considered.

9. **How can we have the access to the format of EOI?**

The RFP includes a response form in word format which can be used to tender a response. The RFP document does not require formatting.

10. **Could we apply for a fund for a development of this technology that is taking in place in Germany?**

No, this would not be within our scope.

11. **What is the upper maximum temperature that is available currently, could they achieve 300 degrees Celsius with the current technology?**

It is possible but likely not commercially available yet or a very large (eg., 10MW) unit.

12. **Can the application be for a company that is based overseas, or does it have to be a NZ company?**

The application needs to be from an NZBN registered company.

13. **Is the tender strictly for 100 degrees Celsius or beyond or 80 degrees Celsius also satisfies ?**

It is for 100oC and higher. 80oC heat pumps are a proven technology in New Zealand.

Refer to: https://www.eeca.govt.nz/insights/eeca-insights/industrial-heat-pumps-for-process-heat/

14. **What if the project is deemed unsuitable after feasibility/detailed design?**

Milestones will be agreed between EECA & the successful applicants to act as stop/go point (stage gate) during contracting and ensure each stage can be managed. If the project is deemed not feasible following detailed study the project will end at that milestone.

15. **Are there any learnings from GIDI (particularly the projects that were cancelled after GIDID award) that can be applied to this initiative**

We have applied learnings from GIDI into this RFP.

16. **I would like to know from where could we start process? Should we perform a feasibility study first? then come with a proposal within the deadline? Knowing the supplier list would be useful. Could you please provide what is the maximum temperature the heat pump can do?**

As this technology is not in NZ currently, we suggest reviewing the IEA high-temperature heat pumps, task 1 Technologies (Annex 58) report which includes manufacturing information.

Given the RFP timing, if you have not completed any feasibllity studies relating to your project then we would suggest detailing what research has been undertaken on use of heat pump technology for your operational requirements, and what support would be needed for feasbility work and likely timeframes.

17. **To clarify. A business case / concept study is required by 12 Dec, for which there is no co-funding. This programme is for co-funding the detailed design and capital cost of the project?**

We recognise that some projects for this new technology may require further investigation that will not be possible within the RFP timeline. Thus, we will consider co-funding towards both feasibility and an updated business case if needed along with the detailed technical design and capital cost of the project.

This will be capped both in terms of the co-funding available and the maximum funding per total project. The inital business case needs to provide sufficient information to enable the evaluators to assess if will meet the criteria as outlined in the RFP evaluation criteria.

18. **At temperatures exceeding 100°C, do you consider whether the refrigerant is environmentally friendly?**

Yes, we will be including this in our assessment, and expect many suppliers will be using low GWP refrigerants in the heat pumps.

19. **What would be the smallest size HTHP that would likely be funded. Obviously smaller sizes would be a smaller CO2 reduction but potentially a higher ROI**

The HP will need to have enough capacity to product >100oC and thus we expect 100kW and above will be needed to produce these temperatures.

20. **Any funding for the this specific designing / feasibility, which may get in advance ?**

Refer to answer Q21

21. Is there a list of potential projects that EECA have identified that the Clients are happy to be shared with the public domain?

Not for this RFP.

22. Is there any technical specification can share to us for our future design and consideration?

We refer you to international research including the IEA report published on our RFP webpage:

heatpumpingtechnologies.org/annex58/wp-content/uploads/sites/70/2023/09/annex-58-task-1-technologies-task-report.pdf

23. Is there a capping on the number of grants / RFP approvals which EECA will provide under this scheme?

The current maximum budget allocated for the very high temperature heat pumps is $4m for this financial year. The maximum for any one project is $2m.

24. Does the $500,000 cap include detailed design funding?

Any agreed co-funding towards detailed design will be included in the overall total project funding, which will be capped.

The maximum for Technology Demonstration process heat projects is $500,000. For this RFP the max is $2m.

25. Please can you share the slides?

These will be published on our website:

heatpumpingtechnologies.org/annex58/wp-content/uploads/sites/70/2023/09/annex-58-task-1-technologies-task-report.pdf