



Request for Quotation (RFQ) for the provision of mechanical design and construction services to the CSIR

CSIR RFQ: 9080-20-02-2018

Date of issue	Wednesday, 07 February 2018
Compulsory Briefing session and site inspection	Tuesday, 13 February 2018 @ 11:00am to 12:00am
Venue	Building 46F CSIR, Lynnwood Road, Pretoria
Closing Date and Time	Tuesday, 20 February 2018, 16:30
Contact details	tender@csir.co.za , 012 841 2400

1 INVITATION FOR QUOTATION

Quotations are hereby invited for the provision of mechanical design and construction services to the CSIR.

2 QUOTATION REQUIREMENTS

The service provider is required to provide the CSIR with a quotation for the design and installation of a process chilled water (PCW) system for three environmental chambers and a small de-ionized (DI) system for two new environmental test chambers.

Mandatory requirements

Requirement	Comply	Not Comply
<u>ECSA</u> The bidder must be registered with the Engineering Council of South Africa		

2.1 Scope of works and deliverables.

The service provider is required to provide the following mechanical design and construction work with associated civil works. Further details are provided in Annexure A below.

	Description	Amount
1.	Design and installation of a PCW system: Chamber 1 designed for thermal cycling Chamber 2 designed for 85 C / 85% RH soak Chamber 3 future expansion Approx. 25 C inlet temp to chambers	
2.	Design and installation of a DI system: Conductivity between 1 to 10 microSiemens/cm Flow rate 30-40 L/hour per chamber 5 micron filter	
	Sub-Total	
	Vat @ 14%	
	Total	

3 EVALUATION CRITERIA

- 3.1 Selection of suppliers will be based on the 80/20 preference point system.
- 3.2 Indicate valid B-BBEE status on quotation. No B-BBEE status will equal zero points.
- 3.3 Indicate CSD number (National Treasury Central Supplier Database) on quotation. If not registered yet on CSD, use www.csd.gov.za to register. - Please ensure that the tax status on CSD is updated and compliant.
- 3.4 No order will be issued or no contract will be signed without a valid CSD number.
- 3.5 Elimination criteria;

Suppliers will be disqualified under the following conditions:

- Late submission,

- Quotation submitted at wrong location or email address,
- If supplier is not registered with ECSA-please submit valid ECSA certificate
- Non-attendance of compulsory briefing session.

4 PRICING QUOTATION

- 4.1 Price needs to be provided in South African Rand (excl. VAT), with details on price elements that are subject to escalation and exchange rate fluctuations clearly indicated.
- 4.2 Price should include additional cost elements such as freight, insurance until acceptance, duty where applicable, etc.
- 4.3 Payment will be according to the CSIR Payment Terms and Conditions.

5 OTHER TERMS AND CONDITIONS

- 5.1 The supplier shall under no circumstances offer, promise or make any gift, payment, loan, reward, inducement, benefit or other advantage, which may be construed as being made to solicit any favour, to any CSIR employee or its representatives. Such an act shall constitute a material breach of the Agreement and the CSIR shall be entitled to terminate the Agreement forthwith, without prejudice to any of its rights.
- 5.2 A validity period of 90 days will apply to all quotations except where indicated differently on the quote.

6 No goods and/or services should be delivered to the CSIR without an official CSIR Purchase order. CSIR purchase order number must be quoted on the invoice. Invoices without CSIR purchase order numbers will be returned to supplier.

7 Note: This is not a Purchase Order.

Annexure A: Detailed scope of work**PV Module Reliability and Test Lab proposed layout:**

Two new environmental chambers will be installed in Building 46 of the CSIR Pretoria campus for the purpose of stress testing solar PV modules. The chambers are labelled “Ch1” and “Ch2” in the figure below (Figure 1). Each chamber will have an interior dimension of approximately 1.2 m wide x 1.5 m deep x 2.5 meters high. Ch1 is designed to ramp up to 85 C and 85% relative humidity and maintain those conditions for 1000 hours continuously. Ch2 is designed to ramp up and down in temperature between 85 C and -40 C with approximately 300 kg of mass inside under normal test conditions. An additional thermal load will be added to the chamber during the ramp up in the form of electrical energy, approximately 3 kW. The chamber itself will be capable of ramping up and down between 150 C and -70 C, but those conditions will seldom be required. The chamber will run a full cycle in 3 hours or less for up to 200 cycles continuously. The third chamber has not been specified as yet. It will likely be another chamber similar to Ch2 for thermal cycling or a light soaking station with a similar cooling requirement. The location of the DI tanks and the Chiller are shown for illustration, but the final placement would be part of the design proposal. Additional components must be properly located at the lab.

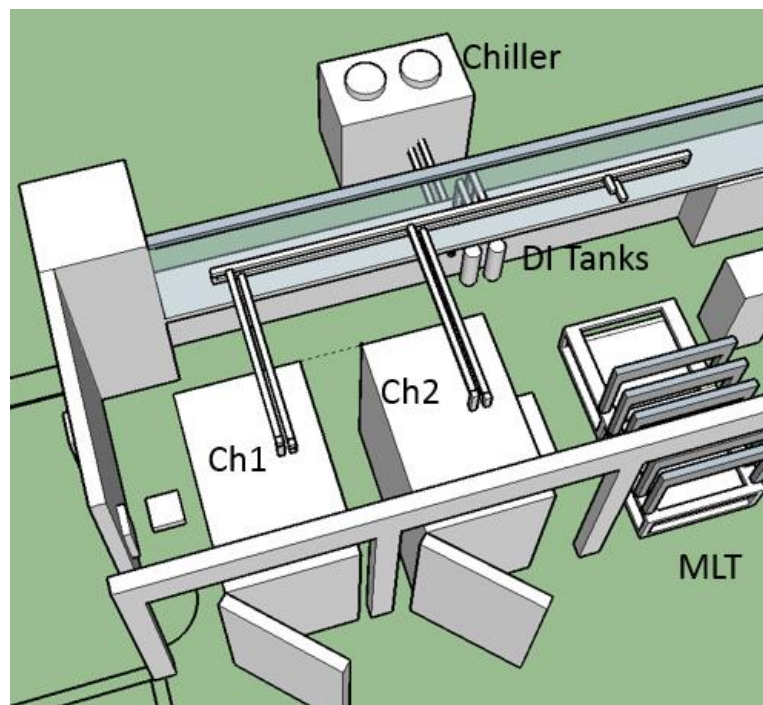


Figure 1. Sample sketch of PCW system in Building 46

Process Chilled Water (PCW) Loop

The PCW system will include all the necessary components to remove the process heat generated by Ch1 and Ch2 with provision for the cooling load of a third chamber. The proposal should include all the necessary components for a complete system. Similar systems might include the following: chiller, pipe, circuit setters, valves, filters, pumps, buffer tank, heat exchanger, clean outs, water treatment tanks, automatic top up valves, etc. The optimal design and layout of the system will be provided in the proposal from the successful bidder. Options for layout and location of the chiller will be clarified at the compulsory site briefing. The price should include the final connection between the PCW loop and Ch1 and Ch2 after the equipment has been installed in Building 46. Connection to the third chamber is not part of the scope of work, but the connection points with shut off valves shall be included. The system should be otherwise fully installed and functional before the equipment is installed so that the final connection can happen immediately.

A one-line diagram of the PCW system shall be included in the proposal. Specifications for the electrical requirements of each major system component shall be included in the proposal. The chiller capacity, inlet temperature, and estimated flow rates for each chamber shall be included in the proposal, as well.

Electrical requirements for all components should also be documented in the proposal. The current plan includes a 45 A service for the chiller and a 30 A service for the pump (400 V, 3-phase, 50 Hz). If additional power is required, changes can be accommodated at this stage.

De-ionization (DI) System

The DI system will supply water to both Ch1 and Ch2 per the specs listed in table above. Piping for the third chamber shall also be included. The system will include the exchangeable tanks, filters, valves and plumbing necessary to generate the humidity inside the chambers. The price should include final connection between the DI system and Ch1 and Ch2 after installation. Electrical infrastructure requirements should also be included in the proposal.

