



Request for Proposals (RFP) for

The provision of services for the design support, manufacture, and testing of a high-pressure, high-speed hydraulic system to the CSIR

RFP No. 3524/14/07/2022

Date of Issue	Monday, 20 June 2022	
Closing Date	Thursday, 14 July 2022 at 16H30	
Place of Submissions	Electronically at tender@csir.co.za Mail size is 25MB, send multiple emails when exceeded	
Enquiries	Strategic Procurement Unit	E-mail: tender@csir.co.za
CSIR business hours	08h00 – 16h30	
Category	Engineering	

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SECTION A – TECHNICAL INFORMATION

1 INTRODUCTION

The Council for Scientific and Industrial Research (CSIR) is one of the leading scientific research and technology development organisations in Africa. In partnership with national and international research and technology institutions, CSIR undertakes directed and multidisciplinary research and technology innovation that contributes to the improvement of the quality of life of South Africans. The CSIR's main site is in Pretoria while it is represented in other provinces of South Africa through regional offices.

2 BACKGROUND

The CSIR has been contracted to design and build a Technology Demonstrator containing a hydraulic system that is capable of accelerating loads with mass of at least 300 kg to speeds up to 56 m/s within 15 m, via a transmission system.

The technology demonstrator will consist of various sub-systems, with the hydraulic system as the core energy supplying element.

The actuation system will use high-pressure accumulators for stored energy with additional gas storage as is necessary. The system will use a double-acting-cylinder to transfer the hydraulic power via a transmission system to the payload. The movement of the piston is controlled by direction, flow, and pressure control valves.

The performance requirements from the preliminary design and requirement specification are:

- Two (2) double-acting hydraulic cylinders with a piston diameter 125 mm, 1850mm stroke (1500 mm for acceleration and 350 mm for deceleration), and a piston velocity between 7 and 8 m/s. Working cylinder pressure shall be 350 bar and the overall hydraulic-cylinder length shall be less than 5 m.
- Valves to regulate piston acceleration within a maximum of 1.9g during the acceleration phase. The flowrate during the acceleration phase is estimated at 5000 L/min per cylinder.
- 350 bar accumulators with a total exchange volume of 25 litres.
- Pumps, filters (solids and water filters), and hydraulic reservoirs
- An extension to at least two low pressure components shall be added to the design.
- The system may require an electronic controller and sensors to interface with the CSIR supplied control box, preferably through the CAN-Bus using SAE J1939 protocol.

- The hydraulic system should withstand 10 mm of rain per hour (uncovered), 95 % humidity, operation within 0 °C and 45 °C, and dust (62 to 500 microns particles). The hydraulic system shall withstand storage temperatures between -10 °C and 55 °C and normal transport vibration on tar, dirt, or gravel roads.

3 INVITATION FOR PROPOSAL

Proposals are hereby invited from suitably qualified service providers for the supply of:

- Expert hydraulics design services to develop the preliminary design into a detailed and final design in collaboration with CSIR.
- Manufacturing and supplying the hydraulic system based on the detailed design.
- Documentation on how to maintain and operate the manufactured equipment.
- Testing and certification of manufactured equipment for safety and regulatory compliance.

Additional details can be shared after a nondisclosure agreement has been signed.

4 PROPOSAL SPECIFICATION

All proposals are to be submitted in a format specified herein. However, tenderers are welcome to submit additional / alternative proposals over and above the originally specified format.

Services Required

Scope of work should include but are not limited to:

Deliverable 1: Provision of a detailed design and specifications based on our preliminary design in collaboration with the CSIR.

Deliverable 2a: Define, develop, and deliver a mathematical model/digital twin of the hydraulic-system compatible with MATLAB/Simulink that accurately represents its characteristics.

Deliverable 2b: Manufacturing, testing, demonstrating, and supplying the hydraulic system.

Services Required

Deliverable 2c: Documentation related to the maintenance and operation of the manufactured equipment.

Deliverable 3: A report of the results of the safety and regulatory testing of the manufactured equipment.

Deliverable 4: Integration of the hydraulic actuation sub-system onto the main system.

The CSIR should be provided the option to contract each of the above deliverables independently.

The CSIR reserves the right to contract each phase separately and sequentially.

If the CSIR chooses to do so, it may contract individually for each of the above deliverables.

5 FUNCTIONAL EVALUATION CRITERIA

5.1 The evaluation of the functional / technical detail of the proposal will be based on the following criteria:

Criteria	Weight	Score	Result
Relevance of Company profile/capabilities/offerings to the required tasks (Visit to company premises may be required). <ul style="list-style-type: none">Hydraulic and pneumatic design and manufacturing mainstream activity = 100Shell company or non-hydraulic-pneumatic = 0	30%	Out of 100	30
Previous experience in the design, manufacture, and testing of high-pressure, high-speed actuation components and systems. <ul style="list-style-type: none">High-speed ($v > 5$ m/s) with long stroke (stroke > 1 m) experience = 100Similar specification equipment, e.g., high-pressure, high-speed stamping equipment = 80	30%	Out of 100	30

<ul style="list-style-type: none"> No high-pressure or high-speed equipment experience = 0 			
At least 3 proofs of competency in project delivery to requirements of section 3. (Visits to the project application may be required). <ul style="list-style-type: none"> 3 or more proofs of projects in the requirements of section 3 = 100 At least 2 proofs of projects in any of section 3 requirements = 70 No projects = 0 	25%	Out of 100	25
Previous experience in safety and regulatory test and certification of complete actuation systems. <ul style="list-style-type: none"> Demonstrated experience = 100 No experience = 0% 	15%	Out of 100	15
Totals	100%	100	100

- Proposals with functionality / technical points of less than the pre-determined minimum overall percentage of 70% on any of the individual criteria will be eliminated from further evaluation.

6 ELIMINATION CRITERIA

Proposals will be eliminated under the following conditions:

- Submission after the deadline
- Proposals submitted at incorrect location
- Restricted suppliers

7 NATIONAL TREASURY CENTRAL SUPPLIER DATABASE REGISTRATION

Before any negotiations will start with the winning bidder it will be required from the winning bidder to:

- be registered on National Treasury's Central Supplier Database (CSD). Registrations can be completed online at: www.csd.gov.za;
- provide the CSIR of their CSD registration number; and

- provide the CSIR with SANAS approved B-BBEE certificate or affidavit on DTIC template. If no certificate can be provided, no points will be scored during the evaluation process. (RSA suppliers only)

SECTION B – TERMS AND CONDITIONS

8 VENUE FOR PROPOSAL SUBMISSION

All proposals must be submitted:

- **Electronically at tender@csir.co.za**
- **Email may be sent in parts if it exceeds 25MB**

9 TENDER PROGRAMME

The tender program, as currently envisaged, incorporates the following key dates:

- | | |
|--|-------------------------------|
| • Issue of tender documents: | Monday, 20 June 2022 |
| • Last date for submission of queries: | Monday, 11 July 2022 |
| • Closing / submission Date: | Thursday, 14 July 2022 |

10 SUBMISSION OF PROPOSALS

10.1 All proposals are to be clearly marked with the RFP number. Proposals must consist of two parts, each of which is clearly marked:

PART 1: Technical Proposal: RFP 3524/14/07/2022

PART 2: Pricing Proposal, B-BBEE and other Mandatory Documentation: RFP 3524/14/07/2022

10.2 Proposals submitted by companies must be signed by a person or persons duly authorised.

10.3 The CSIR will award the contract to qualified tenderer(s)' whose proposal is determined to be the most advantageous to the CSIR, taking into consideration the technical (functional) solution, price and B-BBEE.

11 DEADLINE FOR SUBMISSION

Proposals shall be submitted at the email address mentioned above no later than the closing date of **Thursday, 14 July 2022** during CSIR's business hours. The CSIR business hours are between 08h00 and 16h30.

Where a proposal is not received by the CSIR by the due date and stipulated place, it will be regarded as a late tender. Late tenders will not be considered.

12 AWARDING OF TENDERS

12.1 Awarding of tenders will be published on the CSIR's tender website. No regret letters will be sent out.

13 EVALUATION PROCESS

13.1 Evaluation of proposals

All proposals will be evaluated by an evaluation team for functionality, price and B-BBEE. Based on the results of the evaluation process and upon successful negotiations, the CSIR will approve the awarding of the contract to successful tenderers.

A two-phase evaluation process will be followed.

- The first phase includes evaluation of **elimination** and **functionality criteria**.
- The second phase includes the evaluation of **price** and **B-BBEE** status.

Pricing Proposals will only be considered after functionality phase has been adjudicated and accepted. Only proposals that achieved the specified minimum qualification scores for functionality will be evaluated further using the preference points system.

13.2 Preference points system

The 80/20 preference point system will be used where 80 points will be dedicated to price and 20 points to B-BBEE status.

14 PRICING PROPOSAL

- 14.1 Pricing proposal must be cross-referenced to the sections in the Technical Proposal. Any options offered must be clearly labelled. Separate pricing must be provided for each option offered to ensure that pricing comparisons are clear and unambiguous.
- 14.2 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.
- 14.3 Price should include additional cost elements such as freight, insurance until acceptance, duty where applicable.
- 14.4 Only firm prices* will be accepted during the tender validity period. Non-firm prices** (including prices subject to rates of exchange variations) will not be considered.

**Firm price is the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax which, in terms of a law or regulation is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;*

***Non-firm price is all prices other than "firm" prices.*

- 14.5 Payment will be according to the CSIR Payment Terms and Conditions.

15 VALIDITY PERIOD OF PROPOSAL

Each proposal shall be valid for a minimum period of three (3) months calculated from the closing date.

16 APPOINTMENT OF SERVICE PROVIDER

- 16.1 The contract will be awarded to the tenderer who scores the highest total number of points during the evaluation process, except where the law permits otherwise.
- 16.2 Appointment as a successful service provider shall be subject to the parties agreeing to mutually acceptable contractual terms and conditions. In the event of the parties failing to reach such agreement CSIR reserves the right to appoint an alternative supplier.
- 16.3 Awarding of contracts will be announced on the CSIR website and no regret letters will be sent to unsuccessful bidders.

17 ENQUIRIES AND CONTACT WITH THE CSIR

Any enquiry regarding this RFP shall be submitted in writing to CSIR at tender@csir.co.za with RFP No- 3524-14-07-2022 –The provision of services for the design support, manufacture, and testing of a high-pressure, high-speed hydraulic system for the CSIR as the subject.

Any other contact with CSIR personnel involved in this tender is not permitted during the RFP process other than as required through existing service arrangements or as requested by the CSIR as part of the RFP process.

18 MEDIUM OF COMMUNICATION

All documentation submitted in response to this RFP must be in English.

19 COST OF PROPOSAL

Tenderers are expected to fully acquaint themselves with the conditions, requirements and specifications of this RFP before submitting proposals. Each tenderer assumes all risks for resource commitment and expenses, direct or indirect, of proposal preparation and participation throughout the RFP process. The CSIR is not responsible directly or indirectly for any costs incurred by tenderers.

20 CORRECTNESS OF RESPONSES

- 20.1 The tenderer must confirm satisfaction regarding the correctness and validity of their proposal and that all prices and rates quoted cover all the work/items specified in the RFP. The prices and rates quoted must cover all obligations under any resulting contract.
- 20.2 The tenderer accepts that any mistakes regarding prices and calculations will be at their own risk.

21 VERIFICATION OF DOCUMENTS

- 21.1 Tenderers should check the numbers of the pages to satisfy themselves that none are missing or duplicated. No liability will be accepted by the CSIR in regard to anything arising from the fact that pages are missing or duplicated.
- 21.2 Electronic copy of each proposal must be submitted.
- 21.3 Pricing schedule and B-BBEE credentials should be submitted with the proposal, but as a separate document and no such information should be available in the technical proposal.

22 SUB-CONTRACTING

- 22.1 A tenderer will not be awarded points for B-BBEE status level if it is indicated in the tender documents that such a tenderer intends sub-contracting more than **25%** of the value of the contract to any other enterprise that does not qualify for at least the points that such a tenderer qualifies for, unless the intended sub-contractor is an exempted micro enterprise that has the capability and ability to execute the sub-contract.
- 22.2 A tenderer awarded a contract may not sub-contract more than **25%** of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an exempted micro enterprise that has the capability and ability to execute the sub-contract.

23 ENGAGEMENT OF CONSULTANTS

The consultants will only be remunerated at the rates:

- 23.1 Determined in the "Guideline for fees", issued by the South African Institute of Chartered Accountants (SAICA); or
- 23.2 Set out in the "Guide on Hourly Fee Rates for Consultants", by the Department of Public Service and Administration (DPSA); or
- 23.3 Prescribed by the body - regulating the profession of the consultant.

24 TRAVEL EXPENSES

- 24.1 All travel expenses for the CSIR's account, be it directly via the CSIR's travel agent or indirectly via re-imbursements, must be in line with the CSIR's travel policy. The following will apply:
- 24.1.1 Only economy class tickets will be used.
- 24.1.2 A maximum of R1400 per night for accommodation, dinner, breakfast and parking will be allowed.
- 24.1.3 No car rentals of more than a Group B will be accommodated.

25 ADDITIONAL TERMS AND CONDITIONS

- 25.1 A tenderer shall not assume that information and/or documents supplied to CSIR, at any time prior to this request, are still available to CSIR, and shall consequently not make any reference to such information document in its response to this request.
- 25.2 Copies of any affiliations, memberships and/or accreditations that support your submission must be included in the tender.
- 25.3 In case of proposal from a joint venture, the following must be submitted together with the proposal:
- Joint venture Agreement including split of work signed by both parties;
 - The original or certified copy of the B-BBEE certificate of the joint venture;
 - The Tax Clearance Certificate of each joint venture member;
 - Proof of ownership/shareholder certificates/copies; and
 - Company registration certificates.

- 25.4 An omission to disclose material information, a factual inaccuracy, and/or a misrepresentation of fact may result in the disqualification of a tender, or cancellation of any subsequent contract.
- 25.5 Failure to comply with any of the terms and conditions as set out in this document will invalidate the Proposal.

26 CSIR RESERVES THE RIGHT TO

- 26.1 Extend the closing date;
- 26.2 Verify any information contained in a proposal.
- 26.3 Request documentary proof regarding any tendering issue;
- 26.4 Give preference to locally manufactured goods;
- 26.5 Appoint one or more service providers, separately or jointly (whether or not they submitted a joint proposal);
- 26.6 Award this RFP as a whole or in part;
- 26.7 Cancel or withdraw this RFP as a whole or in part.

27 DISCLAIMER

This RFP is a request for proposals only and not an offer document. Answers to this RFP must not be construed as acceptance of an offer or imply the existence of a contract between the parties. By submission of its proposal, tenderers shall be deemed to have satisfied themselves with and to have accepted all Terms & Conditions of this RFP. The CSIR makes no representation, warranty, assurance, guarantee or endorsements to tenderer concerning the RFP, whether with regard to its accuracy, completeness or otherwise and the CSIR shall have no liability towards the tenderer or any other party in connection therewith.

DECLARATION BY TENDERER

Only tenderers who completed the declaration below will be considered for evaluation.

RFP 3524/14/07/2022

I hereby undertake to render services described in the attached tendering documents to CSIR in accordance with the requirements and task directives / proposal specifications stipulated in RFP 3524/14/07/2022 at the price/s quoted. My offer/s remains binding upon me and open for acceptance by the CSIR during the validity period indicated and calculated from the closing date of the proposal.

I confirm that I am satisfied with regards to the correctness and validity of my proposal; that the price(s) and rate(s) quoted cover all the services specified in the proposal documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this proposal as the principal liable for the due fulfilment of this proposal.

I declare that I have no participation in any collusive practices with any tenderer or any other person regarding this or any other proposal.

I accept that the CSIR may take appropriate actions, deemed necessary, should there be a conflict of interest or if this declaration proves to be false.

I confirm that I am duly authorised to sign this proposal.

NAME (PRINT)
CAPACITY
SIGNATURE
NAME OF FIRM
DATE

WITNESSES

1
2
DATE:

28 ANNEXURE A

ANNEXURE B RETURNABLE CHECKLIST

NOTE: The bidder is required to complete each and every schedule listed below.

The bidder must complete the following returnable documents:

RETURNABLE DOCUMENTS –		
The below documents must be submitted		
Description	Included	
	Yes	No
Company Profile detailing relevance of capabilities, Previous experience in the design, manufacture, and testing of high-pressure, high-speed actuation components and systems. proofs of competency in project delivery, and Previous experience in safety and regulatory test and certification of complete actuation systems.		
Central Supplier database (CSD Report)		
BBBEE certificate or sworn affidavit		
Declaration by tenderer		
SBD 1 Form		