

INVITATION TO BID
FOR PROCUREMENT OF UNMANNED WEIGHBRIDGE SYSTEM
Tender.No.NC/PUR/76/22

1. **National Cement Share Company (NCSC)** intends to procure service, through open competitive tendering, for unmanned weighbridge system
2. Bidding will be conducted through open competitive bidding procedure using a non-discretionary “pass/fail criterion (for pre-evaluation qualification) and through technical and Financial evaluation
3. Bidding is open to eligible bidders of both Ethiopian and foreign companies.
4. Late bids shall not be accepted.
5. A complete set of bidding (TOR) documents may be acquired by interested bidders during the bid floating period, from our website www.nationalcementsc.com/bids;
6. Interested bidders may obtain further information via the following addresses;

Cell: +251930283490/+251 946439394/+251912708007

E-mail: yonas.haile@nationalcementsc.com, beyan.mustefa@nationalcementsc.com,
behailu.sori@nationalcementsc.com

7. Bids must be duly received by NCSC at the following address:

bid@nationalcementsc.com

Or

National Cement Share Company
Addis Ababa, Sarbet
Gidey G/hiwot Bldg, 3rd floor
Tel: +251 11 4 42 19 28

Cell: +251 960-36 71 36 /+251 930-28 34 90/+251 946 43 93 94

Addis Ababa,Ethiopia

On or before September 12 /2022 at 10:30 AM .

8. Bid opening shall be on September 15, 2022 at 10:30 AM at **NCSC's DIRE DAWA HEAD OFFICE.**
9. Bids will be opened in the presence of the bidders' representatives who choose to attend the opening.
10. NCSC reserves the right to reject any or all bids, declare a failure of bidding, or not award the contract at any time prior to contract award, without thereby incurring any liability to the affected bidder or bidders.

Note: Bids submitted via email shall have a subject “**TENDER FOR UNMANNED WEIGHBRIDGE SYSTEM**” or shall refer The **Tender number**.



9/5/22
12/08/2022



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NATIONAL CEMENT S.C

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P.O.Box 94
Dire Dawa, ETHIOPIA
E-MAIL: info@nationalcementsc.com

Ref NO. NC/PR/176/22
Date: 12/8/2022

Terms of Reference (TOR) for
Implementation of Unmanned Weighbridge System
National Cement Share Company

1. Background of the Organization:

National Cement Share Company (NCSC) is located in the Eastern part of Ethiopia, right at the entrance of Dire Dawa city at 515 km away from the capital city of Addis Ababa. The establishment of the current National Cement Share Company (NCSC), the former Dire Dawa Cement & Limestone Factory, dates back to 1936 G.C. Established by Italians, during occupation in 1936, and being the pioneering cement producing and selling factory in the country, the factory has played a key role in national development for more than 8 decades.

NCSC, since inception up to now, has seen varying features in its mandate of establishment, ownership, structural set-up, technology, product type and volume and no of establishment, corresponding to the major socio-economic changes that took place in the country. Currently, the factory supplies two cement products, namely: OPC (Ordinary Portland Cement) and PPC (Pozzolanic Portland Cement) both to domestic and export markets. It also supplies semi processed cement product called Clinker both for use as input for its grinding plant and for the external market as well.

National Cement believes in win-win business philosophy and operates by harmonizing the interests of its stakeholders: shareholders, customers, suppliers, government, communities and the environment by operating in an eco- friendly cement processing.

NCSC has been using Microsoft Dynamics NAV ERP system since 2013 G.C. for different departmental operations and Mettler Toledo weighbridge software for the weightment of all inbound and outbound materials. Since then, there were many improvements from version upgrade to additional module inclusion. The ERP system has been improved its version from 2009 to 2013 and to 2018. Currently Microsoft Dynamics NAV 2018 ERP system is being used in the company by making a partial integration with the Mettler Toledo weighbridge weightment system only for the purpose of ticket-matching (meaning to reconcile the weight on the weighbridge system and the weight shipped on the NAV system). This ticket-matching takes a longer time at weightment site. Furthermore, in addition to the weighbridge attendants who work on three shifts on weighbridge system, the presence of additional weighbridge staff named ERP data encoders is mandatory.





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2. Objective:

NCSC is seeking proposals from qualified and experienced IT firms to install and deploy an unmanned weighbridge system that can be easily integrate with the currently used ERP system (Microsoft Dynamics NAV 2018). The system must be scalable to allow additional features, that allows the company's weighbridge system to be functional without operator.

Interested applicants should provide an estimate of all costs associated with the service. NCSC will evaluate the proposals to determine which applicant's solution meets the organization's requirements and the state-of-the art solution.

3. Scope of the Work:

A. Design, Development, and Deployment of Unmanned Weighbridge System

- Unmanned /Unattended weighbridge System that can be fully integrate with Microsoft Dynamics NAV 2018 ERP system.

B. Integration of Unmanned Weighbridge System with ERP

- Ensure the integration of Unmanned /Unattended weighbridge System with Microsoft Dynamics NAV 2018 ERP system. The integration is mainly to avoid the manual data encoding method for shipment on ERP at weighbridge which is mandatory to deduct form a specific customer balance.

C. Integration of both the main weighbridge and coal area weighbridge (which is used for the weighment of coal before consumption)

- Ensure the integration of coal area weighbridge system with the main weighbridge in similar way as the main weighbridge so as to operate it without weighbridge operator. The Integration of the coal area weighbridge system should allow to export the data to other application programs such as Excel, CSV, Word and PDF, or other helpful application programs for analysis and generation of the analytical report as and when required.

D. Design, Development, Installation and Deployment of Unmanned Weighbridge System

- After successful implementation of Unmanned Weighbridge System solution accepted by NCSC, the system should be kept under warranty period for 6 months. On completion of the warranty period, the system will stay under maintenance period for 12 months.



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- The software company/firm should carry out regular support, maintenance and regular updates. The support level depends upon the complexity of the task, which should determine the service should either be remote support, on-call support or stationed support (As per decided by NCSC management).

E. Disaster Recovery System (DRS)

- The software company/firm should also suggest the Disaster Recovery Plan (DRP) for database safety and possible loss from natural disasters. It needs to include the DRP plan, and the client needs to take a precautionary and correcting mechanism under disaster occurrence. It also should contain alternative solutions for DRS, if any.
As a disaster recovery plan, at least the vendor should implement with one additional redundant server. Because if one server where the unattended weighbridge system fails the other one can automatically replaces the failed one until the failed one is repaired.

F. Data Export System:

- The database system should export the data to other application programs such as Excel, Word and PDF, or other helpful application programs for analysis and generation of the analytical report as and when required.

4. Details of what the Weighbridge System should include:

- Features that enable its integration with Microsoft Dynamics NAV 2018 ERP system.
- It should eliminate the need of weighbridge attendants/operators.
- Robust security features.
- It should provide web- based Interface for access IOT smart controller from ICT office.
- It should be able to manage all inbound and outbound materials. And also transfers of cement from the company to other remote warehouse locations.
- Features to handle return cement due to different reasons like accident, damage etc
- Handling of multiple Sales Orders incase a customer needs to load from two or more sales orders at time or a single shipment (sometimes a customer may need to load from multiple sales order in case of a single sales order have not enough balance to load).
- It should incorporate IOT Smart Controller to display all hardware working status.
- The IOT Smart Controller should connect all the required peripherals for unmanned weighbridge system like boom Barrier, Traffic Signal, LED display, Sound PA system, RFID Reader, CCTV IP Camera, Weighing Indicator etc.
- Automatic proper truck position controlling and announcing features. If truck is not in proper place, it will ensure that the weighment process not to be further proceeded.





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- Allows driver to be self-served using the RFID card.
- It should have RFID Card reader for driver and truck information.
- Smart Boom Barrier Gate that will manage truck's entrance/exit to and from the weighbridge.
- Traffic light to indicate the status of the weighbridge.
- It should have a feature to automatically reconcile quantity loaded at packing area, weighed at weighbridge and shipped on the ERP system.
- Should have a feature of validation at the main gate area to ensure that the truck that leaves a compound is passed through the weighbridge.
- Validates if the customer balance allows the shipment for the loaded quantity and product.
- A feature that automatically populates the information on the card to the ERP system for shipment to deduct from that specific customer's sales order record. if the variance percentage is within the permissible pre-set range.
- In weighment office, it should allow one computer is connected with one computer with unmanned indicator and live view vehicle position by camera.
- Automatic Number Plate Recognition (ANPR) CCTV camera to automatically recognize truck plate number.
- It should capture two vehicle images and store on the system with the associated ticket number so we can access it any time.
- A feature that allows or forbids based on the permissible variance range set by the company. Kg/bag variance in the case of an acceptable weight should be clearly identified and handling of returning the trucks and correction is expected to be handled by the system.
- The weighbridge system should capture truck plate number register to the numbers to its database in readable text format.
- Supports multi user and multi shift
- Configurable Auto email send facility for the required reports as per the company need.
- Ticket generation facility as per the requirement of the company for the report types, design and format.
- Automatic SMS send facility for daily weighbridge report and variance report.
- Various type of analysis reports generation features.
- Customized daily, monthly and annual report generation in CCV, Excel, pdf format

5. Existing Systems in NCSC

- Mettler Toledo ScaleWin Weighbridge system
- Sales and Marketing Management (Microsoft Dynamics NAV 2018)
- Warehouse Management (Microsoft Dynamics NAV 2018)
- Purchase Order Management (Microsoft Dynamics NAV 2018)
- Requisition Management (Microsoft Dynamics NAV 2018)
- Financial Management (Microsoft Dynamics NAV 2018)

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- Production Management (Microsoft Dynamics NAV 2018)
- Fleet Operations & Fright Order Management (Microsoft Dynamics NAV 2018)
- Basic HR and Payroll Management (Microsoft Dynamics NAV 2018)
- Gate Pass Management (which is not functional yet) (Microsoft Dynamics NAV 2018)
- Costing Tool
- IT Administration (Microsoft Dynamics NAV 2018)
- Other web-based applications that automates other organizational activities.

6. Expected Deliverables and Timeline:

The potential vendor shall deliver:

- An SRS document detailing the system requirements.
- Unmanned Weighbridge System which incorporates all the required peripheral devices to perform different activities of the operator along with an intelligent control system.
- A system which enables 24x7 weighing operations without the need of a dedicated operator at the weighbridge.
- Information display system to display weight, truck plate number and other messages to guide the truck driver.
- Weighing Terminal with RFID Card Reader or Touch Panel Terminal - for accurate and quick data input.
- Boom-barriers to control physical access to weighbridge entry & exit and streamlining truck movement. Barrier gates should be functioned operated automatically with an integrated unmanned weighbridge system.
- An easy and user-friendly user interface which can be totally operated by the truck driver. A user-interface that supports options for the truck drivers to select the local language is preferable.
- A system that provides Two Way Weighbridge Automation System (that allows vehicle enter both side for weighment).
- Day/night IP Camera to capture truck image for audit purpose
- Voice guidance and instructions to diver with pre-recorded messages in language of choice and customizable ability to configure multiple language support for the pre-recorded messages.
- Well-prepared user guideline and technical support guideline for Unmanned Weighbridge System with English language.
- The deployment should be on-premises and for external access to find a way using the public IP that NCSC owns.
- The implementation language should be English.
- In addition to the additional features included in this document, it must Include the current features supported by NCSC's weighbridge system.

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- The system should support a customizable dashboard reports and real-time data analysis report.
- The weighbridge system should support a feature to import the necessary documents and records from the existing NCSC Mettler Toledo ScaleWin to the new unmanned weighbridge system.
- A complete set of required documentation including flowchart and process of the system.
- IT administration is mandatory for the system, so as to allow some configurations only for IT personnel.
- Necessary onsite training to be provided to all relevant end-users of the system
- Free support, maintenance and licensing of the system for a period no more than 12 months from the date of hand-over to NCSC (Inclusive of on-site debugging/correction when necessary).

These timelines are indicative, and bidder should include a more detailed delivery timeline in their proposal.

7. Duration and Location:

The service provider will install all the necessary tools and deploy the unmanned weighbridge system within (duration will be specified) from the signing of the contract. This service is required for National Cement Share Company (NCSC). The service provider will install and deploy the Unmanned Weighbridge System and provide ongoing technical support and maintenance for minimum of one (1) year or 12 months starting from the successful implementation the system.

8. Evaluation

NCSC will review the submitted proposals in accordance with the specific qualification, and experience requirements – as well as with the specific tasks stated on section 4 above. Firms should clearly indicate their experience and previous engagements in line with the specific requirements.

The evaluation involves three stages, in which preliminary evaluation and mandatory documents are evaluated and checked in the first stage; technical evaluation is conducted on the second evaluation stage, and final evaluation is conducted on the financial proposal for the system implementation by the bidder.

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The bidder requires a minimum of 70 out of 100 points allocated for professional ability. Bidders will be evaluated in terms of the minimum requirements. Bidders who do not fulfill all the requirements, or do not submit the required documents will be disqualified.

9. Financial Proposal/ Budget

All costs should be stated in Dollar. The budget should be presented in a format where cost areas are identified, including costs relating to:

- SRS document
- The installation of required peripherals and associated systems
- Software installation
- Training of Relevant staff
- Other related costs, including support and maintenance

10. General Qualifications of the Software Company/Firm

Software Company/Firm with Unmanned Weighbridge System implementation capability that has the following experience:

- Legally registered organization with requisite professional experience of three (3) years minimum and experience of Unmanned Weighbridge System installation.
- Prior experience should include a full range of activities from Unmanned Weighbridge System planning process, and implementation projects.
- Senior (managerial) level experience in implementation of such systems.
- Proven experience in integration of the weighbridge system with ERP systems.
- Ability to work under pressure and meeting deadlines.
- Excellent communication, and presentation skills as well as ability to work with teams.
- Qualified personnel in project management, system analysis, and unmanned weighbridge software installation.
- Demonstrated ability to deploy and manage staff and experts with relevant experience.

11. Acceptance of Proposal

All rights to accept or reject proposal without giving any reasons, shall be reserved by NCSC. If deemed necessary, the software company/firm shall be asked for modifications.





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12. Confidentiality

During the performance of the assignment or any time after expiry or termination of the agreement, the software company/firm shall not disclose to any person or otherwise make use of any confidential information which the software company/firm has obtained or may obtain from NCSC. Except for purposes of this assignment, the information shall not be disclosed to the public nor used in whatever form without written permission of NCSC.

13. Documents to be Submitted by Software Company/Firm

The application shall contain following documents:

- A. Technical and financial proposal
 1. Technical Proposal: Concept of the Unmanned Weighbridge System Development and installation, development methodology, work plan and a list of resources to be used.
 2. Financial Proposal: Detailed budget breakdown including taxes
- B. Details of the Software Company/Firm
 1. Organization profile with relevant experiences
 2. Signed CV of the Team leader and core team members
 3. A copy of Company/Organization registration
 4. A copy of latest Tax Clearance Certificate

The TOR should reach the address below via courier/hand delivery or via e-mail. With the subject "Call for Proposal – Unmanned Weighbridge System" and submit at: bid@nationalcementsc.com National Cement Share Company. Dire Dawa Ethiopia.

