SAIPEM clough SCJV

EXPRESSION OF INTEREST (EOI)

Project	Burrup Urea Project
Company / Client	Perdaman Chemicals and Fertilisers Pty Ltd
Requisition Number	45826-M-70066
Package Title	1x Ammonia Storage Tank (4210-T-001)
1. SUBMISSION PROCEDURE	
EOI Instructions	Supplier(s) are invited to express interest by registering on ICN Gateway where competency and previous positive experiences of similar supply of goods / services can be demonstrated. When submitting interest registrants will be asked to complete an expression of interest document. The registrant's response will form their Expression of Interest (EOI) for material and/or services. Suppliers will only be considered for Prequalification should they satisfy stated criteria, including but not limited to Health, Safety & Environmental Management, Quality management, financial standing, relevant experience and availability (if required).
EOI Closing Date	Please submit by close of business on **7th September 2023**
Returnable Schedules	Where the EOI calls for any Returnable Schedules, please ensure all schedules are submitted.
Contact	All initial enquiries should be made through the Industry Capability Network Western Australia (ICNWA). Andie Pfaff Andie.Pfaff@icnwa.org.au +61 (08) 9365 7442
URL	For more information regarding the Perdaman, refer • https://www.perdamanindustries.com.au/scjv/
2. INDICATIVE SCOPE OF WORK	
Package Description	**Overview** Saipem Australia Pty Ltd and Clough Projects Australia Pty Ltd Joint Venture (herein referred to as the "CONTRACTOR") has reached an agreement with Perdaman Chemicals and Fertilisers Pty Ltd (herein referred to as the "OWNER") for the Engineering, Procurement, Construction and Commissioning of the BURRUP UREA PROJECT. Perdaman Chemicals and Fertilisers Pty Ltd (OWNER) is focused on the development of the Perdaman Project which shall be the world's largest gas stream ammonia-urea plant with a production capacity of 2.14 MMTPA granular urea. The plant is located within the Burrup Strategic Industrial Area, Burrup Peninsula, approximately 10 km from Dampier and 20 km north-west of Karratha on the Northwest coastline of Western Australia. **General Scope of Supply / Services** The Sub-Contractor shall quote for the complete supply of the equipment/materials as listed below, including the furnishing of all labour, supervision, materials, equipment, tools, supplies and services required to design, manufacture, paint, assemble, inspect,

test, store prior to shipping (if required), pack/protect for shipment, and deliver the equipment/materials to the contractual delivery point. The installation and commissioning of the equipment/materials listed below, in addition to the resolution of issues/punch list items is to be completed by the Sub-Contractor.

The Tank shall be complete with all mounted equipment, systems and accessories necessary for safe, efficient and reliable operation of the plant including but not limited to the systems and equipment described as per this Scope of Work, Specification for Field Fabricated Tanks.
This specification defines the minimum requirements for the supply and does not relieve the SUBCONTRACTOR of its full responsibility for the design and the reliable operation of the equipment supplied. Therefore, the SUB-CONTRACTOR will be liable for the correct mechanical operation of equipment.
Supply shall be in accordance with the specifications, codes and standards mentioned in this Material Requisition.

Position No.	Item Tag	Equipment	Qty
1	4210-T-001	Refrigerated Ammonia Storage Tank	1
2	4210-EH-001	Ammonia Tank Foundation Heater	1

The Ammonia storage tank is designed as a full containment tank system with penetrations below the liquid level. The inner and outer tanks are constructed of low-temperature carbon steel. The open top inner steel tank contains the stored liquid product, while the outer tank, under normal conditions, contains the product vapor. The ammonia tank is designed as a full containment structure, i.e. in the unlikely event of an inner tank failure; the outer tank will contain the product.
The space between the inner and outer tank bottom is filled with a concrete separation layer. Cellular glass insulation and a 50 mm layer of concrete support the outer tank bottom and provide the necessary insulating layer below the outer tank. A wood block is located below the outer tank shell to provide support for the outer tank which also acts as an insulation barrier between the outer tank and ring wall foundation.
The external surface of the outer shell is covered with an FOAM Insulation System. An insulation deck is suspended over the inner tank from the outer tank roof on rods attached to the outer roof framing. The suspended deck fiber glass blanket insulation completes the inner tank insulation boundary along with the bottom cellular glass insulation and the shell HFIP insulation.
The tank will set on a concrete slab foundation. The concrete slab foundation design and construction is by Contractor. However, input data for Foundation design shall be provided by SUBCONTRACTOR.
The tank foundation will have an auto regulated temperature control using electric heaters to prevent freezing on ground. It is provided with a dedicated refrigeration system (BOG) to manage the boiloff condition and to manage the refrigeration requirements.
Tank SUB CONTRACTOR shall comply with AS 2022:1983 & Arndt “Anhydrous ammonia storage and handling (known as anhydrous ammonia code)”.

The Scope of Work shall include but not limited to the following:
3.1.1 DESIGN & DETAIL ENGINEERING

- Detailed design engineering & residual engineering for material, pre-fabrication, erection and installation of the field fabricated steel storage tanks fully erected on foundation at job site as per the latest edition of applicable design & construction codes, standards and meeting requirements specified in the relevant project technical specifications and data sheets & meeting requirements of local regulations,
- Design to consider all loads including dead, operating, wind, flood and seismic loads ,live loads, external attached piping loads, reaction loads due to PSVs etc & ensuring stress are not exceeding allowable limits & ensuring design integrity & adequacy check as required;
- Provision of 3D model;

	• Provide detail design calculations, general arrangement and detailed drawings for all • components; • Design to consider boil off from Ammonia Tank; • Design of internal & external piping and fittings with piping supports where required; • Detail design provision of pressure relief and vent valves; • Design of in-tank valves (for tanks with hazardous contents); • Sub-Contractor shall provide necessary design inputs (including but not limited to; design & • sizing of anchor straps, wind & seismic forces & moments) to Contractor for foundation design • including Tank Foundation heater (foundation by CONTRACTOR); • Sub-contractor shall design & supply seismic isolators as required by seismic design verification • Design of platform, ladders, staircase, handrails and safety gates integral to the equipment; • Design of internal spray rings, piping and fittings; • Design of roof rafter structural framing in latest version STADD Pro design software • Statutory authority approval and registration, where required; 3.1.2 PROCUREMENT AND SUPPLY The Sub-Contractor is responsible for Procuring & supplying all the material & services that are required for the fabrication, erection, inspection, testing up to mechanical completion of steel tanks on foundation in-situ position at job site along with mountings and accessories including, but not limited to; all consumables, plates, internal& external loose & welded attachments, supporting rings & clips, internal dip pipes / distribution pipes with spray nozzles, structural support for pipes, expansion bellows for inner shell penetrating nozzles, external downcomer pipes, all insulations materials, material for platforms, gratings, cage ladders, steel staircase tower, flanges, pipes, fittings, instrument & electrical cables , cable trays, junction box, earthing clips along with cable connectors, mountings like VRV & PSVs, in-tank valves, etc. integral to the tank(s) as per the applicable design & construction codes, standards and requirements specified in the relevant project technical specifications and data sheets and meeting requirements of local regulations • Sub-contractor is responsible for preparing Technical delivery condition(TDC), Bill of Quantities • (BOQs) & Material Requisitions for all raw materials procurement from sub-suppliers & placing orders of sub-suppliers • Sub-Contractor is responsible for material receiving, unloading and proper storage at manufacturer/designated area, including movement of material during tank fabrication & construction of field fabricated tank. • Sub-contractor shall be responsible for providing original mill tests certificates, impact test certificates and all other relevant test certificates (as required). • Sub-contractor shall state any support services, utilities, special facilities, equipment, or other needs, required to execute the work that are not specifically mentioned herein • Tank EPC works include detail engineering, procurement, construction of tanks up to pre-commissioning works. SUBCONTRACTOR activities include, but may not be limited to: • Detailed Engineering, Procurement and Construction of tanks including the associated piping works. • SUBCONTRACTOR will procure all the items required for the construction of tanks will be detailed in the RFQ. • Other associated Piping, Structural, Painting and Insulation works within the Tank battery limit. Tank construction scope will be up to nozzle flanges. Subsequent piping works from Tank nozzle shall be by others.

	• Setup of Prefabrication shop near to the site location as necessary to complete the scope of works. • Pre-fabrication and installation of tank parts such as shell plates, suspended decks, supports, stair ways, all access platforms as required, bottom and annular plates, anchor chairs, piping and other parts as per drawings and project specifications as applicable. • Pre-fabrication and installation of all structural works including but not limited to stair ways/stair tower, access platforms, walkways as per drawings and project specifications. • Execution of all material handling activities of Tank material including Piping, Structural, Painting and Insulation works. • Proper raw material storage and preservation • Collection and loading of material and other items if any with suitable cranes and other equipment by SUBCONTRACTOR from Contractor warehouse / Storage Area. • Transportation and storing of materials in fabrication areas. • Any other intermediate handling activities including loading and unloading at various locations as applicable including the area of sandblasting and painting. • Any intermediate handling activities of fabricated items inside the fabrication and installation areas • Delivery of fabricated structures/ items from SUBCONTRACTOR's workshop location (including loading, transportation and using of cranes and other equipment are at SUBCONTRACTOR's charge) to the respective erection locations of Ammonia Plant. • Handling, cutting, bevelling, fit-up and welding of structures, piping and other items as applicable. • Tracing, bevelling, cutting, fit-up, welding for every type of derivation (including splicing/ reinforcing pads if required as applicable) • Galvanizing of fabricated structures/ items as required in accordance with client's specifications. • NDT and stress relieving works of fabricated items and tank joints as per project specifications. • Hydrotesting of Tank, piping, and other items as applicable. • Hydrotesting of Valves if applicable as per client requirement • Pneumatic Test of piping/other parts of tanks as applicable. • Vacuum Box test as applicable for the tank • Installation of Scaffolding works as necessary to complete the tank construction works including preparation of scaffolding drawings, design calculation and material. • Installation of all kinds of valves as required in the scope of works. • Proper tagging of fabricated structures • Cleaning & preservation • Ensuring the fabricated structural members are in accordance with the drawings and specifications. • Material Traceability including cut-offs and scraps. • End protection and preservation of piping and other items. • Ensuring the free issue and all other materials is in accordance with the project drawings/ documents and specification. • QC inspection including Dimensional checking of all constructed items. • Wrapping for buried piping as necessary. • Prefabrication/installation of buried piping if applicable with jointing, wrapping and testing and making good of external surface protection with polyethylene tapes and testing. • Erection of all steel structures and Pipe supports including racks if any. • Assembly/erection of piping supports consisting of prefabricated basic parts.

	• Assembly/erection of supports such as special supports, spring supports, load cell, Teflon pads, etc. • Dismantling and rerouting of pipe works, and pipe supports if required based on site condition to complete the scope of works. • Dismantling and rerouting of underground pipe works if required based on site condition to complete the scope of works. • Arrangements for barricading etc. as necessary to meet construction HSE requirements. • Reinstatement activities after testing and/or pre-commissioning activities of all items described in the relevant drawing such as but not limited to permanent gasket, bolt, flanges, orifice plate, etc. • Construction shall be carried out as per various documents with the RFQ Package, national/international codes, and standards. • SUBCONTRACTOR shall take precautionary measures to protect construction work and material if any issued to them against damage due to construction activities, pilferage, and theft etc. • Housekeeping of work location at site: Prior to, during & after completion of construction activities, • SUBCONTRACTOR shall clear the site of all left out construction materials, construction equipment, debris etc. All serviceable material shall be deposited in the OWNER's store & unserviceable material to be taken outside the premises and shall be disposed of at the designated location approved by Owner/PMC/Statutory authorities. • SUBCONTRACTOR shall consider all necessary safety barricading for the safe execution of work. The height of the barricade shall be defined by the site HSE directives. • Some part of the work may have to be executed within existing plant and in the plant running condition or during shut down period as required. • SUBCONTRACTOR shall adhere to all necessary permits & safety measures for working personnel, material etc. • SUBCONTRACTOR shall ensure the safety of nearby structures / existing facilities while carrying out their site construction activities.
Standards	Compliance with National, International and Industry Standards, Australian and WA Regulatory requirements.
Key Dates	Tender is planned to be issued around the 18th of September 2023
Point of Delivery	Project Site Burrup Strategic Industrial Area (Western Australia)
3. RETURNABLE DOCUMENTS	
List of Returnable Schedules	Capability Statement and confirmation of ability to provide a high level service for the type of Service being requested in the above Scope of Work as required by the Project. Brief overview of any Local Partnerships and Facilities.
4. DISCLAIMER	
This Expression of Interest to gain an insight into the capabilities of potential service providers and not a Tender Invitation or offer - the schedule and content of this work is subject to change pending project demand and timelines.	

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TANK DETAILS - AMMONIA
STORAGE TANK in Project CERES

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Sl No	PROJECT UNIT/WBS							MATERIAL DESCRIPTION & IDENTIFICATION		EPC ITEM DESCRIPTION	EPC MAIN PACKAGE TAG	TYPE	ID. Diam./Height (mm)	Skid / Overall Dimensions (m x m x m) (L X W X H)	SHELL for STATIC - CASING for ROTATING	Normal Capacity (for gases Nm3/h / for liquids m3/h) - Volume (m3)	Insulation	NR.ITEM REQUESTED	INPUT UNIT WEIGHT	TOTAL WEIGHT	BILL ITEM CODE
	01	02	03	04	05	06	07														
	MAIN PLANT ORDER NR	MAIN PLANT NAME	UNIT	UNIT DESCRIPTION	SUB UNIT NR.	SUB UNIT NAME	UNIT LINE / TRAIN	MAT. ESTIMATE CLASSIFICATION	ESTIMATE MAIN CLASSIFICATION DESCRIPTION										kg	kg	
15	4000	OFFSITE	4200	STORAGE	4210	AMMONIA STORAGE TANK		EQUIP.	TANKS	Refrigerated Ammonia Storage Tank (See Remarks)	4210-T-001		28,000/ 30,000		LTCS / SS		COLD (See Remarks)	1	170,000	170,000	ME 02 01 03 01