

**IT NO : IT/30/01/2024-25**

**IT SPECIFICATION FOR REPAIR/ MAINTENANCE OF GALVANIZED RAZOR WIRE AT  
PMSA BASE GWADAR, RISHAD AT PASNI AND ORMARA**

S No	Specification	Remarks	Qty
1.	Area	7296 Feet	
2.	Galvanized Razor Wire	Repair/ Maintenance of already installed Razor Wire	607 Bundles/6KG Per Bundle (3,642 KG)
3.	Angles	Repair/ Maintenance of already installed Angles (10 feet distance)	732 Angles
4.	Straight wire	Straight wire (15 feet per kg required)	473 kgs
5.	Service and Transportation	Transportation and Repair/ Maintenance at all bases. Firm will be responsible for items delivery all bases.	
6.	Contact Number End User	0305-9722060 Lt SHAHID NOOR PN (Rishad pasni) 0333-2093321 Lt Abdullah KHAN PN (Ormara) 03421512242 Azhar Hussain RA-II (Gwadar)	
7.	Eligibility	All reputable GST Registered Firm/ contractor/ supplier	
8.	Acceptance Criteria	Inspection by end user successful installation of galvanized razor wire at all bases.	
9.	Warranty	01 year	
10.	EDC	40 Days	

**IT NO : IT/30/02/2024-25**

**T SPECIFICATION OF STBD MAIN DIESEL ENGINE 03 IN NO CYLINDER- PMSS  
SABQAT**

1	Parent Equipment	Propulsion
2	Sub Equipment	Main Diesel Engine
3	Make	Caterpillar USA
4	Model	3516 DITA V Type
5	Output	2730 BHP @ 1910 RPM
6	Qty	01
7	Engine Serial No	STBD 5MJ00001
8	Work required/ defect	Repair/ maintenance of Cylinders No 2,3 & 9 having 0 compression.
9	Detailed scope of work	1. Dismantling of 03 in No cylinders with all accessories 2. Repair/ maintenance of Cylinders No 2,3 & 9 having 0 compression. 3. Complete report defining the magnitude of work including all the measurement and new tolerances. 4. Provide complete list of items replaced/ repaired Items replaced to be handed over to ship staff for survey process 5. Lub oil 15W40 to be changed after repair work. 6. Lub oil filters to be replaced after repair work.
10	Technical Specification	2730 BHP @ 1910 RPM
11	Eligibilities	a. The firm should have experience of the same kind of work b. The firm should be NTN/GST registered.
12	EDC	30 days
13	Warranty	01 year
14	Acceptance Criteria (if any)	1. Satisfactory Operation 2. Trials conducted by Firm & SS for SAT Ops.
15	Any other relevant information	Nil

**IT NO : IT/30/03/2024-25**

**IT SPECIFICATIONS – STORE ITEMS REQUIRED FOR REPAIR/ MAINTENANCE OF PMSA  
BASE RISHAD AT PASNI AND PMSA BASE ORMARA**

<b>S No</b>	<b>SPECIFICATIONS</b>	<b>DESCRIPTION</b>				
1.	Parent Equipment	Repair/ Maintenance work				
2.	Make	As per contract				
3.	Model	N/A				
4.	Quantity					
<b>PMSA BASE RISHAD AT PASNI AND PMSA BASE ORMARA</b>						
	<b>S No</b>	<b>Description</b>	<b>PASNI</b>	<b>ORMARA</b>	<b>Den</b>	<b>Total</b>
	a.	Cement	760 Bags	700 Bags	Nos	1460 Bags
	b.	Sand Khaka x (08 x Sankra)	10 Dumpers	19 Dumpers	Nos	29 Dumpers
	c.	Crush Bajri x (08 x Sankra)	03 Dumpers	06 Dumpers	Nos	09 Dumpers
	d.	Steel Bars	2.5	-	Ton	0.5 Ton
	e.	Concrete Blocks (12 x 8 x 6 Inches)	4.000	5000	Nos	5000
	f.	SR Cement Slabs (8 x 1 Ft)	1000	-	Nos	1000
	g.	SR Cement Pre- Stressed Columns (13 ft x 6 x 7 Inch,Pre-Stressed)	20	-	Nos	20
	h.	Barbed Wire (PVC Coated)	3000	-	Ft	3000
	i.	Iron Angle PVC Coated (14 Gauge)	70	-	Nos	70
5.	Justification	a. Items are required for Repair/ Maintenance of Boat Ramp Repair/ Maintenance Boundary Wall Repair/ Maintenance of Sailors washroom roof and repair/ maintenance of western wali plaster at PMSA Base Rishad at Pasni. b. Repair/ Maintenance of Front security wall and Rooms at PMSA Base Ormara.				
6.	Detailed Scope of Work(Req from Repair agency)	Provision of store items for repair/ maintenance works at PMSA Base Ormara and Rishad at Pasni				
7.	Technical Spec ( if any)	N/A				
8.	EDC	06 Weeks				
9.	Warranty	01 x Years after construction/ Repair				
10.	Acceptance criteria( if any)	Satisfactory inspection may be carried out by firm before quotation for exact cost estimation.				
11.	Any other relevant information	POC for PMSA Base Rishad Pasni (Lt Shahid Noor PN) Contact No 0334-532910 ; POC for PMSA Base Ormara is (Lt Abdullah Sherwani PN) Contact No 0333-2093321				

**IT NO : IT/30/04/2024-25**

**IT SPECIFICATION OF PORT AND STBD MAIN DIESEL ENGINE 10,000 HOURS PMS  
ROUTINE (MAJOR OVER HAUL) - PMSS SABQAT**

1.	Parent Equipment	Propulsion
2.	Sub Equipment	Main Diesel Engine
3.	Make	Caterpillar USA
4.	Model	3516 DITA V Type
5.	Output	2730 BHP @ 1910 RPM
6.	Qty	02
7.	Engine Serial No	STBD 5MJ00001 and PORT 5MJ00002
8.	Work required/ defect	Major Over Haul
9.	Detailed scope of work	<ol style="list-style-type: none"><li>1. MOH of Port and Stbd MDE as per caterpillar USA manual.</li><li>2. Complete over hauling of Port and Stbd engines as per caterpillar USA manual including local control and local monitoring system and governor unit.</li><li>3. Inspection and renewal of 2 x 16 in no cylinder liners of both MDEs if repair/ replacement required.</li><li>4. Repair/ replacement of exhaust system.</li><li>5. Replacement and calibration of all defective electrical and electronics equipment associated with both MDEs.</li><li>6. Engine lubrication system to be overhauled and cleaned.</li><li>7. Engine fuel system including pumps overhauling.</li><li>8. Inspect and overhaul turbochargers and fuel system linkage</li><li>9. Inspect and clean oil sump</li><li>10. All coolers/heat exchangers to be chemically cleaned and pressure tested.</li><li>11. Engine air inlet system to be inspected, cleaned and overhauled.</li><li>12. Engine coolant system to be flushed and overhauled</li><li>13. Inspect/ rebuild or exchange jacket water pump and auxiliary water pump</li><li>14. Inspect/ clean sump breathers</li><li>15. Inspect/ check vibration dampers</li><li>16. Check/ inspect engine valves lash, injector timings and rotators</li><li>17. Check and flush cooling system.</li><li>18. Inspect/ replace thermostat gasket and seals</li><li>19. Inspect/ rebuild or exchange starter motor.</li><li>20. Inspect/ replace engine shock mounts</li><li>21. Calibrate all meters</li><li>22. Replacement/ calibration of all fuel injectors</li><li>23. Overhauling/ service of cylinder head, connecting rods, cylinder liners, pistons, turbochargers, oil pump, spacer plate, cam followers, and governor.</li><li>24. Install new piston rings, main and big end bearings.</li></ol>

		valve rotators and crankshaft seals
		25. Inspect/replacement of crankshaft main and big end bearings.
		26. Repair/ maintenance of any item other than MOH kit found defective.
		27. Complete report defining the magnitude of work including all the measurement and new tolerances.
		28. Provide complete list of items replaced/ repaired. Items replaced to be handed over to ship staff for survey process.
		29. NDT test to be carried out of all pistons, connecting rods, crankshaft, camshaft and cylinder block
		30. Replacement of lube oil filters, fuel filters, air filters by firm after MOH.
		31. Both Main Engine Gear Boxes with pumps overhauling routine to be carried out.
		32. Lube oil of both engines to be changed by firm after MOH. (DAE 15w40)
		33. Inspect/ rebuild or exchange jacket water pump and auxiliary water pump.
		34. Both engine gear box Lub oil filters to be repaired/ replaced.
		35. All tools/ spares for conduct of above mentioned activities will be used by contractor during conduct of MOH routines
		36. Spares are required to be genuine and OEM specified.
10.	Technical Specification	2730 BHP @ 1910 RPM
11.	Eligibilities	a. The firm should have experience of the same kind of work b. The firm should be NTN/GST registered
12.	EDC	45 days
13.	Warranty	01 year
14.	Acceptance Criteria (if any)	Satisfactory Operation Satisfactory trials required by firm and ship staff
15.	Any other relevant information	Nil

**IT NO : IT/30/05/2024-25**

**IT SPECIFICATIONS – REQUIREMENT OF MATERIAL FOR ENHANCEMENT OF SECURITY SYSTEM OF PMSA BASE KETI BANDAR**

1.	Parent Equipment	PMSA BASE KETI BANDAR																																	
2.	Sub Equipment	Under mentioned infrastructure requires repair work: a. Boundary Wall b. Main Gate c. Window Grill Guard Room d. Watch Tower																																	
3.	Assembly Component																																		
4.	Make	Local																																	
5.	Model	Local																																	
6.	Qty	Mentioned at S No 9 Below																																	
7.	Justification i.e PMS/ Failure/ FWT etc	Existing infrastructure degraded due FWT caused by environmental effects and requires immediate repair																																	
8.	Work Required/ Defect	Repair/ Maintenance of building infrastructure at PMSA Base Keti Bandar																																	
9.	Detailed scope of work	Following material for construction work are required at PMSA Base Keti Bandar: <table border="1"> <thead> <tr> <th>S No</th> <th>Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>a.</td> <td>Cement Bags 50 kg</td> <td>130 In No</td> </tr> <tr> <td>b.</td> <td>Steel</td> <td>350 Kg</td> </tr> <tr> <td>c.</td> <td>Sand</td> <td>08 Dumper</td> </tr> <tr> <td>d.</td> <td>Crush</td> <td>05 Dumper</td> </tr> <tr> <td>e.</td> <td>Cement Block</td> <td>4500 In No</td> </tr> <tr> <td>f.</td> <td>Mix Sand</td> <td>04 Dumper</td> </tr> <tr> <td>g.</td> <td>Steel Gate</td> <td>01 In No</td> </tr> <tr> <td>h.</td> <td>Steel Grill</td> <td>02 In No</td> </tr> <tr> <td>j.</td> <td>Barbed wire with PVC coded</td> <td>4400 sq.ft</td> </tr> <tr> <td>k.</td> <td>Iron angle</td> <td>220 In No</td> </tr> </tbody> </table>	S No	Description	Qty	a.	Cement Bags 50 kg	130 In No	b.	Steel	350 Kg	c.	Sand	08 Dumper	d.	Crush	05 Dumper	e.	Cement Block	4500 In No	f.	Mix Sand	04 Dumper	g.	Steel Gate	01 In No	h.	Steel Grill	02 In No	j.	Barbed wire with PVC coded	4400 sq.ft	k.	Iron angle	220 In No
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10.	Technical Spec	Measurement of Steel Gate: Length: 7 ft Width: 14 ft Gauge: 14 (2mm) Measurement of Window Grill: Length: 4 ft Width: 4 ft & 7 ft Dia: ½ inch Square Shape Rod																																	
11.	Eligibility Criteria	Any registered firm with good reputation and having experience of repair/ maintenance of building near sea																																	
12.	EDC	15 Days after contract and placement of order																																	
13.	Warranty	One year after completion																																	
14.	Acceptance Criteria	a. Inspection by end user b. Completion in due date																																	
15.	Any other relevant information	Nil																																	

# IT NO : IT/30/06/2024-25

## IT SPECIFICATION – REPLACEMENT OF ENGINE OF SSDG NO-1 - PMSS NUSRAT

S No	IT Specifications	
1	Ship's Name	PMSS NUSRAT
2	Parent Equipment	Power Generator
3	Sub Equipment/ System	SSG No 1 (110 KW)
4	Assembly/ Equipment	Engine
5	Make	DEUTZ
6	Model	D234V8
7	Qty	01
8	Justification	Performance degraded
9	Work Required	Dismantling/ removal of existing engine from SSDG No 1 and Installation/ commissioning of compatible CUMMINS engine on SSDG No 1
10	Technical Spec	110 KW 50 hz 380 V
11	Detailed Scope of works	Scope of work is as under: <ul style="list-style-type: none"><li>a. Decouple and remove existing Deutz engine from SSG No 1 and unship.</li><li>b. Install and commission refurbished CUMMINS (6CTA 8.3) engine on SSDG No 1, as per technical specifications.</li><li>c. Alignments of CUMMINS engine is the responsibility of firm</li><li>d. Any additional piping for S/W. Lub oil. fuel is the responsibility of firm</li><li>e. Installation/ provision of start/ stop and engine parameters at remote and local position.</li><li>f. Marine version engine is to be installed.</li><li>g. Any additional/ essential accessories i.e S/W cooling pump, Heat exchanger, after cooler etc are to be arranged installed by the firm.</li><li>h. Safeties of newly installed engine are to be tested and certificate is to be provided.</li><li>j. Technical manual of newly installed engine is to be provided.</li><li>k. Tools, special equipment/ accessories required for said repair/ maintenance are to arranged by the firm</li></ul>
		<ul style="list-style-type: none"><li>l. Any damage/ defect/ wear tear occurred during course of removal, repair and installation will repair by firm</li><li>m. Requirement of external services will be responsibility of firm.</li><li>n. Install 25/50 hrs routine is to be carried out by the firm and spares required for initial 25/50 hrs routine are to be provided by the firm</li><li>p. NSN/ part numbers of essential spares including list of spares required for TOH and MOH are to be provided by the firm</li><li>q. 02 days training of SS w.r.t PMS routines will be arranged by the firm at ship premises.</li><li>r. The firm must have experienced of same kind of work.</li><li>s. The firm should be NTN/ GST registered</li></ul>
12	EDC	10 x working days
13	Warranty	01 x year
14	Acceptance Criteria	<ul style="list-style-type: none"><li>a. Satisfactory work done by the firm</li><li>b. Satisfactory VA Report by FMG/ME</li><li>c. Satisfactory conducted PQA test FMG/WE</li><li>d. No leakage/ unusual noise at full load trials<ul style="list-style-type: none"><li>(1) 30% load for 1/2 hr</li><li>(2) 50% load for 1/2 hr</li><li>(3) 75% load for 1 hr</li><li>(4) 100% load for 4 hr</li></ul></li></ul>
15	Any other relevant information	d. Satisfactory sea trials.

**IT NO : IT/30/07/2024-25**

**IT SPECIFICATION FOR REPLACEMENT OF DIEF PANELS, ECMS, SENSORS, PLC AND DETAILED INSPECTION OF C9 CAT GENSET No. 1 & 3 – PMSS DASHT**

No	Description	
1	Parent Equip	GENSET No 1 & 3 and Switchboard
2	Sub Equipment	Generator and Controls
3	Assm Comp	DIEF panels, ECMS, Sensors and PLC
4	Make	Caterpillar and Siemens
5	Model	C9 water and air cooled (C9Z05156 and C9Z05159) and T5N530 PR222DS/P-LSI630A- SIEMENS SIMATIC S7-300
6	Quantity	02 x GENSETs items and 01 x Switchboard PLC
7	Justification	Sudden tripping of GENSETs due DIEF and ECM malfunctioning
8	Work required	Replacement of DIEF panels, ECMS, PLC and Sensors and detailed inspection of GENSETs
9	Scope of work	<ul style="list-style-type: none"> <li>a Detailed health inspection of injectors and associated gear driven pumps of GENSET No 1 &amp; 3</li> <li>b Sharing of report indicating hidden defects and any unseen anomaly in the systems. Report should also include recommendations for catching defects (if any)</li> <li>c Replacement of complete DIEF panels with new OEM specified only for GENSET No 1 &amp; 3</li> <li>d Replacement of ECMs (Engine Control Modules) with new OEM specified only for GENSET No 1 &amp; 3</li> <li>e Replacement of Sensors (Lube Oil Press, Fuel Press (MBS 3100), Lube Oil Temp (MBS 5150 050N1072) and Atmospheric Temp) with new OEM specified only for GENSET No 1 &amp; 3</li> <li>f Replacement of 03 x ABB T5N530 PR222DS/P-LSI630A (3 Phase SACE Tmax breaker) with control device, motorised unit, with frame and accessories with new of OEM only for GENSET supply to Main Switchboard</li> <li>g Replacement of SIEMENS SIMATIC S7-300 PLC (Programmable Logic Controller) with new OEM specified only for Main Switchboard</li> </ul>
10	Tech Specs	As per OEM specified only
11	Eligibilities	Reputable contractor having working experience of C9 Caterpillar Genset Siemens Switchboard PLC fitted on MPVs
12	LCO	10x Days
13	Warranty	01 x Year with supportability of any spares needed in warranty period
14	Acceptance Criteria	<ul style="list-style-type: none"> <li>a OEM Certified spares only (All spare part(s) used during defect rectification of GENSETs are to be procured through OEM local Rep M/s Allied Engineering Ltd.)</li> <li>b Upon scrutiny of tender provided documents i.e. technical specifications</li> <li>c Successful FATs and SATs upto satisfaction level</li> <li>d SAT running of both GENSETs No 1 &amp; 3 with no abnormal noise and vibration</li> <li>e SAT spare running of all GENSETs with no fluctuation hunting</li> </ul>
15	Any other info	Contact SS MEO

## IT NO : IT/30/08/2024-25

### IT SPECIFICATION – TOP OVERHAUL/ W-5 ROUTINES OF MAIN ENGINE (FSME)– PMSS REHMAT

S No	IT Specifications
1.	Parent Equipment
2.	Sub Equipment
3.	Assembly Component
4.	Make
5.	Model
6.	Quantity
7.	Justification i.e PMS/ Failure/ FWT etc
8.	Work required/ Defect
9.	Technical Specification
10.	Scope of Work

Propulsion System/ FSME  
Main engine MTU  
All Components and Part Of Main Engine as W-5 routines  
MTU Friedrichshafen Germany  
16V396TB93  
01  
TOH (W-5 routine) is due at 3000Hrs as per OEM manual  
TOH of Main engine (FSME) is required to be carried out as per OEM maintenance manual.  
1800 KW (850 – 2000 RPM)  
2448HP  
16 Cylinders.  
Repair/ maintenance (TOH/ W-5 PMS routine essential work) work of main engine (FSME) is required with provisioning of parts/ spares on firm arrangement. Details is appended below:

**Cylinder spaces:**  
Inspect cylinder space for work/ scratches and decarburize piston crown and cylinder TDC area (Endo scope combustion chamber to be carried out)

**Cylinder heads:**  
a. Check valve guides and cam/ cam shaft and replace if required.  
b. Replace valve stem seals.  
c. Decarburizing and reseating of valve to be carried out and tested for leak after fitting in cylinder heads.  
d. Replace cylinder head gaskets.  
e. Repair/ replace water and oil transfer pipes and seals.

**Valve gear:**  
Inspect/ check valve gear (Tappet, rocker arm and adjusting screw for wearing out / replace if unsatisfactory) and tappet clearance to be adjusted as per OEM limits.

**Connecting rod bearing:**  
Inspect/ measure and renew if required.

#### **Vibration damper:**

Check condition of damper and fluid level and its securing mechanism.

#### **Governor:**

Replace diaphragm and rubber/ buffer in governor drive for satisfactory operation.

#### **Turbo charger:**

Remove, disassemble, decarburizing and clean turbo charger. Check components, measure cleanliness and renew bearing. Check axial clearness of wheels and also pressure test at 10 bars before fitting on engine (New turbo overhauling kit to be used)

#### **Air ducting:**

Inspect/ clean air intake flexible hoses of A, B & M blower.

#### **Inter cooler:**

Renew, disassemble, clean (chemical cleaning) of air and sea water side and pressure test before installations for leaks and replace seals. Replaces seals of emergency shutdown air flaps and check of leakages for safe operation.

#### **Exhaust system:**

- a. Clean exhaust manifold / galleries, pressure test and chemically clean.
- b. Replace expansion bellow (16", 14", 8", 6") with V clamp.
- c. Exhaust flow control of 'B' turbo charger to be cleaned new seals, lock to be fitted.
- d. Disassemble main exhaust flap of exhaust system, clean and repair/ overhaul for sat operation.
- e. Dismantling of main exhaust pipe and flap valve for cleaning/ overhauling and reinstallation with new accessories/ fittings.

#### **Fuel injection system:**

- a. Check and adjust fuel injection time for proper function.
- b. Check fuel injection pumps for commencement of fuel delivery (phasing and calibration to be carried out). Defective delivery valve to be replaced with new.
- c. check function of cylinder cutout and adjust/ reset if required.
- d. Pressure test of injectors for good spray pattern, replace injector nozzle if necessary.



- e. Defective injector sleeve to be replaced with new.
  - f. Fuel injection and return lines to be verified for safe operation.
  - g. Fuel delivery pump seal to be replaced.
- Raw water pump:**  
Repair/ maintenance and disassemble, inspect shaft, impeller, seals and bearing.
- Coolant pump:**  
Disassemble, inspect shaft, impeller seals and bearings. Replace if any parts found unsatisfactory.
- Coolant cooler (Heat exchanger):**  
Repair/ maintenance and disassemble, chemical clean and pressure test for leaks. Replace seals/ gaskets and defective nut/ bolts.
- Starter and dynamo:**  
Repair/ maintenance remove, disassemble and overhaul with replacement of defective parts component (Apply marine version varnish/ cloth and paper) Renew contacts point of armature power supply.
- Engine mounting:**  
Check engine mounts and alignment of engine with gear box. Realign if misalignment found. New foundation/ coupling bolts to be used.
- Monitoring and control:**
- a. Replace defective meter/ gauges of engine at local panel.
  - b. Defect rectification of engine monitoring and control system if required with necessary replacement of parts / components for safe operation of main engine upon TOH.
- Lagging/ cladding work of exhaust piping work:**  
Replace/ renew all lagging/ cladding work after repair work on engine exhaust pipe work.
- Engine alignment:**  
Check alignment of engine with gear box and realigned if required and inspect vulkan coupling for crack/ deterioration.

		<p><b>Lubrication system:</b></p> <ul style="list-style-type: none"> <li>a. Replace O seals/ gaskets of oil pipes attached with sump lub oil cooler and filter assembly.</li> <li>b. Fit new lub oil filters prior &amp; after initial running of engine (TOH work)</li> <li>c. Coolant is to be added after successful testing of cooling system.</li> <li>d. W-5 standard kit is required to be arranged/ provided by the firm and the same will be inspected by the ship's staff in presence of the firm rep.</li> <li>e. Check and inspect gear box lub oil pump for satisfactory operation and replace if required.</li> <li>f. OEM certified spares/ parts of W-5 routines to be ensured.</li> <li>g. Instrument colour coding paint of mechanical system to be carried out.</li> <li>h. Provide complete list of replaced/ repaired items. Replaced items to be handed over to SS for survey.</li> <li>i. All spares, tools, special equipment / tools, accessories etc for repair and cleaning work are to be arranged by the contractor.</li> <li>k. Any damage / defect / wear tear occur during the course of removal and installation of main engine is the responsibility of the concerned firm</li> </ul>
11.	Eligibility Criteria	<ul style="list-style-type: none"> <li>a. The firm must visit onboard and carry out diagnosis/ inspections to establish the extent of required work.</li> <li>b. Firms not undertaking the visit onboard ship to see extent of work will not technically qualify.</li> <li>c. The firm must have sufficient experience of same kind of work onboard corvette.</li> <li>d. Successful HATs and SATs at 1700 RPM</li> <li>e. NTN/ GST registered.</li> </ul>
12.	EDC	45 Working days
13.	Warranty	01 year at completion of successful sea trial
14.	Acceptance criteria	<ul style="list-style-type: none"> <li>a. Main engine will be operated at 1700 RPM while maintaining all parameters with designed limits after the W-5 PMS routine.</li> <li>b. The firm has to provide OEM conformity certificates of MTU Germany for W-5 kit (TOH kit)</li> <li>c. Satisfactory HATs and SATs after completion of the W-5 routine</li> <li>d. Satisfactory trials of monitoring and control system including all safeties/warnings/trips</li> <li>e. The firm must provide data recording sheets for following: <ul style="list-style-type: none"> <li>(1). Crank case bore</li> <li>(2). Cylinder liner</li> </ul> </li> </ul>

- (3). Crank shaft data sheet
- (4). Main bearing
- (5). Connecting rods
- (6). Connecting rod bearings
- (7). Valve and injection timing
- (8). Piston cylinder head clearance
- (9). Main engine alignment, gear box and vulkan coupling inspection/ setting certificate will be provided after W-5 PMS routine

15. Any other relevant information



**IT NO : IT/30/09/2024-25**

**IT SPECIFICATION DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND MAINTENANCE OF NET METERING BASED SOLAR PV SYSTEM ON LEASE PURCHASE AGREEMENT FOR PMSA UNITS**

S No	Description	
1.	Parent Equipment	Power generation and distribution
2.	Sub Equipment	Power supply
3.	Assembly Component	Solar PV system complete
4.	Make Model	Pakistan/ China Solar PV system with branded equipment
5.	Quantity	04 x PMSA bases
6.	Justification i.e PMS/ Failure/ FWT etc.	New solar PV system to be installed at Head Quarter PMSA
7.	Work required	Solar PV system to be installed by AEDB approved firms on Lease Purchase model (10 Years BOOT Basis) in accordance with AEDB approved bidding documents (Design, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Net Metering Based Solar PV System on Lease Purchase Agreement).
8.	Technical Specification	HQ PMSA building load – 355 KW
9.	Scope of Work (Salients)	<p>Following work is required to be undertaken for design, supply, installation, testing, commissioning operation and maintenance of net metering based solar pv system on lease purchase agreement (10 Years BOOT Basis) for PMSA Bases i.a.w T&amp;C of contract agreement:</p> <ul style="list-style-type: none"> <li>i. Design, supply, installation, testing, commission, operation and maintenance of net metering solar based PV system on lease purchase agreement for HQ PMSA according to load.</li> <li>ii. Bidders shall bear all cost associated with preparation and submission of their respective bids/proposals without any liability for PMSA.</li> <li>iii. Bidders to visit and examine the site of the project and obtain all information for preparing the bid and design/ installation without any liability to procuring agency.</li> <li>iv. Bidders to evaluate requirement of any modification/ replacement in existing power generation and distribution system to meet solar system requirement</li> <li>v. Procuring agency will permit to enter its premises and lands for the purpose of inspection and feasibility</li> <li>vi. Bidders to provide proposed construction schedule, method of performing the project, list of sub-contractors and copy of PPIB certificate.</li> <li>vii. The pre bid meeting if convened will be held at HQ PMSA.</li> <li>viii. Solar PV module shall be of Tier-1 manufacturer as per latest Bloomberg New Energy France. (BNEF)</li> </ul>
	ix.	The PV technology shall be half cut mono-PERC.
	x.	Each module shall have IP 65 rated junction boxes which shall be dust and vermin proof having copper bus bar terminals.
	xi.	EPDM rubber gasket, reverse blocking diodes and IEC standards 62790 to be complied.
	xii.	The power rating for each PV module shall be more than 540 W/P under STC conditions.
	xiii.	The PV module must be tight tested based on IEC standards 61215.
	xiv.	The PV module shall be SRO 604 issued by Govt of Pakistan.
	xv.	Each PV module shall have a unique barcode identification tag issued by the manufacturer.
	xvi.	Inverter shall be 3 phase grid tied with minimum IP 65 protection having CEC efficiency not less than 98.5% and output frequency of 50 HZ.
	xvii.	Under all conditions DC to AC ratio of the inverter shall not be more than 1.1 percent.
	xviii.	The Operating temperature range of inverter shall be between -25 C to 60 C
	xix.	Inverter must have diesel generator synchronization module for seamless integration with generators and shore supply.
	xx.	Inverter shall have AC over current protection, residual current monitoring, DC reverse polarity protection, DC insulation resistance detection.
	xxi.	Inverter shall have a built-in data logger, communication, interface protection and remote monitoring capabilities.
	xxii.	Mounting structure shall be UV resistant and hot dip galvanized steel frame of gauge 12 with 85 microns or thicker zinc coating and 100 micron for base plate
	xxiii.	Spacing from parapet wall must be 3 feet.
	xxiv.	The structure shall withstand wind speed of 150 KM/H.
	xxv.	Complete civil work for mounting structure installation be carried out as per requirement.
	xxvi.	For roof top areas with additional slabs, rawal bolts based anchoring shall be followed in combination with water proofing treatment.

- xxvii. Copper cables with purity of 99.9% or more with XLPO insulation and rated for 1500 V shall be used.
- xxviii. The minimum size for DC cables shall be 4mm<sup>2</sup>.
- xxix. Under all conditions for DC cables, voltage drop shall be less than 0.5 % at STC and for AC cables voltage drop shall be less than 1 % at STC.
- xxx. Separate DC and AC earthing with 3 Ohm shall be achieved.
- xxxi. Perforated cable trays of 16 gauge or thicker and UPVC pipes shall be installed.
- xxxii. Circuit, breakers, protection devices and non-isolated lighting arrestors shall be installed as required.
- xxiii. MCB/MCCB circuit breaker shall be rated for more than 1.5 times then STC current rating.
- xxiv. Energy generation, power production and level monitoring of voltage and current for monitoring and control system to be ensured.
- xxv. Net metering application and installation of bidirectional meter as per regulation by NEPRA to be ensured
- xxvi. Civil work w.r.t installation/ Framing of solar PV plates/ Batteries stowage and rigging of wiring/ cables to be carried out.
- xxvii. Location for installation of solar plates and battery rooms will be identified by the units.
- xxviii. All accessories/ equipment i.e DC beaker, charge controller, AC breaker, inverters, bus bars and change over switches are to be installed i.a.w load.
- xxix. All electric wires/ cables to be concealed to avoid from any damages/ deterioration
- xl. Solar PV system is to be installed at net metering based on lease purchase agreement
- xli. Proposed drawing and design/model will be approved by MoD for further installation.
- xlii. All parameters for monitoring of load and systems to be installed.
- xliii. All spares, tools, special equipment/accessories etc required for installation for said work to be arranged by the firm.
- xliv. Any damage/ defect/ wear tear occur during the course of installation will be repaired/met by the firm.

11.	Eligibility Criteria	<ul style="list-style-type: none"> <li>i. Approved firms by AEDB.</li> <li>ii. The firm must visit on site for feasibilities/ inspection to establish the extent of required work.</li> <li>iii. The firm not undertaking the visit on site to see extent of work will not technically qualify.</li> <li>iv. The firm must have sufficient experience of same kind of work with net metering based PV system on lease purchase agreement.</li> <li>v. Firm must fulfill all requirements/ conditions mentioned in AEDB approved Bidding Documents (Design, Supply, Installation, Testing, Commissioning, Operation and Net Metering Based Solar PV System on Lease Purchase Agreement)</li> </ul>								
12.	EDC	x months after awarding agreement/contract								
13.	Warranty	<ul style="list-style-type: none"> <li>i. Each module shall have 12 Years material and workman ship warranty and 25 years performance warranty</li> <li>ii. Warranty shall be issued by the third party</li> <li>iii. Inverter shall have minimum 10 years of replacement warranty</li> </ul>								
14.	Acceptance Criteria	<ul style="list-style-type: none"> <li>i. Power Output of Solar as per design.</li> <li>ii. Satisfactory performance as per end user.</li> </ul>								
15.	Any other relevant information	For any information w.r.t Solar System installation. Following may be approached.								
		<table border="1"> <thead> <tr> <th>S No</th> <th>Rank &amp; Rate</th> <th>POC</th> <th>Mobile No</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>S/Lt Saleem Akther</td> <td>HQ PMSA</td> <td>0300-5051996</td> </tr> </tbody> </table>	S No	Rank & Rate	POC	Mobile No	1.	S/Lt Saleem Akther	HQ PMSA	0300-5051996
S No	Rank & Rate	POC	Mobile No							
1.	S/Lt Saleem Akther	HQ PMSA	0300-5051996							

**IT NO : IT/30/10/2024-25**

**SPECIFICATIONS/ TERMS FOR SUPPLY OF FRESH WATER TO HQ PMSA COMPLEX**

<b>S No</b>	<b>Description</b>	<b>Requirement</b>
1	Mode of provision Qty Embarkation Frequency Unit Any other information	Supply of fresh Drinking Water through bowser to PMSA Shore units/ ships at Karachi As per requirement As and when required. Contractor is to supply water within 04 hrs of receipt of order. <u>US Gallon</u> <u>US Ton</u> <ul style="list-style-type: none"><li>• Fitness certificate for Human consumption from a Govt recognized lab for the supplied water.</li><li>• Provision of approx. 60 meter pipe/ flexible hose for supplying water on ships along with suitable water pump.</li><li>• Police Verification of the staff employed on duties is mandatory.</li></ul>
6	Contract Duration	01 Year (Extendable)
7	Rate	Rate will be quoted as per US Gallon/Ton
8	Payment Terms	Payment released through CNA after verification by End user and sanctioning of payment by HQ PMSA

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**Note: 100% Payment after completion by CNA**

**Director General**

Pakistan Maritime Security Agency

Plot No 34-A, Dockyard Road

KARACHI

Telephone 021-48509194

Fax 99214625

E-Mail [dpcc@pmsa.gov.pk](mailto:dpcc@pmsa.gov.pk)

**INVITATION TO TENDER GENERAL INSTRUCTIONS**

**1. CONDITIONS GOVERNING CONTRACT:**

All Procurement / Repairs / Maintenance Contract, Local Purchase Order (LPO) and work ordered made as a result of this IT shall mean the agreement entered into between the parties that is buyer and the supplier will be in accordance with the PPRA rules 2004 or any amendment issued from time to time. Therefore all open tender inquiry will be uploaded on PPRA Website and publish on print media as the case may be.

**2. SUBMISSION OF TENDER:**

Firms shall submit their offers in two separate envelopes clearly marked as "**Commercial Offer**" and "**Technical Offer**" for open tender. Both envelopes shall be properly sealed bearing the signature of the bidder. Thereafter both these envelopes shall be placed in one bigger envelope. This envelope should bear the address of the D (P&CC).

a. **TECHNICAL OFFER:** Should contain all relevant details and specifications as per the IT specifications. Literature / Brochure or any other relevant technical details may also be included in it. Technical offer should not contain the price. Indication of price in technical offer may render it null and void. The word "Technical Offer" should be clearly mentioned along with the tender No and date on the envelope containing the technical offer.

b. **COMMERCIAL OFFER:** The price to be quoted in figures as well as in words along with essential Literature / Brochures. The word "Commercial Offer", tender number should be clearly mentioned on the envelope. Taxes, duties, freight / transportation, insurance charges etc if any are to be indicated separately. Total price of the items quoted against the tender is to be clearly mentioned. It should also contain a **pay order 2% in the shape of pay order of the offered value** as earnest money. Cross cheque or cash is not acceptable in this case. The offer received without earnest money will be rejected.

c. **SPECIAL INSTRUCTIONS:** Tender documents and its conditions may please be read point to point and understood properly before quoting. All tender conditions should be responded properly. In case of any deviation due to non-acceptance of tender conditions, the same should be highlighted along with changed offer / conditions. Tender may however be liable to be rejected.

**PREPARATION OF QUOTATION**

Please prepare quotation in this format In case of GST @ 18% or SST @ 15%:

<u>S.NO</u>	<u>Description</u>	<u>Unit Price</u>	<u>Qty</u>	<u>Total</u>	<u>GST @ 18% or SST @ 15%.</u>	<u>T/Price</u>

Please prepare quotation in this format In case of without GST or SST:

<u>S.NO</u>	<u>Description</u>	<u>Unit Price</u>	<u>Qty</u>	<u>Total</u>	<u>T/Price</u>

**Without this format quotation will not be accepted.**

**3. DATE AND TIME FOR RECEIPT OF TENDER:**

Tender must be dropped in tender Box placed at main gate. HQ PMSA will not accept any excuse of delay occurring due to whatsoever reason. Tender received after the time indicated in IT will not be entertained. The tender opening time, however, fall on next working day in case of closed / forced holiday or any other unforeseen event. Only authorized representatives of firm will be allowed to

attend tender opening. **The tender received through Fax, E-Mail will not be acceptable.**

**4. TENDER OPENING:**

Technical offer will be opened as per scope of work on the date and time mentioned in the tender. Commercial offer shall be retained with technical officer. It will be opened at a later stage. All technical offers will be scrutinized by a Technical Scrutiny Report (TSR) committee nominated by HQ PMSA. The offers which are not as per the IT specification will be rejected. The firms recommended by TSR Committee will be allowed to attend the commercial opening for which date and time will be intimated separately.

**5. VALIDITY OFFER:**

The validity period of quotations must be indicated and should invariably be for 90 days extendable to 30 days from the date of opening of Technical offer.

**6. QUOTING OF RATES:**

Unit price of the item, GST/ SST or any other Govt tax and Total price all these should be indicated separately in Pak Rupees in a very clear manner as follows:

<b>S No</b>	<b>Description Qty</b>	<b>U/Price</b>	<b>GST/SST/Taxes</b>	<b>Total Price</b>
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**7. ATL / GST / SST / INCOME TAX NUMBER:**

Only registered suppliers, who are on Active Taxpayers List (ATL) of FBR, are eligible to supply goods/ services to Government department. GST/SST and income tax number be clearly indicated on the quotations and all other relevant documents.

**8. RETURN OF EARNEST MONEY:**

- a. Earnest money to the unsuccessful bidders will be returned **one week** after commercial opening date.
- b. Earnest money to the firm who has won the purchase order/ work order & contract will be returned on submission of Bank Guarantee as per the contract.

**9. TENDER FEE:**

Each technical offer must be accompanied with Cash of **Rs.5,000/-** nonrefundable as tender fee (In favour of IT Sale Account DG PMSA).

**10. INSPECTION AUTHORITY:**

Joint inspection of stores provided and work done will be carried out by committee appointed by HQ PMSA or as per the contract.

**11. CONDITION OF STORES:**

Spares, Stores, items and work done will be accepted on Warranty / Guarantee of the firm on Form DPL-15.

**12. DOCUMENTS REQUIRED:**

Following documents are required to be submitted alongwith the quotes where applicable:

- a. OEM / Authorized Dealer/Agent Certificate alongwith OEM Dealership Evidence as applicable.
- b. The Supplier is to provide OEM conformance certificate. In case of Fax or e-mail hard copy of conformance certificate must follow. On receipt of this PMSA HQ may approach the OEM to confirm the veracity of the documents submitted. Companies / firms rendering false OEM conformance certificate will be penalized as per rules in vogue.

**13. SECURITY DEPOSIT / BANK GUARANTEE:**

To ensure timely and correct supply of stores the firm will furnish an unconditional Bank Guarantee (BG) from a schedule bank for an amount of **10%** of the contract value (excluding taxes, duties / freight handling charges on a stamp paper of the value of (Rs.100/00) as per prescribed format in the shape of Bank Guarantee. Format of Bank Guarantee is at Annex „B“.



**14. CURRENT BANK STATEMENT:**

For all contracts of Rs 1,000,000/- or more the firm is required to submit current bank statement of the firm.

**15. INTEGRITY PACT:**

Procurement exceeding Rs 1.00 M shall be subject to an integrity pact, between the Buyer and the Suppliers or Contractors.

**16. CORRESPONDENCE:**

All correspondence will be addressed to the Buyer. Correspondence with regard to payment or issue of delivery receipt may be addressed to D (P & CC) PMSA Karachi.

**17. PRE SHIPMENT INSPECTION:**

PMSA may send a team of Officers for the inspection of Major Equipment and Machinery items at OEM premises for inspection before dispatch if required at the Supplier's cost and arrangement.

**18. AMENDMENT IN CONTRACT:**

Contract may be amended / modified to include fresh clause modify the existing clauses with the mutual agreements by the Supplier and the Buyer such modifications shall form an integral part of the contract.

**19. DISCREPANCY:**

The Buyer will render a discrepancy report to all concerned within 45 days after receipt of stores for discrepancies found in the consignment. The quantities found short are to be made good by the Supplier free of cost.

**20. PRICE VARIATION:**

Price offered against IT are to be firm and final.

**21. LIQUIDATED DAMAGES (LD):**

Liquidated Damages upto 2% per month are liable to be imposed on the Suppliers by the Buyer in accordance with PPRA rules, if the stores supplied after the expiry of the delivery date without any valid reason. Total value of the LD shall not exceed 10% of the contract value.

**22. RISK PURCHASE:**

In the event of failure on the part of Supplier to comply with the contractual obligations the contract will be cancelled at the Risk and Expense of the Supplier in accordance with PPRA rules.

**23. PENALTY:**

In case of wrong supply of the item by the Supplier, a penalty of 10% of the contract value may be imposed by this HQ PMSA apart from any other penalties.

**24. ALL RIGHTS RESERVED:**

HQ PMSA may reject all bids or proposals at any time prior to the acceptance of a bid or proposal as per PPRA Rule 33(I).

**25. PAYMENT:**

The payment will be released through Controller of Naval Accounts (CNA) Karachi in Pak Rupees after completion of delivery / work.

26. **PARTIAL ORDER.** All participating firms are to comply acceptance of partial order.

27. **DISQUALIFICATION:** Offers are liable to be rejected if:-

- a. Received after time and date specified in the IT.
- b. Offers are found conditional or incomplete in any respect.
- c. There is any deviation from the General / Special / Technical Instructions contained in this tender.

- d. Taxes and duties, Freight / Transportation and Insurance charges not indicated separately as per required price breakdown mentioned above.
- e. Pay Order with Commercial Offer and Cash with Technical Offer is not received.
- f. Multiple rates quoted against one item.
- g. Manufacturer's relevant Brochures and technical details on major equipment, assemblies are not attached in support of specification.
- h. Offers (Technical / Commercial) are containing amendments / corrections / overwriting etc.
- j. National Tax No (NTN) and GST/SST No are not indicated on technical and commercial offer.
- k. If validity of offer is not quoted as required in IT or made subject to confirmation later.