

**OIL AND GAS DEVELOPMENT COMPANY LIMITED**  
**Chanda LPG Plant**

**SCHEDULE OF REQUIREMENT**

**TENDER ENQUIRY # TE/COF/M/ATA/02/2023**

Technical Services for Maintenance of 03 nos. AJAX integral Engine-compressors at Chanda Plant

<b>S#</b>	<b><u>Description</u></b>	<b><u>Reference #</u></b>	<b><u>Rate</u></b>	<b><u>Total rate (inclusive of all Taxes)</u></b>	<b><u>Deviation</u></b>
1	As per scope of work given in tender documents				

**Note: Separate rate to be quoted for each and every activity as mentioned in scope of work.**

**DETAIL OF AJAX INTEGRAL EQUIPMENT:**

<b>A- LP COMPRESSOR (K-100)</b>	
<b>Engine Side:</b>	<b>Compressor Side:</b>
<b>Make:</b> Cooper Ajax USA	<b>Serial No:</b> 099883
<b>Model:</b> DPC-140	<b>Pressure:</b> 3.5 psi to 50 psi
<b>Serial No:</b> 83813	<b>No of Comp Cylinders:</b> 01
<b>Speed, rated RPM:</b> 400	<b>Comp Stroke:</b> 11"
<b>Rated BHP:</b> 140 (Two Stroke Engine)	
<b>No of Power Cylinder:</b> 01	
<b>Engine Bore &amp; Stroke:</b> 13.25" x 16"	
<b>B- MP COMPRESSOR (K-101)</b>	
<b>Engine Side:</b>	<b>Compressor Side:</b>
<b>Make:</b> Cooper Ajax USA	<b>Sr. No:</b> 11616
<b>Model:</b> DPC-600	<b>Pressure:</b> 50 PSI to 50 PSI
<b>Sr. No:</b> 84059	<b>No. of Comp Cylinders:</b> 02
<b>Speed, Rated RPM:</b> 400	<b>Comp Stroke:</b> 11"
<b>Rated BHP:</b> 600 (Two Stroke Engine)	
<b>No. of Power Cylinder:</b> 03	
<b>Engine Bore &amp; Stroke:</b> 15"x16"	
<b>C- H.P COMPRESSOR (K-102)</b>	
<b>Engine Side:</b>	<b>Compressor Side:</b>
<b>Make:</b> Cooper Ajax USA	<b>Sr. No:</b> 11598
<b>Model:</b> DPC 600	<b>Pressure:</b> 250 PSI to 750 PSI
<b>Sr. No:</b> 84069	<b>No. of Com Cylinder:</b> 02
<b>Speed Rated RPM:</b> 400	<b>Com Stroke:</b> 11"
<b>Rated BHP:</b> 600 (Two Stroke Engine)	
<b>No. of Power Cylinder:</b> 03	
<b>Engine Bore &amp; Stroke:</b> 15"x16"	

## SCOPE OF WORK

### 1- Cooling System:

ACTIVITY	DESCRIPTION	REMARKS
Ajax301	Thoroughly clean all cooling water jackets of Engine & Compressor for dirt accumulation.	
Ajax302	Inspect and replace worn cooling fan and water pump belt	
Ajax303	Inspect/ replace radiator fan shaft bearing (if required) and remove vibrations.	
Ajax304	Straightening & cleaning of cooler fins.	
Ajax305	Inspection/mechanical cleaning of cooler tubes. (External and Internal)	
Ajax306	Inspect/ repair of cooling water pump (if required).	
Ajax307	Greasing of all Bearings.	
Ajax308	Remove all leakages.	
Ajax309	Cleaning of Fan Blades & Painting of Cooling Fan Housing and Bed Assembly	

### 2- Lubrication System:

ACTIVITY	DESCRIPTION	REMARKS
Ajax310	Clean and inspect force feed lubricators and replace worn Parts.	
Ajax311	Clean and inspect pre lube pump and replace worn parts.	
Ajax312	Rectify Level Float Valve operation problem	
Ajax313	Inspect and remove leakages in the lubrication system.	
Ajax314	Clean overhead lubricant tank and remove any leakages.	

### 3- Crankcase Assembly:

ACTIVITY	DESCRIPTION	REMARKS
Ajax315	Drain and flush Crankcase.	
Ajax316	Inspect/ replace crank pin bearings (if necessary) and adjust clearances. (Power & compressor piston)	

<b>Ajax317</b>	Inspect/ replace cross head pin bearing (if necessary) and adjust clearances. (Power & compressor piston)	
<b>Ajax318</b>	Inspect/ replace thrust bearings (if necessary) and adjust clearances.	
<b>Ajax319</b>	Inspect & repair/ replace crankshaft (if necessary).	
<b>Ajax320</b>	Inspect/ replace lay shaft gear & drive gear on crankshaft (if necessary).	
<b>Ajax321</b>	Clean breather caps on the crankcase.	
<b>Ajax321A</b>	Check and adjust sheaves alignment	

#### 4- Power Cylinder Assembly:

ACTIVITY	DESCRIPTION	REMARKS
<b>Ajax322</b>	Remove cylinder head, Inspect intake and exhaust ports and remove all carbon deposits in ports.	
<b>Ajax323</b>	Checking/ replacement of rod pressure packing.	
<b>Ajax324</b>	Inspect/ replace worn piston rings (if required) and thoroughly clean piston and ring grooves	
<b>Ajax325</b>	Inspect/ replace power cylinder bodies (if required).	
<b>Ajax326</b>	Inspect/ replace piston and piston rod (if required).	

#### 5- Compressor Cylinder Assembly:

ACTIVITY	DESCRIPTION	REMARKS
<b>Ajax327</b>	Check and replace compressor piston rod pressure packing if required	
<b>Ajax328</b>	Check and replace compressor variable pocket pressure packing. If required	
<b>Ajax329</b>	Inspection/ replacement of Cylinder liners	
<b>Ajax330</b>	Inspect/ replace piston and piston rod (if required).	
<b>Ajax331</b>	Inspect/ replace worn piston rings (if required) and thoroughly clean piston and ring grooves.	
<b>Ajax332</b>	Rebuilding/ replacing of Suction & Discharge Valves	

<b>Ajax333</b>	Inspect/ replace compressor cylinder body	
<b>Ajax333A</b>	Dismantling and reinstallation of both cylinder bodies and Mechanical cleaning of water jackets thereof(LP, MP,HP)	

### 6- Fuel System:

ACTIVITY	DESCRIPTION	REMARKS
<b>Ajax334</b>	Check Fuel System and clean inlet Fuel Filter.	
<b>Ajax335</b>	Complete overhauling of fuel injection valves.	
<b>Ajax336</b>	Inspect/ replace hydraulic pumps (if required).	
<b>Ajax337</b>	Inspect/ replace hydraulic NRV's (if required).	
<b>Ajax338</b>	Remove leakages in the hydraulic system.	
<b>Ajax339</b>	Inspect/ replace tubes of hydraulic circuit (if required).	
<b>Ajax340</b>	Clean hydraulic storage bottle.	
<b>Ajax341</b>	Inspect/ replace driving Cams of hydraulic pumps (if required).	
<b>Ajax342</b>	Inspection of lay shaft and driving Gears.	
<b>Ajax343</b>	Inspect the fuel intake manifold and remove leakages.	

### 7- Air Intake System:

ACTIVITY	DESCRIPTION	REMARKS
<b>Ajax344</b>	Inspect/clean air filters and replace if required	
<b>Ajax345</b>	inspect/Rebuild Reed valves if required	

### 8- Ignition System:

ACTIVITY	DESCRIPTION	REMARKS
<b>Ajax346</b>	Inspect/ replace spark plugs (if required).	
<b>Ajax347</b>	Inspect/ replace cables (if required).	
<b>Ajax348</b>	Inspect/ replace pick up coil (if required).	
<b>Ajax349</b>	Inspect/ replace ignition coil (if required).	

<b>Ajax350</b>	Inspect/ replace alternator (if required).	
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<b>9- Other Jobs:</b>		
<b>ACTIVITY</b>	<b>DESCRIPTION</b>	<b>REMARKS</b>
<b>Ajax351</b>	Proper Cleaning of Fly wheel.	
<b>Ajax352</b>	Complete cleaning of Compressor & skid	
<b>Ajax353</b>	Startup of Compressor after completion of job.	
<b>Ajax354</b>	Adjustment of Firing timing (if required).	
<b>Ajax355</b>	Load testing.	
<b>Ajax356</b>	Housekeeping of area after job completion.	
<b>Ajax357</b>	Tightening of Foundation Bolts	

## **TERMS & CONDITIONS**

### **GENERAL:**

1. Technical services are required for Annual Maintenance of 03 No's Ajax integral-engine compressors of Chanda Plant for an estimated period of **07 days tentatively schedule from 02-07-2023 to 09-07-2023**; however, the schedule and duration of maintenance job is subject to change.
2. **Bids are required in PKR against each activity as mentioned in the scope of work. Detail of jobs (scope of work) is elaborated in tender documents.**
3. Working hours will be considered 24 Hrs. with 02 shifts (12 Hrs. day shift & 12 Hrs. night shift). Sunday/holiday will be considered as normal working day.
4. Payment will be made as per actual work done through cross cheque after completion of the job and verification by OGDCL rep. at site.
5. Skilled manpower should be well experienced in their respective crafts.
6. Management of the plant reserves the right to terminate the services of any hired staff at any time without any justification.

7. HSEQ Rules & Regulations will be strictly observed. 01 HSEQ Officer must be present in ATA team.
8. All the participating companies should have experience of working on Ajax compressors. (reference should be provided)
9. Jobs will be carried out as per priority set by OGDCL supervisors and contractor will utilize all its resources to complete the jobs as per time frame given by OGDCL.
10. OGDCL may delete, add or change any type of activity given in the scope of work.
11. The technical manpower must be skilled, having at least five years' experience in respective trade. Skilled manpower will be interviewed by OGDCL professionals in all disciplines, if deemed necessary and contractor should arrange the interview at their premises. Detailed CV's of direct manpower/supervisors is mandatory.
12. Use of mobile phone and camera is prohibited in the plant premises.
13. Any required technical clarification/detail regarding scope of work should be cleared before submission of bid. No change in substance of bid will be entertained after bid submission date.
14. The bidders should have valid NTN and GST numbers, and have active status on FBR website. The bidders should be registered in KPK for sales tax, KPST, etc.
15. Contractor shall provide FBR "Annex C" with submitted status along with Professional Tax Certificate for release of payment.

#### **CONTRACTOR RESPONSIBILITIES:**

1. Site administration personnel with associated resources like computer, printers, photocopiers etc.
2. Providing PPEs (Safety helmet, Coverall, Safety shoes, Gloves, etc.) of all kinds to hired crew.
3. CVs of all the skilled Personnel will be provided well before ATA. Evaluation of all the short listed skilled personnel will be carried out by Field personnel well before the ATA.
4. All kind of Tools required for the job.
5. Provision of all type of Rigging and hoisting equipment.
6. Scaffolding material & Services.
7. Removal of Insulation/ Cladding & Installing back by skilled Insulator.
8. Security of all the Hired Crew.

9. Boarding/ Lodging, refreshment of all the Crew.
10. Pick and drop from Plant to accommodation and back.
11. In case of any accident, medical treatment or compensation, whichever is applicable.
12. Electrical Supply Boards along with cables as per HSE standard.
13. Head trolley for movement of parts inside the Plant will be arranged by the Contractor
14. Arrangement of Pipes & Fitting for vessel flushing.
15. Proper housekeeping & skids cleaning of all equipment must be ensured.
16. Contractor has to provide proof of complete vaccination of all crew members.
17. After completion of job 48 hours test run on load is to be performed by contractor.

**OGDCL RESPONSIBILITIES:**

1. Electricity for Lighting & Fan.
2. Spare parts.
3. Blinds & Spades for Isolation & Pressure Testing.
4. Logistic support i.e. Cranes & Lifters.
5. Nitrogen purging & Leak test.