

OIL AND GAS DEVELOPMENT COMPANY LIMITED
Chanda LPG Plant

SCHEDULE OF REQUIREMENT

TENDER ENQUIRY # TE/COF/M/01/2022

Technical services for Preventive 8000hrs Maintenance of 03 No's Ajax Integral-Engine Compressors, and Installation & commissioning of Upgrade kits on HP & MP Units during maintenance at Chanda LPG Plant.

S#	<u>Description</u>	<u>Reference #</u>	<u>Rate</u>	<u>Total rate (inclusive of all Taxes)</u>	<u>Deviation</u>
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:

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

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

4- Power Cylinder Assembly:

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

5- Compressor Cylinder Assembly:

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

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

6- Fuel System:

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

7- Air Intake System:

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

8- Ignition System:

ACTIVITY	DESCRIPTION	REMARKS
Ajax346	Inspect/ replace spark plugs (if required).	
Ajax347	Inspect/ replace cables (if required).	

Ajax348	Inspect/ replace pick up coil (if required).	
Ajax349	Inspect/ replace ignition coil (if required).	
Ajax350	Inspect/ replace alternator (if required).	

9- Other Jobs:

ACTIVITY	DESCRIPTION	REMARKS
Ajax351	Proper Cleaning of Fly wheel.	
Ajax352	Complete cleaning of Compressor & skid	
Ajax353	Startup of Compressor after completion of job.	
Ajax354	Adjustment of Firing timing (if required).	
Ajax355	Load testing.	
Ajax356	Housekeeping of area after job completion.	
Ajax357	Tightening of Foundation Bolts	

10. HP & MP Unit Upgrades Installation Job:

ACTIVITY	DESCRIPTION	REMARKS
Ajax351	Installation of 440 RPM upgrade kit 01 Each	
Ajax352	Installation of IGTB Governor Kit 01 Each	
Ajax353	Installation of new Fuel Injection Cartridges 03 Each	
Ajax354	Installation of new Flexible Fuel Header 02 no's (MP&HP)	
Ajax355	Installation of Scavenging Valves 03 Each	
Ajax356	Pre-start-up checks	
Ajax357	Commissioning of upgrades and unit start-up	

Ajax358	Any additional work identified on field for Completion of upgrades Installation job.	
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TERMS & CONDITIONS

GENERAL:

1. Technical services are required for 8000hr Maintenance of 03 No's Ajax integral-engine compressors during maintenance of Chanda Plant for an estimated period of **07 days tentatively scheduled in june-2022**; however the schedule and duration of shut down 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 (Ajax Compressors maintenance).**
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 maintenance activity.
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 maintenance. Evaluation of all the short listed skilled personnel will be carried out by Field personnel well before the maintenance.
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 72 hours test run on load is to be performed by contractor.

OGDCL RESPONSIBILITIES:

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