

**OIL & GAS DEVELOPMENT COMPANY LIMITED**  
**PROCUREMENT DEPARTMENT, ISLAMABAD**  
**FOREIGN SECTION A**

(To be completed, filled in, signed  
and stamped by the principal)

**ANNEXURE 'A'**

**Material** AIR INTAKE FILTERS FOR GAS TURBINES  
**Tender Enquiry No** PROC-FA/CB/P&P/KPD-4931/2020  
**Due Date**  
**Evaluation Criteria** FULL

**SCHEDULE OF REQUIREMENT**

Sr No	Description	Unit	Quantity	Unit Price (FOB)	Total Price (FOB)	Unit Price C & F BY SEA	Total Price C & F BY SEA	Deviated From Tender Spec. If Any
1	FILTER CARTRIDGE, EFFICIENCY / GRADE: F9, AS PER EN779:2012, SIZE (MM): 324 DIA 890 LENGTH, FOR GAS TURBINE MODEL "UGT 6000 DT71" AS PER ATTACHED TOR.	Number	476					

**Note:**

- 1. Bid Bond Amount:** US \$ 1200/= (United States Dollar One Thousand and Two Hundred Only) or equivalent Pak Rupees
- 2. Mode of Bidding:** Single stage two Envelope basis.
- 3. Evaluation Criteria:** - Full Consignment wise C&F By Sea
- 4. Delivery Period:** 120 days from establishment of LC
- 5. Bid Validity:** 150 Days
- 6. Bidders are advised to carefully read all the terms and conditions of the Tender Document available on OGDCL website which is an integral part of this Schedule of Requirement**



**OIL & GAS DEVELOPMENT COMPANY LTD**

**TOR FOR**

**AIR INTAKE FILTERS FOR GAS TURBINES**

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## 1. INTRODUCTION

Oil and Gas Development Company Ltd (OGDCL) is Pakistan's National Oil & Gas Exploration and Production Company. OGDCL is currently operating Country's largest Oil & Gas sector including saleable Oil & Gas Processing Plants.

Kunnar-Pasakhi-Deep and Tando-Allah-Yar (KPD-TAY) is a Gas & LPG Processing Plant, located in Hyderabad District about 40 km away from Hyderabad and approx. 195 km from Karachi, Sindh Province of Pakistan. The Plant is comprised of two gas processing trains installed in the close proximity of oil wells. The processing plant is connected with the wells through gas gathering network which terminates into slug catcher at the process plant premises.

### 1.1. DEFINITIONS

Owner /Company : Oil & Gas Development Company Limited (OGDCL)  
Supplier /Contractor : Parties, which vendors and / or supplies material, equipment and services to perform the duties as specified by Company in the scope of supply.

### 1.2. ERRORS OR OMISSIONS

1.2.1 Review and comment by the Company at any Contractor / Supplier's drawings, procedures or documents shall only indicate acceptance of general requirements and shall not relieve the Contractor / Supplier of its obligations to comply with the requirements of this specification and other related parts of the contract documents.

1.2.2 Any errors or omissions noted by the Contractor / Supplier in this Specification shall be immediately brought to the attention of the Company.

### 1.3. CONFLICTING REQUIREMENTS.

In the event of conflict, inconsistency or ambiguity between this Specifications, National Codes & Standards referenced in this Specification or any other documents, the Contractor/ Supplier shall refer to the Company whose decision shall prevail.

## 2. SCOPE OF SUPPLY & TECHNICAL SPECIFICATIONS.

### 2.1 INTAKE AND VENTILATION AIR FILTERS FOR GAS TURBINES

Filter Cartridge Efficiency: F9,  
Size (mm): 324 DIA, Length: 890  
Inclusive of Top cover cone type seal, Top cover: Rectangular shape; Bottom: Closed  
Total Quantity: 595 Numbers

These Filter elements are required for 03 Nos. Gas Turbines.

Manufacturer: M/S Zorya Mashproekt, Model: UGT6000i

Frame Sr. Nos: A2T717042, AT718045, A2T718043

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## 2.2 MAIN TECHNICAL PARAMETERS OF AIR INTAKE FILTRATION SYSTEM OF GAS TURBINE.

- In accordance with EN779-2012;
- Combustion rated air intake volume: 31.4Kg/s,
- Ventilation Filter air intake volume 17.5 Kg/s;
- Combustion filter cartridge filter class: F9, quantity: 77pcs, Ventilation Filter House: Filter Cartridge Grade: F9, Quantity: 42pcs; Total Numbers of Filters per Gas Turbine: 77+42= 119, air flow of each group: 1450 M<sup>3</sup>/h
- Initial resistance of combustion filter: <230Pa;
- Final resistance: 350 Pa~700 Pa (Adjustable);
- Filter has independent control system;
- Service life of filter house: <20 years
- Service life of filter cartridge: 8000-13000h
- 0.6-0.8MPa, normal atmospheric temperature, no oil and dust. No. of Pleats: 300
- Square Flange, End Cap and Screen must be of hot dip galvanized steel in line with ASTM A123. Filter Testing / Certification Requirements: as per EN779-2012

## 2.3 MAIN TECHNICAL DATES OF PULSE CLEANING

- Pulse Cleaning start up value set: 350Pa~700Pa (adjustable) Default: 600Pa.
- Pulse Cleaning stop value set: 1~10 times (adjustable); Default: 5 times.
- Pulse Cleaning cycle: 15~30 seconds (adjustable); Default: 30s.
- Pulse Cleaning turn on time: 0.04~0.2 seconds (adjustable); Default: 0.1s.

## 3. ENVIRONMENTAL CONDITIONS.

These filter elements will be utilized at KPD-TAY plant which is situated near Tando Jam, Hyderabad Sindh Pakistan. The general environment is dusty further detail is as below.

### 3.1 Ambient Temperature Data

Ambient Temperature, Minimum Average:	64 °F (18° C)
Ambient Temperature, Maximum Average:	93 °F (34° C)
Ambient Temperature, Maximum:	118 °F (48° C)
Ambient Temperature, Minimum:	36 °F (2.2° C)
Wet Bulb Temperature:	88 °F (31 °C)

### 3.2 Rainfall Data

Maximum Daily Rainfall (24 hours):	10 in (251 mm)
Highest Average Monthly Rainfall:	11.26 in (286 mm)

### 3.3 Wind Data

Maximum Velocity:	100 mph
Design Velocity:	100 mph
Exposure factor C – flat open terrain, importance factor 1.15 – essential facility.	

### 3.4 Humidity

Relative Humidity:	20% to 77%
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3.5 Ice/Frost Data  
Not applicable.

3.6 Elevation  
69 ft. (21 m)

3.7 Earthquake Design Data  
Zone 2A of Uniform Building Code UBC 1997.

4. TERMS & CONDITIONS.

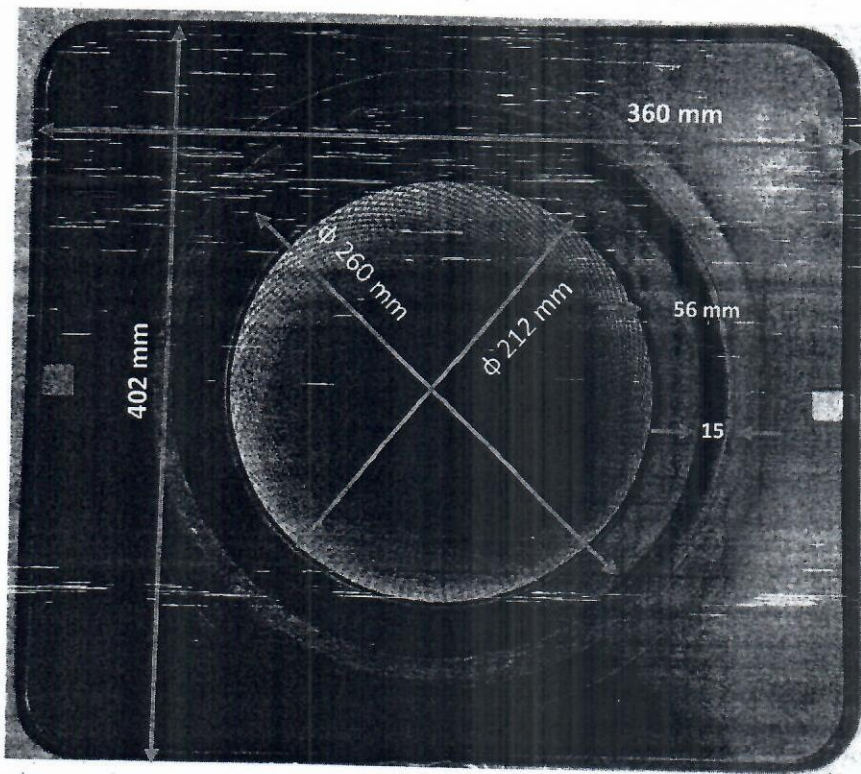
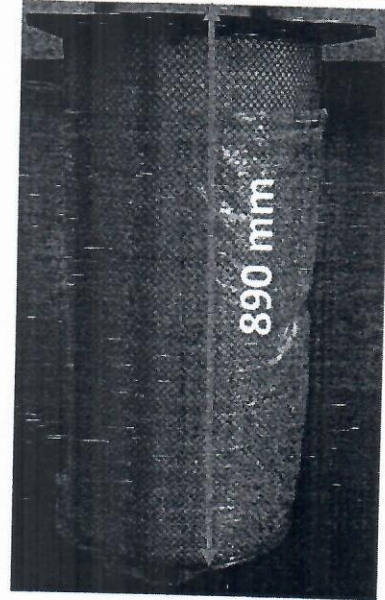
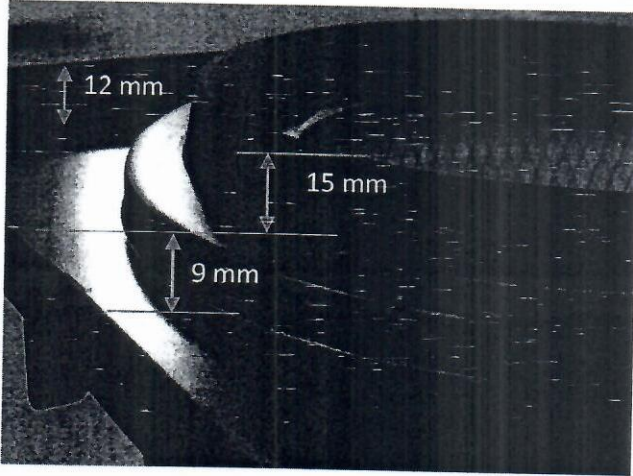
- a. Bidder must have minimum 10 years of experience in manufacturing of air intake filters of gas turbines. Bidder must provide relevant document to prove the experience & evidence that supplied filters are being used in the gas turbines.
- b. Bidder shall provide the list of companies & Gas Turbine details at which their filter elements are being used.
- c. Bidder to confirm that filter media shall be preferably European / USA Origin and 3<sup>rd</sup> party verified MTCs of Filter Media must be provided prior to delivery.
- d. In order to rule out any dimensional discrepancy successful bidder or his local representative may visit KPD-TAY plant site before starting of filter manufacturing (if deem necessary).
- e. Bidder to confirm that 3<sup>rd</sup> party verified Filter Test Certificates as per EN779-2012 by renowned independent 3<sup>rd</sup> Party lab, specialized and certified for captioned testing must be provided before delivery. Complete Test procedure including 3<sup>rd</sup> party calibration certifications of testing rig, measuring instruments and test media must also be provided along with test report. Any deviations / exceptions noted during test will also be made part of report. OGDCL (if deemed necessary) may ask for witness of captioned test for which schedule to be shared at least 10 weeks in advance to make necessary boarding & lodging arrangements by Company itself.
- f. Bidder shall guaranty the service life of filter cartridge not less than two years or continuous operation of turbine 8000-13000 running hours at mentioned working environment.
- g. Bidder to confirm in their proposal that Square Flange, End Cap and Screen will be of hot dip galvanized steel in line with ASTM A123 (latest revision) requirements. Bidder to provide galvanization procedure as well as batch testing / quality control plan for coating thickness, adherence, and finishing in line with ASTM A123 (latest revision).
- h. Bidder to confirm that Each filter will be packed in secure and seaworthy robust packing (preferably of hard cardboard), stacked on pellets for easy transportation and handling, tied and wrapped with polythene or equivalent sheet capable of securing from humidity / rain water ingress. Handling instructions along with symbols also to be pasted on each pallet packing.
- i. Filter elements must be new & free from any defect.
- j. Filter elements must have standard OEM warranty/guarantee as per OGDCL tender requirement.
- k. Bidder to confirm that proposed filter elements would be 100% replacement of specified filters with same efficiency, fits & tolerances. Bidder has to provide the literature and relevant documents regarding equivalent Filter elements. Bidder must provide the detailed drawing(s), technical specification(s), data sheets and documentary evidence / proof that supplied Filter elements are exact replacement of Filter elements specified in this documents.
- l. If bidder found any ambiguity in specification, dimension or any technical detail / data, it should be clarified prior to bid submission.
- m. Bidder shall also provide the satisfactory performance certificate from at least two end users utilizing bidder's gas turbine combustion air intake filters.



n. Delivery period must not exceed 90-100 days.

5. **DIMENSIONAL DETAIL**

In order to understand the shape, fits & tolerance, please refer below sketch. Bidder should ensure sealing & mounting as per below sketch. Acceptance of minor dimensional deviation will be sole discretion of OGDCL keeping in view the surety of efficiency & performance, provided that it's fitting / mounting & complete sealing at the existing panel of air filters shall not be compromised.



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