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### For Our Clients in Libya

50Nm3 / h 93±2% PSA oxygen generation system

PSA-02 technical proposal

# شركة ميزة للإستيراد والتصدير Miza Company For Import & Export



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### Overall structure of oxygen generator:

Equipment flow chart



#### Functions of oxygen plant:

- 1. Valve switching is automatically controlled by PLC;
- 2. On line monitoring of oxygen purity;
- 3. Adjustable oxygen flow;
- 4. Oxygen pressure adjustable;
- $5. \, Reserve \, the \, communication \, interface \, (RS485) \, of \, PLC \, to \, communicate \, with \, the \, buyer's \, upper \, computer.$



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| BWFY-50 | /93±2 | oxygen | generator |
|---------|-------|--------|-----------|

| Item                   | Equipment name          | 1  | Performance, parameters   | Picture   | number | Price (USD) |
|------------------------|-------------------------|--|---|-----------|--------|-------------|
| 1.<br>air              | Screw air<br>compressor | 2. Model: JP-<br>3. Exhaust pr<br>4. Exhaust vo<br>5. Cooling mo<br>6. Motor pow | ressure: 8bar<br>blume: 15.0m3/min<br>ode: air cooling  | the Table | 1      | 9063.00     |
|                        | Air buffer tank         | C-1.5/8  | 1.Volume: 1.5m3 2.Working pressure: 8bar Including: pressure vessel certificate, safety valve, blowdown valve, pressure gauge |           | 2      | 1250.00     |
|                        | Oil separator           | XF9-40   |   |           | 1      | 156.00      |
| 2.<br>Air purification | Fine filter             | XF7-40   | 1 " 111 "   |           | 1      | 156.00      |

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| Freeze       | dryer               | SL-125AC | 1.flow:15.1m3/min 2.working pressure:10bar 3.dew point:-20°C~~-60°C 4.oil content:<0.001ppm 5.dust particles:<0.01um | 1 | 1875.00 |
|--------------|---------------------|----------|--|---|---------|
| Dust fi      | ne filter           | XF5-40   | 6.power suppiy:3.5KW 380V/50Hz 3phase 7.filter element form land(USA),life time≥6000h 8.Includes: automatic drainer  | 1 | 156.00  |
| Carbor       | n filter            | XF3-40   | 9.Remove moisture from the air   | 1 | 156.00  |
| Micro adsorp | heat<br>btion dryer | SL-30    | All  | 1 | 3813.00 |
|              | 1110                | 3110     | J. 13 . 13 1 23  |   |         |



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| 4.<br>Oxygen storage<br>tank | C-1.0/8                                      | 1.Volume: 1.0m3 2.Working pressure: 8bar Including: pressure vessel certificate, safety valve, blowdown valve, pressure gauge | 1 | 469.00   |
|------------------------------|--|---|---|----------|
|                              | Sterilization filter                         | Sterilization precision: 99.9999%<br>Material: 304 stainless steel<br>Sterilization and precision are a<br>group              | 1 | 785.00   |
|                              | Oxygen concentration detector                | Siemens Germany P950  |   |          |
| generator                    | System power                                 | 200w  |   |          |
| Oxygen<br>generator          | Power supply                                 | 380V/50Hz   |   |          |
| 3.                           | Dew point                                    | ≤-45°C  | 1 | 26624.00 |
|                              | Outlet pressure                              | ≤ 4bar  |   |          |
|                              | Oxygen concentration Flow measurement method | ≥ 93%<br>Rotameter  |   |          |
|                              | Oxygen flow                                  | 50Nm3/h   |   |          |

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| 5.<br>Oxygen<br>booster | WWZ-50/3-200                       | 1. Structure: no oil lubrication 2. Power supply voltage: 380V / 50Hz 3. Rated flow: 50nm ³ / h 4. Rated air inlet pressure: 0.3MPa 5. Rated exhaust pressure: 20MPa 6. Cooling mode: air cooling 7. Lubrication method: seal grease lubrication 8. Motor power: 22kw | 1 | 21500.00 |
|-------------------------|------------------------------------|---|---|----------|
| 6.<br>filling system    | HL-10                              | 1. Working pressure: 20MPa<br>2. Filling interface:1X10   | 1 | 1250.00  |
| 8.<br>filter element    | Six thousand hours, four at a time |   | 8 | 965.00   |

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| 9.<br>Oil filter             | Form a complete set of original, $$ It takes $1$ for maintenance                                    |     | 4 | 136.00              |
|------------------------------|---|-----|---|---------------------|
| 10.<br>Air filter core       | Form a complete set of original. It takes 1 for maintenance   | No. | 4 | 198.00              |
| 11.<br>Oil fine<br>separator | Form a complete set of original. It<br>takes 1 for<br>maintenance. No<br>need for the first<br>time |     | 3 | <mark>225.00</mark> |

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12.
Booster set

Form a complete set of original.
Grease, piston ring, guide ring

1

765.00

 $Total\ price\ of\ equipment:\ {\color{blue}USD69542.00/set\ FOB\ Shanghai} (Including\ wooden\ case\ package)$ 

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#### Appendix 1 technical documents

equipment process flow diagram, mechanical general assembly drawing, electrical schematic diagram, electrical wiring diagram and operation manual

technical documents, packing list and certificate of conformity (the above information shall be provided with the machine)

Equipment configuration sterilization

#### Maintenance cycle:

- 1. The air compressor should be maintained for 500 hours for the first time, and then for 3000 hours. The oil, filter and air filter should be changed,
- 2. Replace 4 filter elements every 6000 hours,
- 3. Replace the molecular sieve of oxygen generator in 5-7 years, depending on the purity of oxygen. Replace the molecular sieve

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4. Maintain the oxygen supercharger every 3000 hours, change the piston ring, guide ring, add grease, etc

### Maintenance cycle:

- 1. The air compressor shall be maintained for 500 hours for the first time, and then maintained every 3000 hours. The oil, mechanical filter and air filter shall be changed, 2 and 4 filter elements should be replaced once every 4000 hours,
- 3. Replace the molecular sieve of oxygen generator in 5-7 years, depending on the purity of oxygen
- 4. Maintain the oxygen booster once every 3000 hours, change piston ring, guide ring, add grease, etc
- 2. Payment method:

A. 30% of the total contract price shall be paid as a down payment within one week after the



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contract comes into force.

B. after the completion of equipment processing and manufacturing, Party A shall pay 70% of the total contract price as the delivery payment after passing the pre delivery inspection and meeting the delivery conditions.

3. Production cycle and delivery method:

Within 30 days after receiving the advance payment, provide the complete set of equipment under the contract. The equipment shall be transported to the place designated by the user or taken by both parties through negotiation.

4. Test and assessment

In the opinion of commissioning engineers of both parties, the equipment shall be inspected and accepted when it is in normal operation after commissioning. (debugging cost of foreign equipment shall be calculated separately)

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#### Main technical parameters of oxygen system

1) Technical index of product gas:

Oxygen flow: 50nm3 / h Oxygen purity: 93%

Dew point: ≤ - 40 °C(normal pressure)

Outlet pressure: ≤ 0.4MPa (adjustable)

- 2) Technical specifications of main split equipment of oxygen system:
- 1. PSA PSA oxygen generation system:
  - (1) One energy saving screw air compressor 1 set

| Brand:                    | Shanghaijianpa |
|---------------------------|----------------|
| Discharge pressure (MPA)  | 0.8            |
| Exhaust volume (m3 / min) | 16.0           |



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| Cooling mode                       | Air cooling               |
|------------------------------------|---------------------------|
| Motor power (kw)                   | 90                        |
| Power supply (V / pH / Hz)         | Three phase 380 V / 50 Hz |
| Noise value (DBA)                  | 70                        |
| Unit weight (kg)                   | 2000                      |
| Overall dimension (L × w × h) (mm) | 2050X1350X1550            |

### (2) 1 air buffer tank 1 set

| Brand:            | Puyang Ruide |
|-------------------|--------------|
| Volume:           | 1.0m3        |
| working pressure: | 0.8MPa       |
| Size:             | Ф800Х2100mm  |

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| Weight:  | 150Kg |  |  |
|--|-------|--|--|
| Including pressure vessel certificate, safety valve, blowdown valve and pressure gauge |       |  |  |

### (3) Primary filter (with drainer and hankson filter element) 1 set

| Brand:                 | Wuxi Yineng (hankson filter element) |  |
|------------------------|--------------------------------------|--|
| model:                 | XF9-44                               |  |
| Treatment capacity:    | 18m3/min                             |  |
| Degreasing accuracy:   | Зррт                                 |  |
| Dust removal accuracy: | 3µт                                  |  |

### (4) 1 freezing dryer 1 set

| Brand:          | Suzhouqinkui     |
|-----------------|------------------|
| model:          | SL-150AC         |
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| Treatment capacity: | 18m3/min         |  |
|---------------------|------------------|--|
| Pressure dew point: | 2-10°C           |  |
| Installed power:    | 3.5KW            |  |
| Power Supply:       | 380V/50Hz        |  |
| Dimensions:         | 1300×1100×1400mm |  |
| Weight:             | 190Kg            |  |

#### (6) Main pipeline filter (with drainer and hankson filter element) 1 set

| Brand:              | Wuxi Yineng (hankson filter element) |  |
|---------------------|--------------------------------------|--|
| model:              | XF7-44                               |  |
| Treatment capacity: | 18m3/min                             |  |

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| Degreasing accuracy:   | 1ppm |
|------------------------|------|
| Dust removal accuracy: | 1μm  |

### (7) Ultra precision filter (with drainer and hankson filter element) 1 set

| Brand:                 | Wuxi Yineng (hankson filter element) |  |
|------------------------|--------------------------------------|--|
| model:                 | XF5-44                               |  |
| Treatment capacity:    | 18m3/min                             |  |
| Degreasing accuracy:   | 0.1ppm                               |  |
| Dust removal accuracy: | 0.1µm                                |  |

#### (8) Dust filter (hankson filter element) 1 set

| 1 |        |                                      |
|---|--------|--------------------------------------|
|   | Brand: | Wuxi Yineng (hankson filter element) |

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| model:                 | XF3-44   |  |
|------------------------|----------|--|
| Treatment capacity:    | 18m3/min |  |
| Dust removal accuracy: | 0.1µm    |  |

#### (9) BWfy-50 / 93 energy saving PSA oxygen generator 1 set

| Brand:            | Nanjing Bangwin                 |  |
|-------------------|---------------------------------|--|
| model:            | BWFY-50/93                      |  |
| Oxygen flow rate: | 50Nm3/h                         |  |
| Oxygen purity:    | 93%                             |  |
| Oxygen dew point: | ≤ - 40 °C(atmospheric pressure) |  |
| Outlet pressure:  | ≤ 0.4MPa (adjustable)           |  |
| Power supply:     | 2Ф220V/60Hz 0.2KW               |  |

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(10) One oxygen storage tank 1 set

| Brand:            | Puyang Ruide |  |
|-------------------|--------------|--|
| Volume:           | 1.0m3        |  |
| working pressure: | 0.80MPa      |  |
| Size:             | Ф800X2100mm  |  |
| Weight:           | 150Kg        |  |

#### (11) One oxygen booster 1 set

| model            | WWZ-50/3-200         | 100 | Compressor speed | 550r/min      |
|------------------|----------------------|-----|------------------|---------------|
| structural style | Oil free lubrication | 1   | Cooling mode     | water-cooling |

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| supply voltage           | Three phase 380 V / 50 Hz | Lubrication mode  | Sealing grease<br>lubrication |
|--------------------------|---------------------------|-------------------|-------------------------------|
| Rated flow               | 50Nm³/h                   | Motor power       | 15kw                          |
| Rated pressure admission | 0.3MPa                    | Overall dimension | 1250X900X125<br>0             |
| Rated discharge pressure | 20MPa                     | weight            | 700kg                         |

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### Supply contents of the scheme

| screw compressor                 | JP-100A                    | 1          | Shanghaijianpa                               |
|----------------------------------|----------------------------|------------|--|
| Air buffer tank                  | 1.5m³/0.8MPa               | 2          | Puyang Derui                                 |
| Freeze dryer                     | SL-125AC                   | 1          | Bangwin matching                             |
| Micro heat adsorption dryer      | SL-125                     | 1          | Bangwin matching                             |
| FC main line filter              | Built in automatic drainer | 1          | 100  |
| FT micro oil filter              | Built in automatic drainer | 1          | Hankson filter element                       |
| FA ultra high efficiency filter  | Built in automatic drainer | 1          | 7  |
| FH fine dust filter              | Built in automatic drainer | i          |  |
| > 50Nm3 / h 93% energy saving PS | A oxygen generator         | 3          |  |
| Special adsorber                 | DN400                      | 2          | made by professional pressure vessel factory |
| molecular sieve                  | XP                         | sufficient | UOP, USA                                     |



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| Hold down device                  | Hitler introduced technology | 2 | Patent of German Kapo company   |
|-----------------------------------|------------------------------|---|---------------------------------|
| Pneumatic program control valve   | C2000                        | 1 | Provided by Bangwin             |
| Pilot solenoid valve              | 4V210-8                      | 1 | Yadeke, Taiwan                  |
| PLC controller                    | \$7-200                      | 1 | Siemens, Germany                |
| DC 24 V power supply              | 220V-24V                     | 1 | Mingwei, Taiwan                 |
| Electronic control part           | XT                           | 1 | Bangwin                         |
| Touch industrial computer         | MCGS                         | 1 | Kunlun Tongtai                  |
| Single air source processing unit | 2000-01                      | 1 | Shenchi pneumatic               |
| Oxygen analyzer                   | P860-4N                      | 1 | Shanghai ChangAi                |
| Sampling pressure reducing valve  | 2000-02                      | 1 | Shenchi pneumatic               |
| Muffler                           | QYFD-50                      | 1 | Produced by Bangwin             |
| Oxygen storage tank               | 1.0/0.8                      | 1 | Puyang Derui                    |
| Sterilization filter              | MJ-1                         | 1 | Bangwin matching                |
| Oxygen flowmeter                  | LZZ-50                       | 1 | Hongqian instrument             |
| Pressure gauge                    | Y80ZT                        | 2 | Fuyang Huake Instrument Factory |
| Oxygen booster                    | WWZ-50/3-200                 | 1 | Anshanlibang                    |
| Filling row                       | BW                           | 1 | Bangwin matching                |
| Base frame                        | BWFD-50                      | 1 | Produced by Bangwin             |
| Other valves and pipes            | BWFD-50                      | 1 | Produced by Bangwin             |

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