

ANNEX-B-TECHNICAL SPECIFICATION OF DUPLEX OXYGEN GENERATOR

		Diagram No
Pressure Swing Adsorption (PSA) Duplex Oxygen Generator	Produces oxygen from compressed air, microprocessor-controlled system, Comprising of Screw Air compressor along with Vertical air receiver and refrigerated air dryer Compressed air filters and accessories	
System Capacity:	Minimum 35Nm ³ /hrX2. at 93% ±3% medical oxygen purity and not less than 5-6 bar outlet pressure at 1400 meters above sea level and ambient temperature conditions of + 0° C to + 40° C., Relative humidity max.: 80%.	6
Duplex System	Two Generator and two Air Compressors should be run in automatically alternative system.	
Oxygen dew point:	-40°C.	
Air Tank Capacity:	Should have one set of Air Tank made of Mild/Carbon Steel having food grade epoxy coating of capacity 3000L (Tested to 11 Bar) with inlet and outlet valves, safety valve, pressure gauge and level sensing auto drain valve.	5
Oxygen Tank Capacity:	Should have one set of Oxygen Tank made of Mild/Carbon Steel having food grade epoxy coating of capacity 3000L (Tested to 11 Bar) with inlet and outlet valves, safety valve, pressure gauge and level	7
Inlet pressure:	6-7 bar, Outlet pressure: 5-6 bar	
Oxygen Purity:	93% +-3%	
Display:	Display should have color touch Control, digital, numeric keys, alarm indications, It should have Digital Display indicating Failure, LCD display, Records at least 24 hrs. Operation data. Should have automatic	
Audio/visual alarm	Visual alarm is active whenever an alarm is present in the system. Audio will turn ON when an alarm appears but can be turned off from panel.	
	Must have non-corrosive materials, like aluminum and stainless steel, as standard for all process components	
Air Compressors	Two Air Compressors should be run in automatically alternative system	1
Air Dryer	2 x Air Dryer (Refrigerant) (Two Set): There should be two set of refrigerant type suitable capacity air dryer with dew point of +3 o C. Micro Processor based. It should be with level sensing auto drain valve, Integral Heat Exchanger, Eco Friendly Gas only	
Air Cooled	Should have rotary screw type and Air Cooled	
Filter	Should have built-in Oil Separator and Air Filter. Controls should be Suction Throttle valve type with On-off line control & Motor stopper start control	
Noise Level	(at 1.5 meter in front) should not be more than 70 db.	
Air quality specification:	Air quality after air dryer and filters should meet the ISO 8573.1:2010.2.4.1. Dew Point - 40°C. Filtration Grade 0.01 micron. (As standard US& European pharmacopeia)	
Filters package	(Two Set)	

	Three stage air filters to remove the dust, oil and other impurities in the compressed air.	3,4,8
Cyclone filter with auto drain-	1 set	
Prefilled & Micro filter for filtration	level up to 0.1 micron with auto drain -1 set	
Micron filter	with auto drain-1 set	
Coalescing Filter	1 set	
Bacterial / Sterile Filter	1 set	
Coal Tower made of mild steel with food grade epoxy coating for air purity and bacterial filtration	1 set	
Activated carbon filter for oil and dust removal	0.01mg/m2	
Booster Compressor	(Qty-01)	
Booster Comprssor Capacity:	5 m3/hr. Compactable for duplex system	10
Output pressure	150 Bar	
Filling Ramp	2X4 Tube Ramp	11
Standards for Oxygen Plant:		
For Tanks	AIR & Oxygen	
ASME or PED Certification	Mandatory	
For Plant CE Certification	Mandatory	
	ISO 9001:2015	
	ISO 14001: 2015	
	ISO 13485:2016	
System configuration / Design:	Bidder have such HTM certified team to carry installation of the plant.	
Vacuum Insulated Evaporated Tank for Backup Purpose:	The bidder shall be responsible for providing of Vacuum Insulated Evaporated tank, in case of breakdown, for continuity of oxygen supply (by means of cylinder or back up equipment) in the	
Capacity:	3000 Liter	
Control Panel	Automatic Electrical Control Panel for two Air Compressor and accessories	
	It should have color touch screen control panel	
	The control panel display should show operating and measurement values for purity, outlet pressure, Inlet pressure, Row meter, Temperature, operating hours, sensor values and display of trends.	
	Should have alarm management with audit trail for raised alarms & alarm notification with automatic push e-mail/ SMS and remote desktop notification	
	It should also have automatic service reminder for periodic maintenance due	

Alarm pack Relay	It should have Low pressure product, Quick stop / E-Stop, Low pressure columns, Alarm on air compressor, Alarm on air dryer, Purity alarm, and Purity stop	
Main Electrical Control Panel:	Fully automatic electric Control Panel consisting of all the MCCB's, MCB's, Digital Timer Phase Sequencer, automatic Hi/Low voltage control relay and Switches etc. must be provided. Phase reversal and phase failure All the main components and equipment of oxygen generator plant should be	
Other Items:	Oxygen flow meter and internal pipes and valves	
Power Supply:	230V/400V, 1 & 3 phase, 50Hz	
Accessories:	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the	
	Plant should be supplied with Ethernet connection to main central control system. Alarm management and password-controlled access for different levels of the program & SMS	
	The oxygen generation system must with an integrated designed air dew point monitor which can remotely monitoring and alarming the dew point of the compressed air to ensure the dry air get into the oxygen generator and protect the Zeolite inside the oxygen generator.	
	The oxygen generation system must with Cloud service system; hospital representatives can remotely monitor the operation situation of the system through an APP in Android smart mobile phone.	
User Training	Service training to maintenance staffs at the operation site for at least one week by factory trained engineers/technicians	
	User/Technical training should be provided on site operators / technicians. The supplier company should provide training for operation and maintenance system to the hospital staff from the successful date of testing and commissioning of the system without any extra cost.	
Warranty	Comprehensive warranty for 5 years with parts, Consumables, Maintenance and Services.	
Authorization	Authorization certificate from manufacturer shall be required along with the bid documents and after sales service must be locally available.	
Warranty Period	5 Years Maintenance Service During Warranty Period	
	During the warranty period supplier must ensure corrective / breakdown maintenance whenever required.	

Installation and Commissioning	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail	
Documentation	User (Operating) manual in English	
	Service (Technical / Maintenance) manual in English	
	Certificate of calibration and inspection from factory	
Delivery and Installation on DAP:	Balochistan Institute of Nephro-Urology Quetta - BINUQ, Quetta	

Concept

