



SAFHE 2026

SOUTHERN AFRICAN
HEALTHCARE CONFERENCE

SYNERGY
IN ACTION:

SHAPING THE FUTURE OF
HEALTHCARE TOGETHER



9 – 10 JUNE 2026



CTICC 2 CAPE TOWN

PCI Gases' Solar Powered Containerized Medical Oxygen Generator in Low-Resource Settings in South Africa

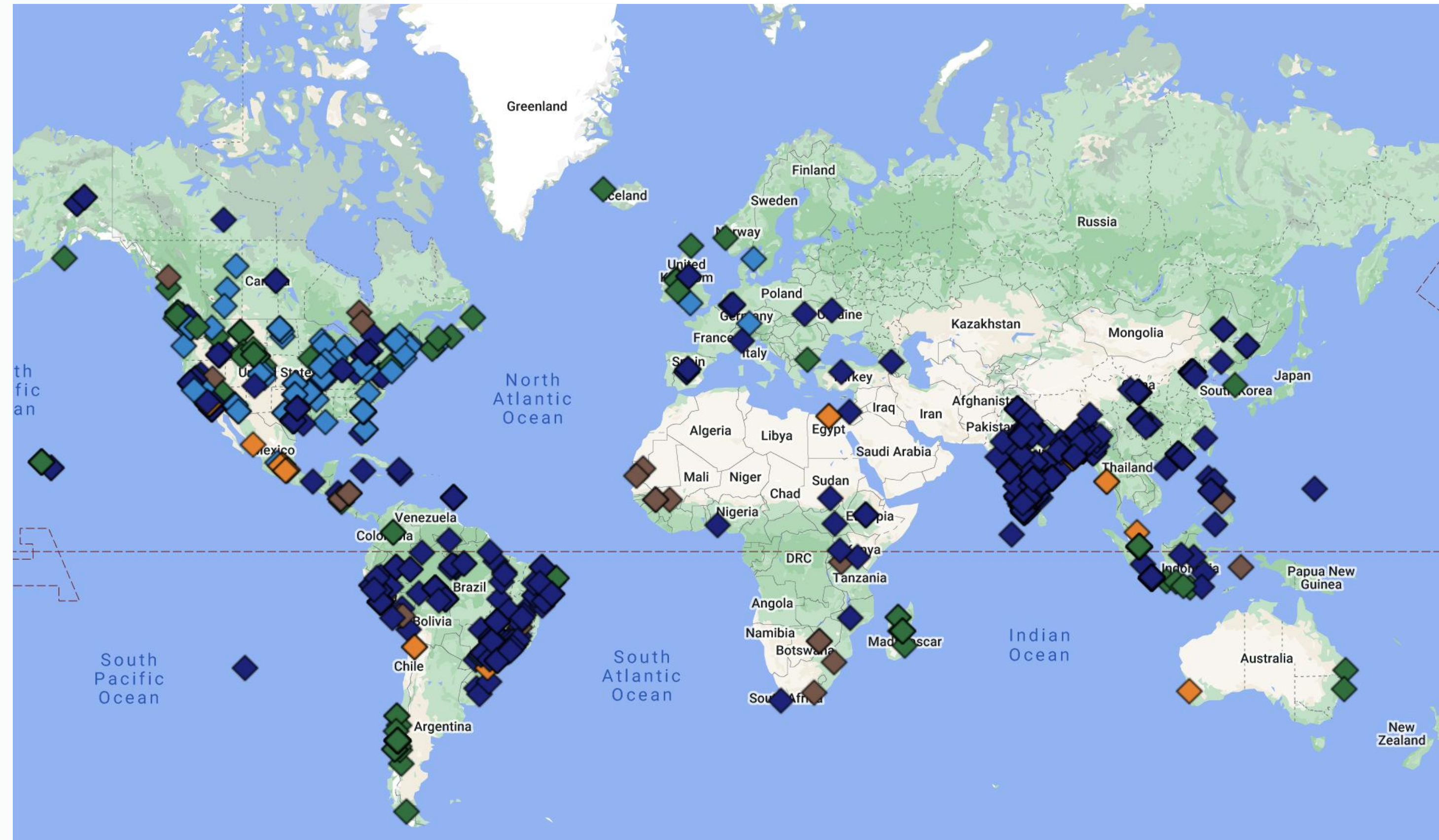


Andy Gouws, Director Africa, PCI Gases

Pacific Consolidated Industries (PCI Gases) (www.pcigases.com),

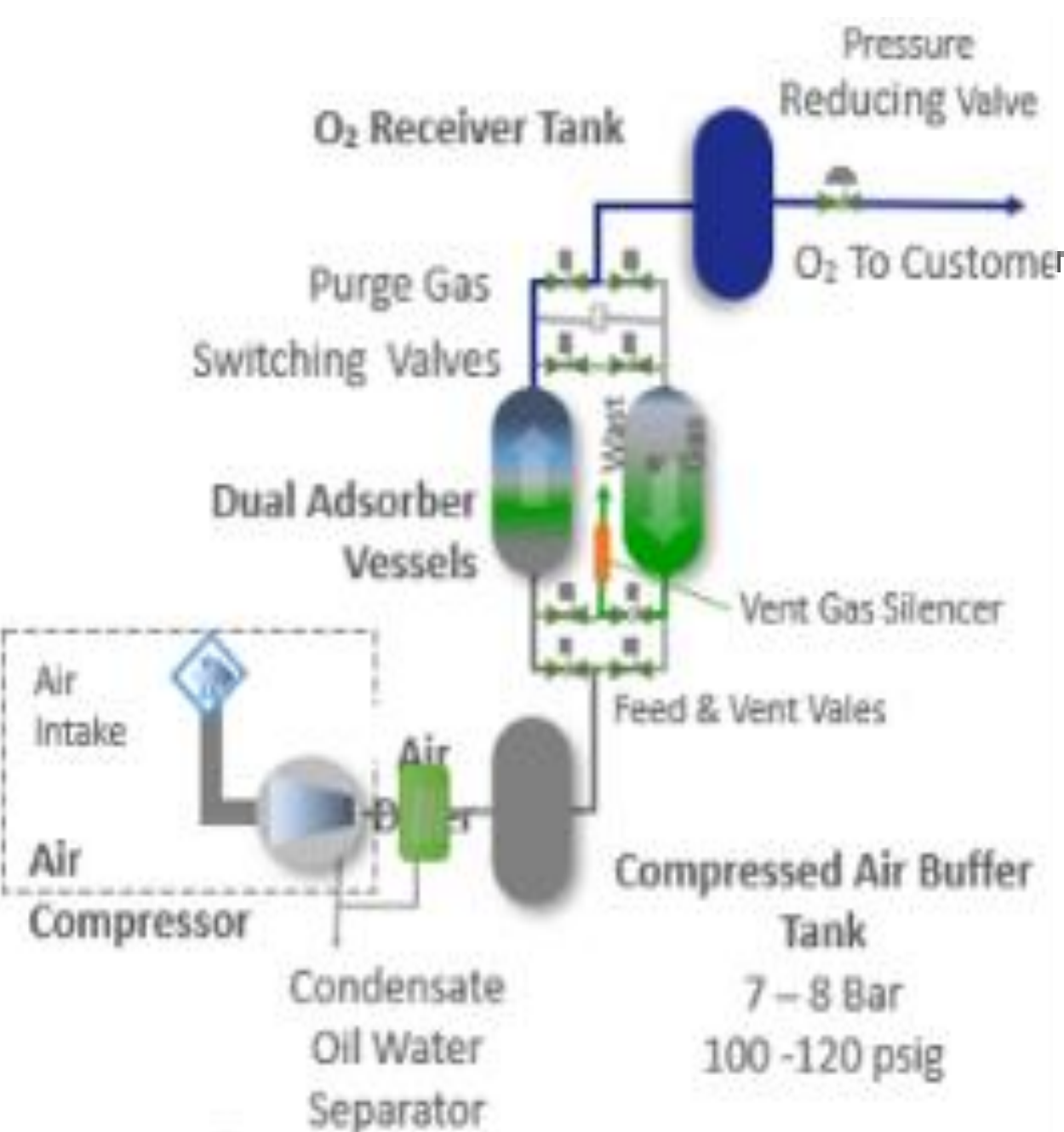


- Founded in 1984 with headquarters in Riverside, California, USA
- Leading global manufacturer of **Vacuum Swing Adsorption (VSA)** O₂ Generators
- PCI's production facilities in **California, Brazil and India**
- Applications include **medical, mining, water & wastewater** with over 1,000 O₂ units sold in over 70 countries worldwide

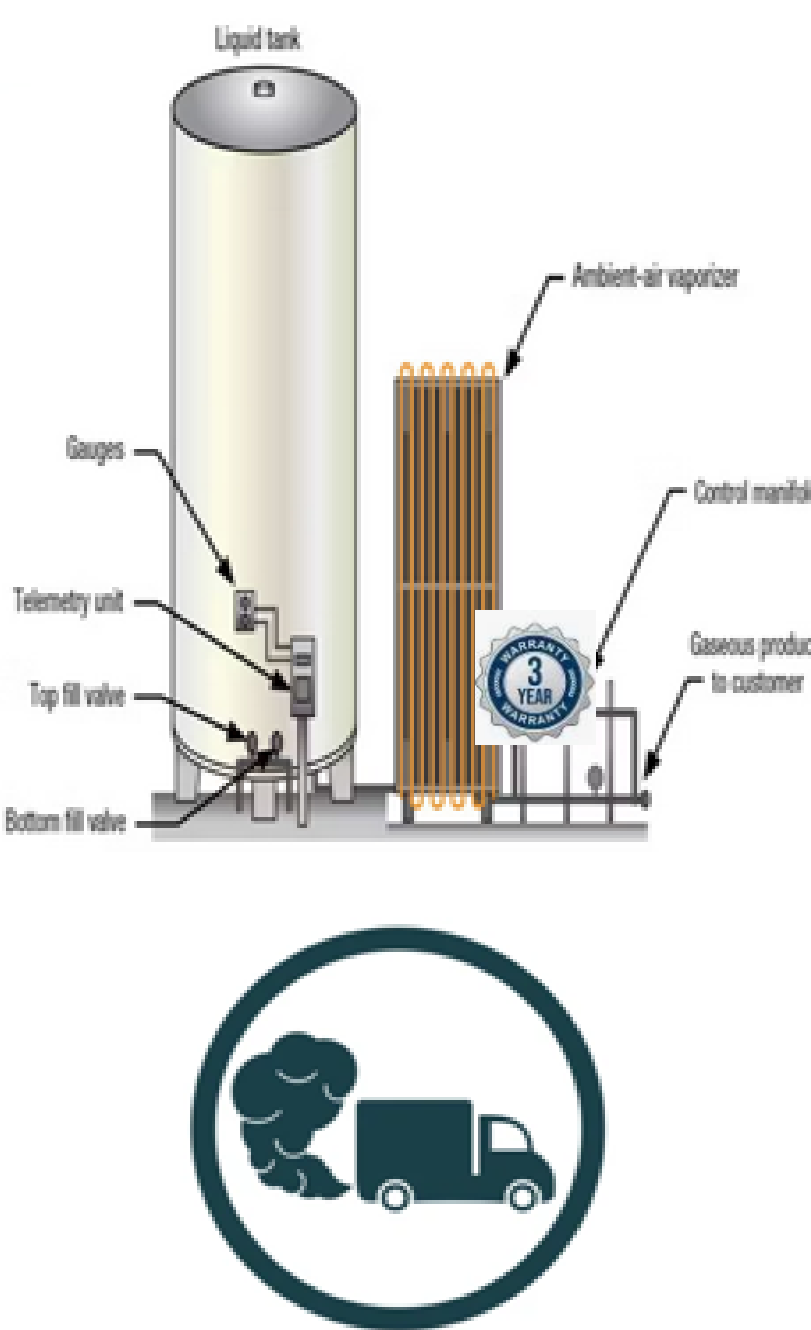


Overview of Technologies - Medical O₂ Sourcing Options

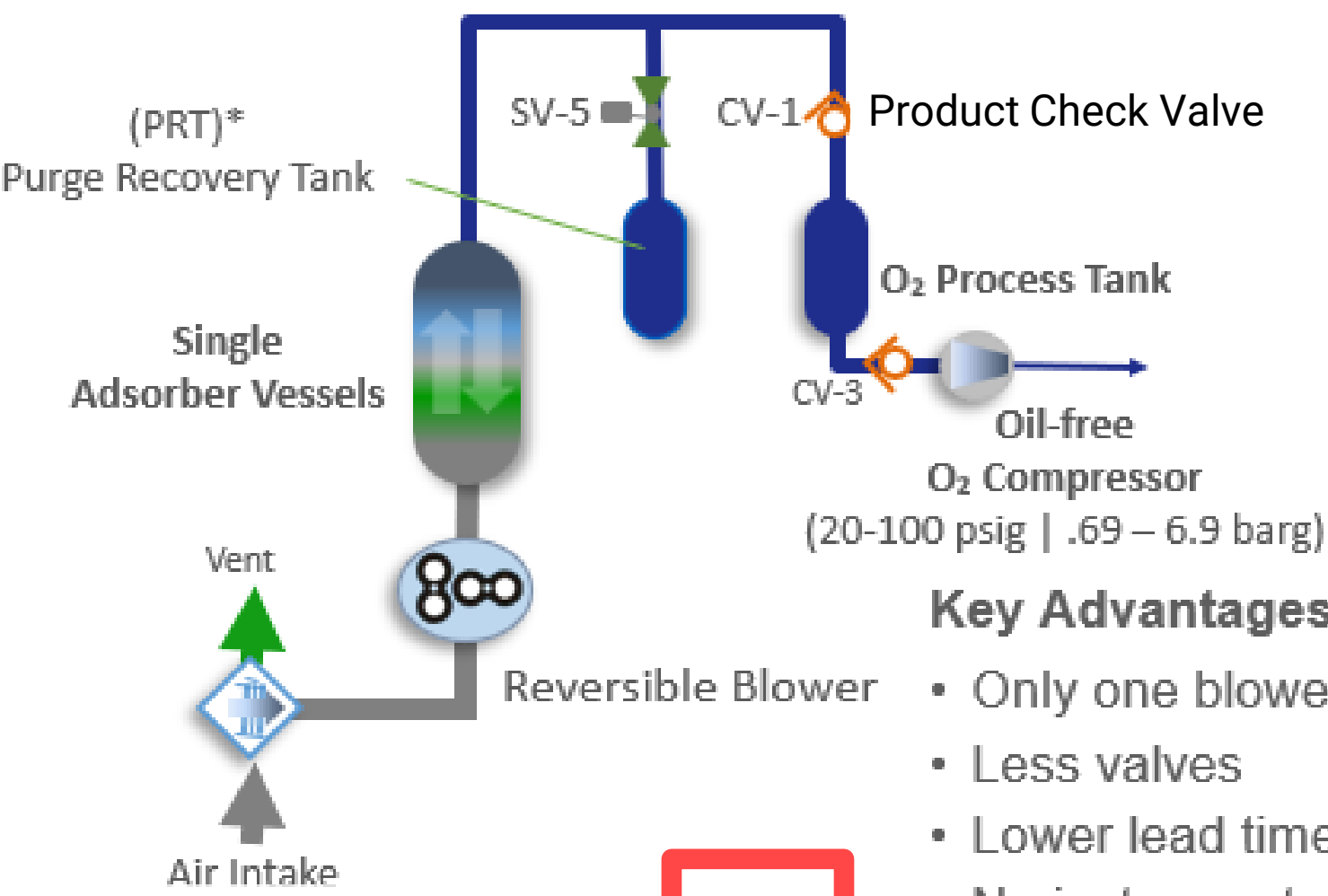
TRADITIONAL TWIN TOWER PSA TECHNOLOGY



CRYOGENIC LOX DELIVERY



STATE-OF-THE-ART VSA TECHNOLOGY FROM PCI



Keeping Track	PSA	VSA
Power (kWh / m3)	1.5	0.65
Number of Main Components	6	4
Number of Process Valves	9	3

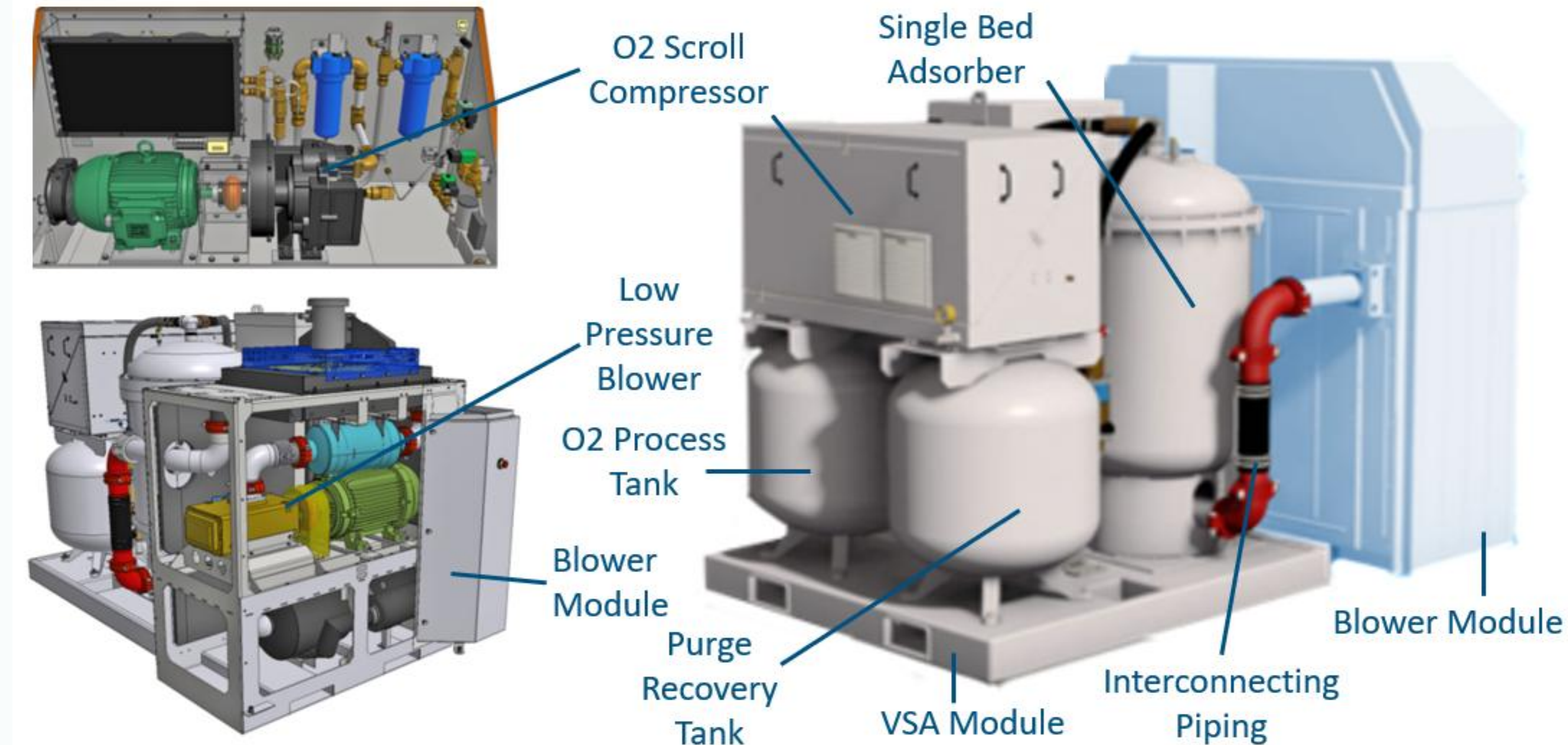
- Key Advantages**
- Only one blower
 - Less valves
 - Lower lead time
 - No instrument air
 - Reduced civils
 - Lower maintenance
 - No building required
 - Lower environmental impact

PSA = Pressure Swing Adsorption

LOX = Liquid Oxygen

VSA = Vacuum Swing Adsorption
PCI Deployable Oxygen Concentrator (DOCS)

PCI Gases Vacuum Swing Adsorption (VSA) Technology



Total Cost of Ownership

Skid Mounted Modular Design for Easy Installation

Quality Standards – Compliance with International Codes

1. ISO 9001 Quality Management System for Design & Production of Medical Gases systems
2. ISO 13485 Medical Devices Quality Management
3. ISO 7396 Pipelines for Compressed Medical Gases
4. ISO 14971 Risk Management for Medical Devices
5. ISO 15001 Cleanliness Requirements
6. ISO 60601 Electric Safety Medical Device Directive 93/ 42/ EEC CE Mark of Conformity 2007/ 47/ EC
7. BS 7634 O₂ concentrators for use with medical gas pipeline systems
8. 2006/ 42/ EC Machinery Directive
9. 2006/ 95/ EC LV Electrical Equipment Directive
10. 97/ 23/ EC Pressure Equipment Directive (PED)
11. O₂ quality according to
 1. USP O₂ 93% Monograph
 2. Monograph 2455: 2010 European Pharmacopeia Group 9g (Medical Gases)
12. HTM 02-01/ HTM 2022
13. National Fire Protection Association (NFPA) 99 - Gas and Vacuum Systems
14. FDA compliant (where required)



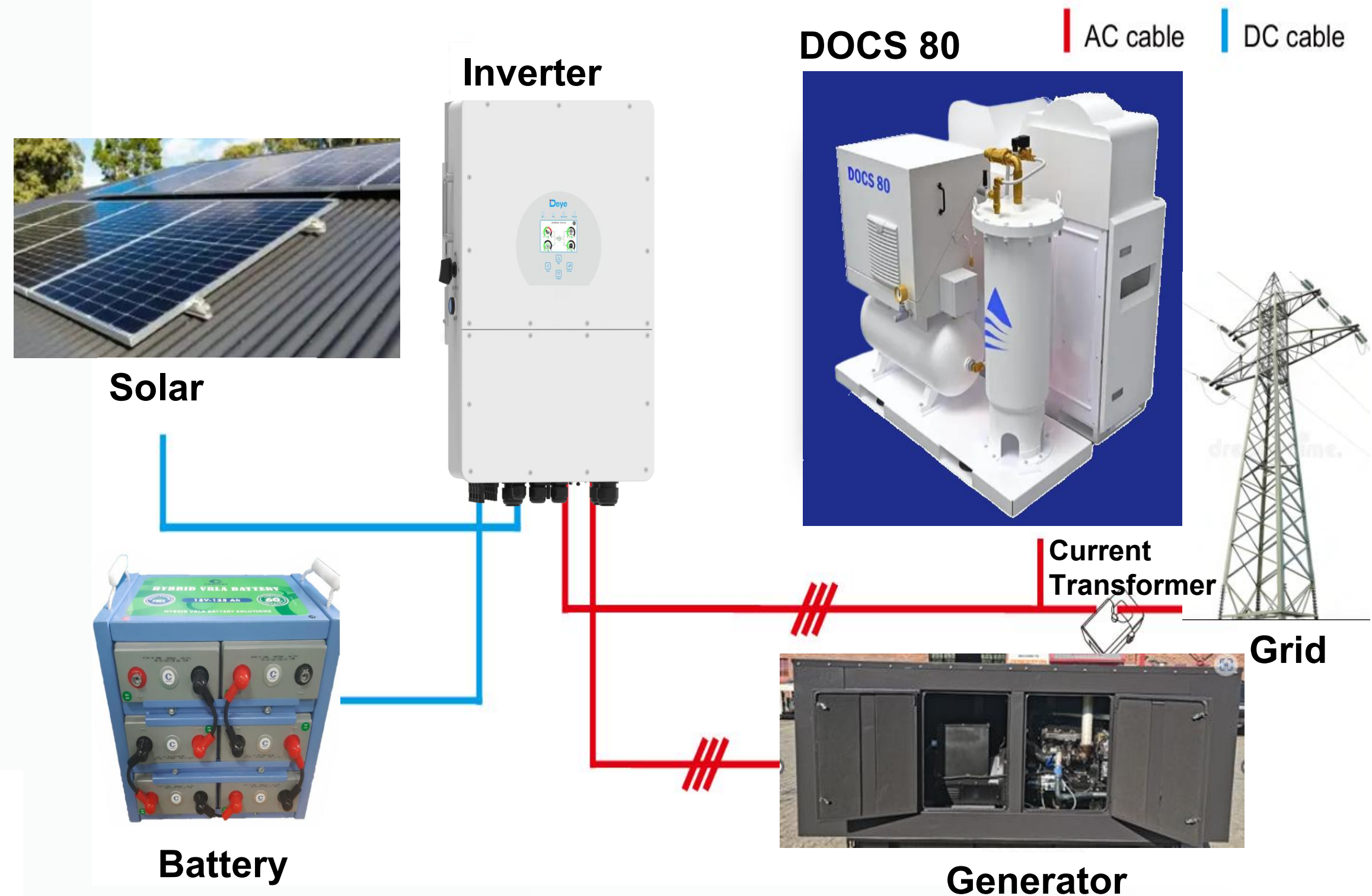
PCI VSA Containerised Solar Technology = “Green Technology”

- Delivers **80 litres/min** of medical O₂ **93% ±3% purity** and **7 barg**, sufficient for **25-bed hospital/clinic**
- Hospitals/clinics can fill **5-10 O₂ cylinders/day** at 155 bar
- **Oil Free Design** – No oil filtration needed - no risk to patients or equipment
- **Low Intake Pressure** – Minimized adsorber bed wear
- **Air Cooled** - No cooling water or chemicals required
- **Remote monitoring** capability optimizes performance
- Installation & commissioning in hours
- VSA technology uses **only 3.3 kW at 3.8 barg**
- Delivered assembled **factory and site acceptance tested**
- Equipment installed include ventilation, filtration, indoor lighting, sound insulation & ambient O₂ sensors



PCI's Solar Powered Containerized DOCS 80 Medical O₂ Generator

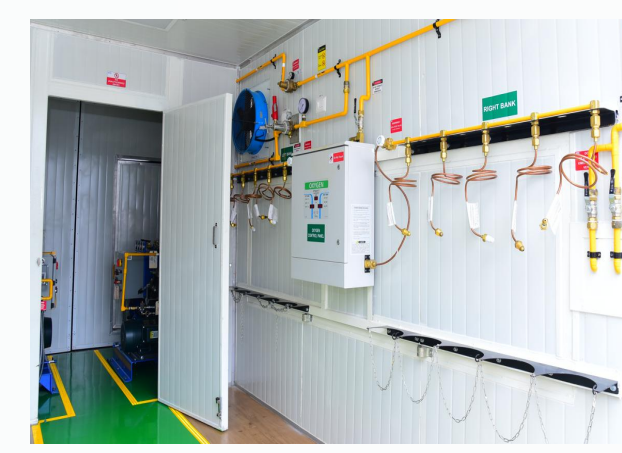
- 630 W monocrystalline solar N-Type dual glass solar panel
- 49 m² (19) panels mounted on the container's exterior walls generate up to 4 kW over a 12-hour period
- Long-life lithium-ion deep cycle batteries & hybrid inverter system
- 12 or 24-hour battery backup operation configurations



PCI 20' and 40' ISO Container Configurations

Available Configurations	20' (1 compartment) for DOCS 500/200/80	20' (1 compartment) - for Boost + manifolds	40' (3 compartment) with Boost & cylinder manifold options	40' (2 compartment) for Multiple DOCS
DOCS 80	1-2	NA	1-2	1-2
DOCS 200	1-2	NA	1-2	1-2
DOCS 500	1	NA	1	1-2
BOOST 30 m3/hr (250 LPM) (or smaller)	N/A	1-2	1-2	N/A
Cylinder fill manifold	N/A	1 (up to 10-cylinder fill manifold & 10-cylinder backup station)	1	N/A
Back up manifold w/ changeover panel	N/A	1	1	N/A

- DOCS 80 - 49 m² solar area (19 solar panels)
- DOCS 200 - 155 m² solar area (60 solar panels)
- DOCS 500 - 265 m² solar area (103 solar panels)



PCI Solar Containerised DOCS 80 Key Features

- Uses a silica-based gel electrolyte, compact maintenance-free Batteries
Spill-proof and leak-proof/ No corrosive fumes - fast recharge rate
- >95.5% Efficiency
- Max. charging/discharging current of 50A
- High voltage (48 VDC) battery, higher efficiency
- 6 time periods for scheduling battery charging/discharging
- 4 millisecond auto-switch to backup mode
- High current output / Vibration resistance
- Charges batteries during off-peak hours for use during peak time
- 2000 cycles at >80% depth of discharge (DOD) = 5.5 years at daily DOD
- Integrates into existing solar system
- Stores energy from diesel generator
- Reliable, low-maintenance and high-performance energy solution in renewable energy systems in low resource settings



DOCS 80 Machine Specifications



Discharge flow rate:

80 lpm | 4.8 m³ per hour | 170 scfh

340 lbs per day | 153 kg per day

O₂ purity:

93% +/- 3%

O₂ pressure

20 - 100 psig | 1.4 – 6.9 barg

Operating temperature:

0°F to 120°F | -18°C – 49°C

Operating power:

220 VAC, 3-ph, 50 Hz

Power consumption:

3.3 kW @ 55 psig (*factory setting*)

3.7 kW @ 100 psig

Amperage (est):

9 amps average draw

28 amps average maximum draw

Base dimensions:

50"L x 38"W x 54"H | 127cmL x 97cmW x 137cmH

Cooling System

Air Cooled

Weight of base unit (est):

1,500 lbs | 680 kg

Boost 66 O₂ Compressor



Discharge flow rate:	60 lpm 2.1 scfm
O₂ purity:	93% +/- 3%
O₂ pressure:	up to 2250 psig 155 bar
Operating temperature:	0°F to 120°F -18°C – 49°C
Operating power:	220 VAC, 3-ph, 50 Hz
Ave Power Consumption	1.9 kW (240 VAC) / 2.3 kW (380 VAC)
Amperage (est):	5 amps average draw 26 amps average maximum draw
Base dimensions:	26.3"L x 20"W x 39"H 151cmL x 67cmW x 99cmH
Cooling System	Air Cooled
Weight of base unit (est):	290 lbs 131.5 kg

Thank you / Q&A

Andy Gouws

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