

Industrial Oxygen, Nitrogen & Argon Plant

Complete Turnkey Business Proposal



Made-in-China supplier reference: real industrial oxygen, nitrogen & argon plant equipment.

bankable study investment gate	confirmed feedstock supply gate	EPC scope delivery gate	quality laboratory release gate
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Prepared for investment planning in Afghanistan and regional export markets. Final specifications, pricing, civil works, and utility loads require supplier quotation and site survey.

Executive Summary

Air-separation facility that compresses and purifies air, separates oxygen/nitrogen/argon by cryogenic or selected technology, stores/fills certified products and maintains hazardous-process controls.

Why this project fits Afghanistan

- This is a strategic plant, not a low-entry equipment package.
- Bankable feedstock, utility, permit, market, EPC and financing evidence is required before selection.
- Operate only with an independent laboratory, defined quality release and preventive-maintenance program.

Sanaatchi delivery scope

- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning
- International logistics, customs documentation, operator training, spare parts, and after-sales support

Recommended configuration

Proceed only after hospital/industrial demand, product purity/pressure, power reliability, land and safety setbacks, cylinder logistics, pressure-vessel permits, qualified operators and OEM support are confirmed.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Industrial and medical-grade gases where licensed	Gas purity, Nm ³ /h, pressure, liquid/cylinder route, storage volume, filling standard, analysis and traceability	Hospitals, welding/fabrication, mining, food processing, laboratories and gas distributors

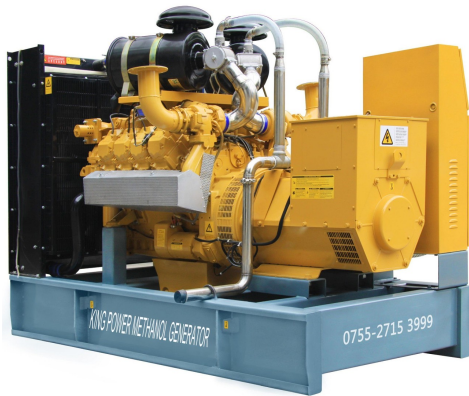
Final capacity, process, resource quality, utilities, permit conditions, emissions, acceptance test and commercial terms require independent engineering review before any order.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Air compression and pretreatment	Prepares feed air	Moisture/oil removal
2	Separation and purification	Produces gases	Purity and recovery
3	Compression/liquefaction/storage	Creates dispatch inventory	Pressure and safety
4	Cylinder filling/analysis	Fills controlled packs	Gas identity and purity
5	Safety, maintenance and QA	Protects/release supply	Interlocks and calibration

Equipment models are indicative and will be matched to the selected capacity, local raw-material tests, available utilities, and preferred automation level.

Reference Equipment Gallery



Made-in-China supplier reference: real industrial oxygen, nitrogen & argon plant equipment.



Made-in-China supplier reference: second real machine configuration for industrial oxygen, nitrogen & argon plant.

Images are supplier references for configuration discussion; final equipment appearance and model may differ.

Plant, Raw Materials & Utility Requirements

Raw materials

- Air, electricity, cooling water, adsorbents, cylinders/valves, labels, test gases, maintenance spares and laboratory consumables

Utilities & infrastructure

- Bankable electricity/fuel/water plans, process cooling and treatment, plant fire safety, laboratory, covered stores and qualified operation team
- Environmental permits, emissions control, waste route, maintenance workshop, critical spares and site-specific safety systems

Quality, safety and environmental controls

- Confirm demand/purity, power tariff/reliability, permitting, cylinder fleet, setback/fire design, distribution and OEM service
- Control compressor condition, purification, purity, pressure, storage, filling mass, valve integrity and emergency interlocks
- Test gas purity/moisture, pressure, leak-tightness, cylinder traceability, analyzer calibration and safety-system performance

A final factory layout must reserve safe forklift routes, maintenance clearances, raw-material segregation, finished-goods storage, fire protection, ventilation, and future expansion space.

Indicative Investment & Implementation Plan

LOW-ENTRY CONFIGURATION

Industrial gas production is a pressure, purity and safety operation. Medical claims require the applicable regulator and validated quality system.

Component	Indicative range	Notes
Air compression, purification and separation	US\$85m-280m	Technology and Nm ³ /h
Storage, filling, analysis and cylinder systems	US\$35m-120m	Gas portfolio
Utilities, safety and installation	US\$30m-100m	Power/permit critical
Indicative strategic project total	US\$150m-500m	Cylinder fleet, land and finance excluded

Implementation sequence

Phase 1	2-5 weeks	Confirm product specification, representative raw material, buyer, capacity, site and utilities
Phase 2	3-7 weeks	Run supplier trials with the buyer material and freeze the balanced machine, tooling and utility scope
Phase 3	8-22 weeks	Manufacture or refurbish, inspect, document and ship the contracted equipment
Phase 4	3-12 weeks	Install, commission, train operators and pass material-specific acceptance tests

Ranges are planning targets for a low-cost entry configuration, exclude land, and remain subject to confirmed capacity, supplier quotation, freight, duties, exchange rates and site conditions.

Next Steps & Contact Information

Recommended next steps

- Confirm target products, hourly output, and packaging formats
- Test representative raw materials and document quality requirements
- Complete site survey covering electricity, water, fuel, drainage, roads, and warehouse space
- Request comparable technical and commercial quotations from shortlisted suppliers
- Finalize financing, logistics, installation, training, and spare-parts plan

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Research and image references

- gas-generator
- industrial-air-compressor