

Phosphate/NPK Fertiliser Manufacturing Plant

Complete Turnkey Business Proposal



Made-in-China supplier reference: real phosphate/npk fertiliser manufacturing 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

Strategic fertiliser plant that receives and tests mineral/raw-material inputs, neutralises or blends specified formulations, granulates, dries, screens, coats, bags and releases nutrient-controlled products.

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 mineral/feedstock supply, formulation approvals, buyer/off-take, emissions/dust/effluent permits, acid/ammonia safety, utilities and experienced fertiliser EPC/operator support are bankable.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Phosphate and NPK fertilisers	N-P-K grade, micronutrients, granule size, moisture, nutrient tolerance, bag size and national fertiliser standard	Farmers, agro-dealers, government programmes, cooperatives and regional 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	Raw-material receiving and laboratory	Qualifies inputs	Nutrient and contamination
2	Reaction/blending and granulation	Creates formulation	NPK grade and granule
3	Drying, screening and recycle	Stabilises product	Moisture and size
4	Coating and bagging	Prepares sale packs	Flow and weight
5	Emission control and QA release	Protects/release products	Dust and nutrient compliance

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 phosphate/npk fertiliser manufacturing plant equipment.



Made-in-China supplier reference: second real machine configuration for phosphate/npk fertiliser manufacturing plant.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Phosphate/potash/nitrogen inputs, fillers, binders/coating agents, bags, labels, water-treatment materials, fuel/electricity and lab 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

- Verify input chemistry, formula registrations, acid/ammonia hazards, dust/emission controls, storage/transport and off-take
- Control formulation, reaction pH, granule size, moisture, nutrient uniformity, coating and bag weight
- Test N-P-K analysis, moisture, granule size/strength, contaminants, bag mass and dust/emission records

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

Fertiliser manufacturing must be designed around verified mineral chemistry, safe reactions and farm-market demand - not only a nominal blending rate.

Component	Indicative range	Notes
Feed handling, reaction/blending and granulation	US\$60m-210m	Formula and capacity
Drying, bagging, laboratory and controls	US\$30m-100m	Product portfolio
Emission, utilities and installation	US\$35m-120m	Safety/environment critical
Indicative strategic project total	US\$125m-430m	Feedstock, 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

- npk-fertiliser-blending-bagging-line
- organic-fertiliser-granulation-line