SANAATCHI
INDUSTRIAL VISION GROUP

Compact Rice Milling & Polishing Line

Complete Turnkey Business Proposal

Supplier reference: real compact rice-milling plant integrating elevators, cleaning, husking, separation and milling equipment.

600-800 kg/h	**68-72%**	**25-40 kW**	**5-8**
starter paddy input	**supplier milling-rate reference**	**indicative connected load**	**entry operators**

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

This compact plant converts dried paddy into market-ready white or polished rice while separating husk, bran and broken rice. The line must preserve head-rice yield: excessive breakage, incorrect rubber-roll pressure, poor paddy separation or over-whitening can erase the advantage of a low equipment price. Final selection therefore follows trials with the buyer's Afghan paddy varieties and moisture range.

Why this project fits Afghanistan

- Afghan paddy can be milled near producing areas, reducing transport of husk and increasing local value addition.
- Compact combined mills serve traders and cooperatives without the civil works of a large multi-floor plant.
- Rice bran, husk and controlled broken-rice grades create separate commercial streams.
- A modular launch can later add color sorting, automatic packing or a second whitener when demand is proven.

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	Start with a compact 600-800 kg/h paddy-input line comprising a cleaner, destoner, rubber-roll husker, paddy separator, whitener, polisher and semi-manual packing. Add color sorting only after buyers prove a premium that justifies it; keep aspiration, elevators and safe bran collection in the entry scope.

Manufacturing Process & Product Portfolio

Integrated process flow

Target products

Product	Typical specification	Primary market
Polished white rice	Buyer-approved whiteness, moisture, head-rice yield and low foreign matter	Retail, wholesale and institutional buyers
Brown or lightly milled rice	Optional reduced-milling grade with controlled bran layer	Health-oriented and specialty buyers
Broken rice	Separated and graded by buyer specification	Food processing, flour and feed users
Rice bran and husk	Kept dry, separate and traceable	Approved oil, feed, fuel or bedding users

One supplier reference lists 600-800 kg/h, about 19.87-24.62 kW and cleaning, destoning, husking, separation, whitening and grading in a compact plant; another one-tonne-per-hour reference includes a polishing function. These are supplier values, not guaranteed project output. Sanaatchi requires a timed trial with representative paddy and a mass balance for head rice, broken rice, bran and husk.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Vibration cleaner and magnet	Removes straw, dust, oversize and ferrous material	Screens approved for local paddy
2	Destoner	Separates stones and dense impurities	Adjustable air and deck inclination
3	Rubber-roll husker	Removes husk with controlled kernel breakage	Include spare rolls and pressure adjustment
4	Husk aspirator	Separates light husk from brown rice	Ducting and cyclone included
5	Paddy separator	Returns unhusked paddy without remilling brown rice	Stable feed and adjustable separation deck
6	Rice whitener	Removes bran to the target milling degree	Adjustable pressure and bran aspiration
7	Rice polisher	Improves surface finish and removes loose bran	Dry or approved mist-polish configuration
8	Grader and bagging scale	Separates broken fractions and packs released rice	Semi-manual 5-50 kg starter range

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

Supplier reference: real compact rice-milling plant integrating elevators, cleaning, husking, separation and milling equipment.

Supplier reference: real one-tonne-per-hour rice milling and polishing equipment arranged as a compact line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Dry mature Afghan paddy approved by variety and milling trial
- Food-grade retail or lined wholesale bags
- Labels, sewing thread or heat-seal film
- Food-grade rubber rolls and approved polishing consumables where applicable

Utilities & infrastructure

- Stable three-phase electricity
- Dust extraction and safe husk/bran collection
- Dry paddy storage with moisture monitoring
- Covered clean finished-rice and byproduct storage
- Calibrated moisture meter, scales and laboratory grader

Quality, safety and environmental controls

- Grade each paddy lot for moisture, variety, infestation, foreign matter and fissured kernels
- Record husker pressure, roll condition and percentage of unhusked return
- Measure head-rice yield, broken fraction, whitening degree and bran removal
- Check stones, metal, foreign matter, odor and final moisture
- Keep bran and husk dry and prevent cross-contamination
- Approve packing weight, closure, lot code and storage stability

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

Lowest credible entry is a complete compact mill with cleaning, destoning, rubber-roll husking, paddy separation, one whitening and polishing stream, grading and semi-manual packing. Land, building, paddy inventory, color sorter and standby power are excluded.

Component	Indicative range	Notes
Cleaning, destoning and husking section	US$7k-15k	Compact intake with rubber-roll husker
Paddy separation, whitening and polishing	US$8k-18k	One complete starter milling stream
Grading, aspiration and semi-manual packing	US$4k-10k	Color sorter excluded from entry scope
Electrical, installation and initial wear parts	US$3k-7k	Include rubber rolls, screens and belts
Freight and clearance	US$4k-9k	Confirm frames, elevators and container plan
Indicative low-entry total	US$26k-59k	Building, paddy stock, generator and color sorter excluded

Implementation sequence

Phase 1	2-3 weeks	Confirm paddy varieties, moisture, rice grades, capacity and pack sizes
Phase 2	2-4 weeks	Run milling trials and approve yield mass balance and equipment flow
Phase 3	5-9 weeks	Manufacture, inspect and ship the selected line
Phase 4	2-4 weeks	Install, balance air and rolls, train staff and approve product lots

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

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