

Wool Washing, Carding & Preparation Line

Complete Turnkey Business Proposal



Made-in-China supplier reference: real wool washing, carding & preparation line equipment.

100-250 kg screened output per shift	2-3 tanks entry wash and rinse stages	1 card starter fibre preparation	8-14 entry workforce
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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

A small/medium primary-processing line converting sorted greasy Afghan sheep wool into clean, opened and carded fibre or sliver through receiving, hand sorting and skirting, controlled opening and dust removal, staged warm scouring, rinsing, squeeze extraction, drying, blending and oiling where specified, fine opening, carding, sliver coiling or web collection, inspection and bale packing. The process removes dirt and wool grease but does not spin yarn.

Why this project fits Afghanistan

- Afghan sheep wool gains value when sold clean, classed and uniformly prepared rather than as mixed greasy fleece.
- Scoured carded fibre supplies hand-spinning, carpet-yarn, felt and insulation producers.
- Starting with one colour and fineness class reduces contamination and blending disputes.
- Water, detergent and effluent control determine whether the unit is commercially and environmentally viable.

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

Launch with one wool class and one buyer route. Screen a 100-250 kg per shift semi-continuous scour using two or three insulated wash/rinse vessels, squeeze press, low-temperature dryer, one fine opener and one card with sliver or web take-off. Include wool-recovery screens, grease traps and a sized effluent-treatment route; never discharge raw scour liquor.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Scoured carded wool	Buyer-defined breed or fineness class, colour, residual grease, vegetable matter, moisture and contamination	Carpet-yarn, felt, insulation and handcraft processors
Carded wool sliver	Controlled linear density and evenness for the selected spinning route	Small wool-spinning and artisan-yarn units

Greasy-wool yield varies with dirt, grease, vegetable matter and moisture; supplier throughput must therefore be stated on greasy input and clean output. Scouring temperature, detergent, pH, liquor ratio and mechanical action must avoid felting and fibre damage. Acceptance uses representative Afghan wool and measures clean yield, residual grease, moisture, vegetable matter, fibre loss and card-web uniformity.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Sorting tables, floor scale and bale opener	Separates classes and opens fleece without mixing lots	Manual quality-led entry
2	Dust extractor and coarse opener	Removes loose soil and opens locks	Fire-safe fibre collection
3	Insulated scour and rinse vessels	Removes grease, sweat salts and dirt	Two or three controlled stages
4	Squeeze press and low-temperature dryer	Reduces water and dries without yellowing	Moisture-controlled discharge
5	Fine opener and blender	Separates and evens dried fibre	Gentle wool settings
6	Wool card with sliver or web take-off	Aligns and cleans fibre for sale or downstream use	One product route
7	Screens, grease trap and effluent treatment	Recovers fibre and treats high-COD scour liquor	Site-specific mandatory scope
8	Fibre laboratory and baler	Grades output and forms traceable bales	Moisture, yield and contamination tests

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 wool washing, carding & preparation line equipment.



Made-in-China supplier reference: second real machine configuration for wool washing, carding & preparation line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Sorted greasy Afghan sheep wool by source, colour and fineness
- Low-foam wool detergent and approved pH-control chemicals
- Clean process water and packaging bales, liners, straps and labels
- Card clothing, seals, filters and critical pump/dryer spares

Utilities & infrastructure

- Reliable warm-water and low-pressure steam or hot-water source
- Three-phase electricity for opener, press, dryer, card and pumps
- Covered dirty-wool and clean-wool zones with physical separation
- Ventilation, dust collection, fire protection and worker washing facilities
- Screening, grease separation, biological/physicochemical effluent treatment and sludge route

Quality, safety and environmental controls

- Grade and sample greasy wool before mixing lots
- Record input weight, dirt removal, wash recipe and clean yield
- Control bath temperature, pH, detergent and rinse conductivity
- Verify dryer outlet moisture and avoid heat damage
- Measure residual grease, vegetable matter, contamination and colour
- Inspect card web/sliver evenness and trace every bale

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

The lowest credible plant uses manual grading and a compact semi-continuous scour but retains a proper dryer, card and effluent system. Yarn spinning, land, building and greasy-wool working stock are excluded.

Component	Indicative range	Notes
Sorting, opening and dust-control equipment	US\$10k-28k	Manual sorting with mechanical opening
Compact scour, rinse, squeeze and dryer	US\$28k-85k	100-250 kg per shift basis
Fine opener, card, laboratory and baler	US\$18k-55k	One fibre product route
Water, effluent, freight and installation	US\$15k-48k	Mandatory environmental scope
Indicative installed low-entry total	US\$71k-216k	Building, wool stock and working capital 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

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