SANAATCHI
INDUSTRIAL VISION GROUP

Particleboard from Sawdust & Agricultural Residue Production Line

Complete Turnkey Business Proposal

Made-in-China supplier reference: real particleboard from sawdust & agricultural residue production line equipment.

30,000 m3/y	8-40 mm	550-750 kg/m3	55-95
screened entry scale	supplier thickness range	typical density range	three-shift workforce

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 medium industrial wood-panel plant converting a validated wood-residue recipe-and only specifically qualified agricultural fibres-into sanded particleboard through feedstock receiving and cleaning, chipping/flaking or fibre preparation, screening, controlled drying, surface/core classification, resin and wax preparation, precision blending, multi-layer mat forming, pre-pressing, hot pressing, cooling and conditioning, trimming, sanding, laboratory release and dust/emission control. Agricultural residues are not a drop-in substitute for wood flakes.

Why this project fits Afghanistan

- Furniture, doors, cabinetry and fit-out projects consume standard boards that Afghanistan largely imports.
- Wood-processing residues can become a consistent feedstock only after volume, moisture, contamination and particle-geometry surveys.
- A 30,000 m3/year plant needs committed regional buyers and a resin, energy and logistics plan before procurement.
- Board emissions, internal bond, bending, thickness swelling and fire/dust risks require industrial controls and a real laboratory.

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	Treat this as a full industrial project, not a hot-press purchase. Base screening on roughly 30,000 m3/year of one board size and thickness family using secured wood-processing residues. Include metal/mineral removal, ring flaker or qualified milling, dryer with fire protection, screening and surface/core bins, resin/wax kitchen, separate blenders, mechanical forming, pre-press, multi-daylight hot press, cooling/conditioning, trim and sanding, laboratory, dust collection and emissions treatment. Qualify straw, cotton stalk or rice husk in pilot pressing before any equipment commitment.

Manufacturing Process & Product Portfolio

Integrated process flow

Target products

Product	Typical specification	Primary market
Interior-grade particleboard	One board size, thickness family, density, emission class, internal bond, bending and swelling specification	Furniture, doors, cabinetry and fit-out factories
Agricultural-residue board	Separate fibre preparation, resin chemistry and full pilot-tested performance approval	Only after residue-specific technical and market qualification

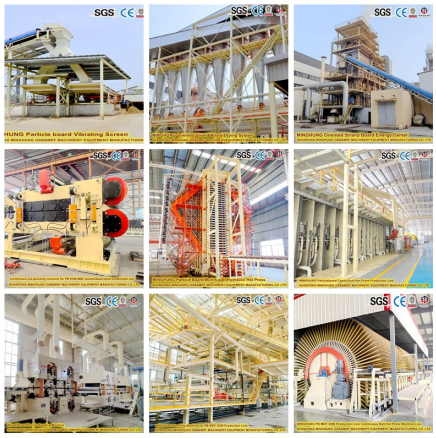
Sawdust alone does not produce a graded three-layer board; the plant needs controlled particle geometry for surface and core layers. Agricultural residues vary in silica, wax, ash and fibre chemistry and may require different milling, MDI or other resin, wax and press cycles. Acceptance must prove stable board properties over continuous multi-shift production, not one laboratory panel.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Receiving, cleaning, chipper/flaker and screens	Creates clean controlled particles	Feedstock-specific preparation
2	Rotary dryer and fire/explosion protection	Controls particle moisture safely	About 3-5% after drying
3	Surface/core classifiers and storage bins	Separates fine faces from coarse core	Three-layer board recipe
4	Resin/wax kitchen and precision blenders	Meters and coats each particle fraction	Emission-class recipe
5	Mat former and continuous pre-press	Builds uniform multi-layer mat	Density profile controlled
6	Multi-daylight hot press and handling	Cures resin under heat and pressure	30,000 m3/year basis
7	Cooling, trim, sanding and panel laboratory	Finishes and releases boards	EN/ISO or buyer methods
8	Dust, thermal and formaldehyde controls	Protects workers and environment	Site-permitted system

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 particleboard from sawdust & agricultural residue production line equipment.

Made-in-China supplier reference: second real machine configuration for particleboard from sawdust & agricultural residue production line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Secured clean wood chips, shavings and residues by species and moisture
- Only pilot-qualified straw, cotton stalk, rice husk or other agricultural fibre
- Specified UF/MUF/MDI or other validated resin, wax and hardener
- Sanding belts, press cauls/screens, release agents, wrap and pallets

Utilities & infrastructure

- High-capacity three-phase power; supplier references show roughly 600 kW and above depending on scope
- Thermal-energy plant and dryer exhaust/fire protection
- Large covered raw-material and finished-board warehouses
- Dust extraction, spark detection, explosion isolation and fire water
- Resin storage, process-water, effluent and permitted air-emission systems

Quality, safety and environmental controls

- Map year-round feedstock volume, moisture, ash, silica and contamination
- Control particle size distribution and dryer outlet moisture
- Verify resin solids, dosing, wax and mat weight/profile
- Record press temperature, pressure, time and every board trace code
- Test density, thickness, moisture, internal bond, bending and swelling
- Verify formaldehyde/VOC class, sanding, dimensions and long-run capability

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

This is the lowest credible complete industrial entry, not a single-machine quote. It assumes one board size/thickness family and established wood-residue supply. Land, raw-material stock, financing and optional lamination are excluded.

Component	Indicative range	Notes
Feedstock preparation, drying and classification	US$650k-1.55m	Fire-safe complete preparation
Resin, forming, pre-press and hot press	US$900k-2.10m	30,000 m3/year basis
Cooling, trimming, sanding and laboratory	US$350k-900k	Saleable finished board
Thermal plant, emissions, civil, freight and erection	US$750k-2.20m	Site-specific industrial scope
Indicative installed entry project total	US$2.65m-6.75m	Land, feedstock/resin 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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