

Wheat-Bran Feed Pellet Production Line

Complete Turnkey Business Proposal



Supplier reference: installed feed-pellet production equipment with conditioning and conveying.

300-500 kg/h starter pellet output	3-8 mm typical feed pellet diameter	25-45 kW indicative connected load	4-6 entry operators
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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

This small line densifies wheat bran and other approved feed ingredients into easier-to-handle livestock pellets. The launch concept is a feed operation, not a biomass-fuel plant: formulas, particle size, moisture, conditioning temperature, pellet diameter and animal suitability must be established with a qualified feed specialist.

Why this project fits Afghanistan

- Afghan flour mills produce bran that can be upgraded from a loose by-product into denser feed pellets.
- Pellets reduce dust and simplify storage, transport and controlled feeding.
- A small line can serve dairy, sheep, goat and cattle farms after nutrition trials.
- Local molasses or other approved ingredients may improve durability when the formula allows.

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 at 300-500 kg/h with simple screening or grinding where needed, a mixer, low-pressure conditioner, flat-die feed pellet mill, compact cooler and semi-manual bagging. Use bran from traceable flour mills and produce only validated feed formulas.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Cattle feed pellets	Validated bran-based formula and pellet diameter	Dairy and beef farms
Sheep and goat pellets	Species-appropriate formula and mineral balance	Small-ruminant farms
Bran feed concentrate	Buyer-approved composition, not a complete ration unless formulated	Feed mixers and livestock cooperatives

Supplier references cover small flat-die machines and larger 1-2 t/h feed plants. A bran-focused starter line does not need the heavy drying and crushing stages used for wet wood biomass, but it does need controlled moisture, uniform mixing, adequate cooling and a feed-safe formulation.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Bran receiving hopper	Stores and meters dry bran into production	Covered, dust-tight and cleanable
2	Screen and magnet	Removes oversize material and ferrous contamination	Install before mixer and pellet mill
3	Ingredient scale and micro-addition station	Doses bran, binders and approved supplements	Formula-based manual or small batch weighing
4	Hammer mill	Equalizes coarse ingredients when required	Optional for already fine flour-mill bran
5	Horizontal feed mixer	Produces a uniform feed batch	300-500 kg practical starter batch
6	Conditioner and liquid addition	Adjusts moisture and binder before pelleting	Low-pressure steam or controlled water/molasses
7	Flat-die pellet mill	Compresses conditioned feed into pellets	300-500 kg/h entry target; 3-8 mm dies
8	Pellet cooler and screen	Stabilizes pellets and removes fines	Return clean fines to the mixer
9	Scale and bag closer	Packs finished feed for storage and sale	25-50 kg semi-automatic bags

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: installed feed-pellet production equipment with conditioning and conveying.



Supplier reference: compact multi-pellet-mill line with feeding and transfer equipment.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Dry wheat bran from traceable flour mills
- Approved grain meals, oilseed meals or forage ingredients by formula
- Feed-grade mineral/vitamin premix where specified
- Approved binder or molasses where required
- Feed bags, labels and sewing thread

Utilities & infrastructure

- Stable three-phase electricity
- Low-pressure steam or controlled water addition if conditioning is used
- Dust collection and ventilation
- Dry ingredient and finished-feed storage
- Feed-safe cleaning, pest-control and fire-protection systems

Quality, safety and environmental controls

- Approve every formula with a qualified animal-nutrition specialist
- Check bran moisture, mold, odor, infestation and mycotoxin risk
- Verify ingredient weights and mixer uniformity
- Control conditioning moisture and temperature
- Measure pellet diameter, durability, fines and cooled temperature
- Prevent cross-contamination with medicines or prohibited materials
- Control combustible feed dust and guard all rotating equipment

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 entry uses dry flour-mill bran, manual ingredient weighing, one small mixer, a flat-die pellet mill, compact cooler and semi-manual bagging. A boiler is excluded unless steam trials prove it necessary.

Component	Indicative range	Notes
Screening, dosing and mixing	US\$3k-8k	Manual batch dosing for lowest entry
Pellet mill and basic conditioner	US\$4k-10k	Flat-die 300-500 kg/h target
Cooling, screening and bagging	US\$3k-8k	Compact cooler and semi-manual bags
Electrical, dust control and installation	US\$2k-6k	Local supports and connections where safe
Freight, clearance, dies and spares	US\$3k-7k	Include at least two die sizes and wear parts
Indicative low-entry total	US\$15k-39k	Building, boiler and ingredient working capital excluded

Implementation sequence

Phase 1	1-3 weeks	Confirm feed species, formulas, ingredient tests and output
Phase 2	2-4 weeks	Run pelleting trials and approve die, conditioner and cooler scope
Phase 3	4-8 weeks	Manufacture, inspect and ship the selected line
Phase 4	2-4 weeks	Install, train, validate feed batches and farm-test pellets

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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