

Maize Starch & Glucose Syrup Production Line

Complete Turnkey Business Proposal



Made-in-China supplier reference: real maize starch & glucose syrup production line equipment.

integrated wet-milling basis	1 syrup grade controlled launch	food grade mandatory release	70-140 three-shift 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 large wet-milling and sweetener plant converting qualified maize into food-grade starch and one glucose-syrup specification through receiving and testing, steeping under a licensed process, germ separation, fibre and gluten separation, starch washing and dewatering, starch slurry storage, enzyme-controlled liquefaction, saccharification, clarification, ion exchange or other validated purification, evaporation, hygienic storage, filling and laboratory release. It is not a simple dry maize mill and has substantial water, steam and effluent demand.

Why this project fits Afghanistan

- Maize can create multiple product streams when crop quality and by-product markets are secured.
- Wet milling requires far more process control than dry maize flour milling.
- Glucose quality depends on controlled enzymatic conversion and purification.
- Water, steam, sanitation, effluent treatment and food safety are core investment scope.

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 a bankable integrated-feasibility study and approved food buyers. A screening phase should choose either saleable native starch or one liquid-glucose grade first, then confirm maize quality, water, steam, enzymes, permits, by-product routes, effluent treatment and hygienic packing. A full maize-to-syrup plant needs experienced process licensing and customer trials; do not use a supplier diagram as a food-safety specification.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Food-grade native maize starch or liquid glucose syrup	Starch purity or syrup solids/DE, colour, clarity, pH, ash, protein, microbiology, heavy metals, stability and pack mass	Qualified Afghan and regional food, beverage, confectionery and bakery manufacturers

Separate the maize-starch and glucose-syrup material balances before committing. The process provider must guarantee maize quality range, starch recovery, by-product yield, water/steam/energy use, enzyme and chemical inputs, effluent load, microbial controls and final product tests. Acceptance uses representative maize and verifies separation performance, starch purity, syrup solids/DE, colour, clarity, pH, microbiology, residual processing aids, tank sanitation and customer application trials.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Maize intake, cleaning and steeping system	Prepares tested maize for wet separation	Licensed process window
2	Wet-milling, germ/fibre/gluten separation	Recovers defined starch and by-product streams	Mass-balance guarantee
3	Starch washing, hydrocyclones and dewatering	Refines food-grade starch slurry	Purity and water-use targets
4	Liquefaction, saccharification and purification train	Converts starch into one controlled glucose grade	Enzyme and food-safety validated
5	Evaporation, hygienic filling, laboratory and effluent plant	Releases safe syrup and manages water load	CIP and wastewater mandatory

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 maize starch & glucose syrup production line equipment.



Made-in-China supplier reference: second real machine configuration for maize starch & glucose syrup production line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Qualified maize with moisture, mycotoxin, GMO policy and contaminant limits
- Food-grade enzymes, filtration media, regeneration chemicals and packaging
- Validated CIP chemicals and sterile or hygienic containers

Utilities & infrastructure

- Stable three-phase electricity with verified connected load
- Guarded machinery, lockout, ventilation and fire protection
- Covered segregated raw-material and finished-goods storage
- Maintenance tools, safe lifting and critical spare parts
- Continuous steam, softened water, cooling water, refrigeration and CIP infrastructure
- Food hygiene zoning, microbial laboratory and controlled enzyme/chemical storage
- High-strength wastewater treatment and approved by-product outlets

Quality, safety and environmental controls

- Release maize for moisture, mycotoxins, foreign matter and storage risk
- Track steeping, separation, starch recovery and by-product mass balance
- Control enzyme dose, temperature, pH, residence and purification
- Test starch purity or syrup solids/DE, colour, clarity and pH
- Test microbiology, metals, stability, pack integrity and CIP effectiveness
- Complete buyer application trials before broad market release

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 responsible phase selects either native starch or one glucose-syrup grade after a bankable maize and buyer study. Full wet milling plus broad sweetener portfolio is a major strategic investment.

Component	Indicative range	Notes
Maize intake, wet milling and starch recovery	US\$4m-10m	Integrated industrial basis
Glucose conversion, purification and evaporation	US\$4m-12m	One liquid grade
Steam, water, CIP, lab and wastewater plant	US\$3m-9m	Food safety and environmental scope
Civil, installation, freight and commissioning	US\$3m-9m	Licensed process and trials
Indicative strategic project total	US\$14m-40m	Land, working capital and maize stock 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

- <https://cnmeckey.en.made-in-china.com/product/GQirpAjouYUV/China-Corn-Starch-to-Glucose-Syrup-Production-Line-Processing-Plant-Machine.html>

- <https://www.made-in-china.com/showroom/kfsida/product-detailqolmYesykCrB/China-Yellow-Corn-Glucose-Syrup-Production-Line-Use-Corn-Producing-Glucose-Fructose-Maltose.html>