



Photovoltaic Solar-Glass Factory

Complete Turnkey Business Proposal



Made-in-China supplier reference: real photovoltaic solar-glass factory equipment.

bankable study investment gate	confirmed feedstock supply gate	EPC scope delivery gate	quality laboratory release gate
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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

Strategic photovoltaic-glass manufacturing that prepares low-iron glass, patterns/coats it as specified, tempers it, inspects optical and mechanical performance, packs and supplies solar-module manufacturers.

Why this project fits Afghanistan

- This is a strategic plant, not a low-entry equipment package.
- Bankable feedstock, utility, permit, market, EPC and financing evidence is required before selection.
- Operate only with an independent laboratory, defined quality release and preventive-maintenance program.

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 proven low-iron silica/glass feed, solar-module off-take, coating and tempering process partner, high energy/water reliability, quality laboratory, IP/licensing review and export-grade logistics are bankable.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Solar module front glass	Low-iron glass composition, thickness, transmittance, pattern/coating, temper strength, dimensions, defect limit and packing	Solar-module manufacturers, renewable-energy projects, regional module exporters and infrastructure buyers

Final capacity, process, resource quality, utilities, permit conditions, emissions, acceptance test and commercial terms require independent engineering review before any order.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Low-iron glass feed/batch control	Prepares optical glass	Iron and transmittance
2	Patterning/coating system	Creates solar surface	Texture/coating uniformity
3	Tempering furnace	Strengthens module glass	Stress and flatness
4	Optical/mechanical inspection	Controls performance	Transmittance and defects
5	Packing/traceability system	Protects released sheets	Size and handling

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 photovoltaic solar-glass factory equipment.



Made-in-China supplier reference: second real machine configuration for photovoltaic solar-glass factory.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Qualified low-iron glass or silica batch, coatings/etchants where specified, process water, furnace consumables, packaging, laboratory standards and spare parts

Utilities & infrastructure

- Bankable electricity/fuel/water plans, process cooling and treatment, plant fire safety, laboratory, covered stores and qualified operation team
- Environmental permits, emissions control, waste route, maintenance workshop, critical spares and site-specific safety systems

Quality, safety and environmental controls

- Validate glass/feed chemistry, module customer specifications, transmittance/strength targets, coating process rights, energy/water and export logistics
- Control optical clarity, pattern/coating uniformity, furnace curve, stress, bow, dimensions, defects and packaging
- Test transmittance, haze/pattern where specified, thickness, temper strength/fragmentation, flatness, defects and traceability

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

Solar glass needs a bankable module customer and a repeatable optical-performance process. It should not be presented as a small local glazing workshop.

Component	Indicative range	Notes
Glass feed, patterning/coating and handling	US\$90m-300m	Feed and technology route
Tempering, inspection and packing	US\$45m-160m	Sheet size/output
Utilities, lab, permits and installation	US\$50m-180m	Optical/compliance critical
Indicative strategic project total	US\$185m-640m	Float-glass plant, land, finance 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

- float-glass-manufacturing
- integrated-architectural-tempered-laminated-glass