

Copper Conductor & Power-Cable Factory

Complete Turnkey Business Proposal



Made-in-China supplier reference: real copper conductor & power-cable 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 cable manufacturing that draws copper rod, anneals and bunches conductors, applies insulation and sheathing, armours where required, tests electrical performance and packs compliant power cables.

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

Develop only after copper procurement/hedging, approved cable standards, reliable power, insulation-compound supply, fire/safety requirements, laboratory capability, utility/contractor demand and qualified cable-manufacturing support are confirmed.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Copper conductors and power cables	Conductor cross-section, copper grade, insulation/sheath compound, voltage rating, armour, standard, test and drum length	Utilities, construction contractors, solar installers, factories, distributors and infrastructure projects

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	Copper rod drawing/annealing	Makes conductor wire	Diameter and conductivity
2	Stranding/bunching	Builds flexible conductor	Lay and resistance
3	Extrusion insulation/sheathing	Applies polymer protection	Thickness and concentricity
4	Armouring/jacketing	Adds specified mechanical protection	Armour and finish
5	High-voltage/electrical laboratory	Releases compliant cable	Resistance, withstand and dimensions

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 copper conductor & power-cable factory equipment.



Made-in-China supplier reference: second real machine configuration for copper conductor & power-cable factory.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Copper rod, PVC/XLPE/PE compounds, fillers, armour steel/aluminium where specified, printing inks, drums, packaging, water/cooling and laboratory consumables

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

- Verify copper source/price risk, target standards, voltage range, compound quality, lab/test equipment, customer approvals and fire-safety rules
- Control wire drawing, annealing, conductor resistance, strand lay, extrusion temperature, insulation thickness, spark test, armour and marking
- Test conductor resistance, dimensions, insulation/concentricity, spark/withstand, flame test where specified, length and drum quality

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

Cable projects must control copper exposure, standards and testing from day one. A cheaper line without a valid test laboratory will not win utility or contractor work.

Component	Indicative range	Notes
Drawing, annealing and stranding	US\$18m-60m	Conductor range
Extrusion, armouring, jacketing and reels	US\$25m-85m	Voltage/product portfolio
Testing, utilities and installation	US\$15m-50m	Standards-critical
Indicative strategic project total	US\$58m-195m	Copper inventory, land and finance 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

- wire-harness-assembly-line
- power-distribution-panel