ELECTRICAL WORKS AT NEWLY BUILT SURJANI TOWN BILLING ZONE

SCOPE OF WORK

1. GENERAL

1	Purpose	The work comprises providing, supplying, installing, fixing, testing and commissioning of computer power points and 2-ton air-conditioner power points, installation of SSGC-supplied power cables, installation of 3/4-inch channel patti with contractor-supplied accessories, provision/installation of required distribution-board accessories, and complete testing and commissioning of the circuits as detailed in the BOQ.
2	Site Verification	The Contractor shall visit the site before commencement, verify existing electrical infrastructure, routes, dimensions, DB capacity, circuit locations, access conditions and point locations, and coordinate the final installation arrangement with SSGC's authorized representative. Any discrepancy affecting quantity, routing or installation shall be reported before execution.
3	Applicable Requirements	All work shall comply with the BOQ,SSGC instructions, applicable Pakistan electrical/safety requirements, and the latest applicable IEC/BS standards for low-voltage installations, wiring accessories, protective devices and testing. Where requirements conflict, the more stringent requirement shall apply subject to SSGC approval.

2. INSTALLATION REQUIREMENTS

4	Cable routing and workmanship	Cables shall be routed neatly through the approved channel patti, adequately supported and protected from mechanical damage. Separate/segregate power wiring from communication/data wiring where required. Cables shall not be stretched, crushed, sharply bent or left with exposed conductors. All terminations shall be mechanically secure and electrically sound.
5	Terminations and identification	All circuit ends shall be terminated using suitable lugs/ferrules/termination accessories as applicable. Each circuit shall be permanently identified at the DB and point end using durable labels. Phase, neutral and protective-earth conductors shall be correctly identified and maintained throughout the installation.
6	Earthing and protection	Protective earthing shall be continuous and correctly terminated. All exposed conductive parts and applicable metallic accessories shall be bonded/connected in accordance with the approved electrical arrangement and applicable standards. RCCB/RCBO protection, where specified/approved, shall be tested for correct operation.
7	Coordination	Contractor shall coordinate with SSGC's Electrical/Services representative before shutdowns, DB modifications, drilling, routing near existing services or energization. No live work shall be undertaken unless specifically authorized under the applicable safety procedure.

3. COMPLETION/ HANDOVER

8	Cleaning and reinstatement	After installation, Contractor shall remove cable off-cuts, packaging, drilling debris and surplus materials, clean the work area, close unused openings and make good minor damage caused by the work, subject to SSGC approval.
9	Test records	Contractor shall submit test results for insulation resistance, continuity, polarity, earth continuity and RCCB/protective-device operation as applicable.
10	As-built information	On completion, Contractor shall provide an updated circuit/DB schedule and marked-up route/point information reflecting actual installed circuits, point identification and protective-device allocation, where applicable.
11	Completion	The work shall be considered complete only after successful testing, correction of punch-list items, satisfactory energization/commissioning and written acceptance by SSGC's authorized representative.

Sui Southern Gas Co. Ltd. Services Dept. Head Office, Karachi

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SPECIAL TERMS & CONDITIONS

1. CONTRACTOR'S RESPONSIBILITIES

1	Site survey and verification	The Contractor shall verify all site conditions and quantities before execution. BOQ quantities are for tendering and measurement; actual installation shall follow the approved site requirement and SSGC's instructions. No additional quantity or variation shall be executed without prior written approval from SSGC.
2	Complete responsibility	Rates shall be deemed inclusive of labour, supervision, tools, access equipment, transportation within the site, consumables, fixing hardware, termination materials, labels, testing instruments, minor accessories and all incidental work required to deliver a complete functioning installation, except materials expressly identified as being supplied by SSGC.
3	SSGC-supplied materials	4 sq.mm cable, 6 sq.mm cable and 3/4-inch channel patti shall be supplied by SSGC as stated in the BOQ. The Contractor shall inspect such materials upon receipt, promptly report shortages/damage, protect them from damage and use them economically. Loss or damage caused by Contractor negligence shall be made good by the Contractor.

2. MATERIAL & TECHNICAL REQUIREMENTS

4	General material approval	All Contractor-supplied electrical materials shall be new, unused, of good commercial quality, suitable for the intended duty and from an approved/reputable manufacturer. Samples/catalogues/datasheets shall be submitted when requested. SSGC may reject materials that are damaged, counterfeit, substandard or inconsistent with the approved specification.
5	13A socket outlets	13A switched socket outlets shall be heavy-duty, suitable for 230 V, 50 Hz service, complete with suitable back box and accessories. Socket construction, terminals and faceplate shall be robust and suitable for continuous office use. Manufacturer and model shall be subject to SSGC approval.
6	AC isolator / socket arrangement	AC power points shall use a suitable heavy-duty isolator/socket arrangement appropriate for the connected 2-ton AC unit. The isolator shall be suitably rated for the actual load, clearly marked and readily accessible. Final protective-device and isolator ratings shall be confirmed against the equipment nameplate and approved electrical design.



7	MCBs / RCCB / isolator	MCBs shall have suitable pole configuration, voltage rating and breaking capacity for the installation and shall be selected in coordination with cable ampacity and connected load. RCCB/RCBO protection, where required, shall have suitable sensitivity and rating for the circuit and shall provide appropriate residual-current protection. Final ratings shall be approved by SSGC; Contractor shall not arbitrarily increase protective-device ratings to overcome nuisance tripping.
8	DB accessories	Busbars, neutral/earth links, lugs, ferrules, internal wiring and labels shall be suitably rated, securely fixed and neatly arranged. Unused ways shall be safely blanked where applicable. Circuit schedules shall be updated to match the final installation.
9	Channel patti accessories	All accessories for SSGC-supplied channel patti—including bends, sockets, couplers, junctions, saddles/clamps, screws, rawl plugs and similar hardware—shall be supplied by the Contractor and shall be compatible with the channel size and material. Finished routes shall have no sharp edges or exposed fixings likely to damage cables.
3. EXECUTION & SAFETY		
10	Workmanship	Installation shall be performed by competent electrical personnel under qualified supervision. Connections shall be tight, secure and properly insulated. Cable routes shall be neat and accessible for maintenance. Any defective installation shall be dismantled/reworked and retested at the Contractor's cost.
11	Electrical safety	The Contractor shall comply with SSGC site safety rules, permit-to-work/LOTO requirements where applicable, PPE requirements and safe isolation procedures. Work on energized circuits is prohibited unless specifically authorized in accordance with SSGC procedures. The Contractor is responsible for the safety of its personnel and equipment.
12	Protection of existing services	Before drilling, fixing or routing, the Contractor shall locate and protect existing electrical, communication, HVAC, fire alarm, firefighting and other services. Damage to existing installations caused by Contractor operations shall be repaired/replaced by the Contractor to SSGC's satisfaction without additional cost.
13	Shutdowns	Required shutdowns shall be planned in advance and coordinated with SSGC. Contractor shall not interrupt power to occupied areas or critical equipment without written/authorized clearance. Work shall be scheduled to minimize disruption to normal operations.
4. INSPECTION, TESTING & ACCEPTANCE		
15	Inspection points	SSGC may inspect materials before installation and workmanship during installation. Contractor shall provide reasonable notice before covering/concealing work where inspection is required. Approval of any stage does not relieve the Contractor of responsibility for compliance and performance.
16	Mandatory tests	At minimum, as applicable to each completed circuit, Contractor shall perform continuity, polarity, insulation resistance, earth continuity and functional/protective-device tests. Test values shall be recorded and submitted. Test voltage and acceptance criteria shall follow the applicable standard, equipment manufacturer's requirements and SSGC-approved procedure.



SPECIAL TERMS & CONDITIONS

17	Defects / punch list	Any defects, loose connections, incorrect identification, failed tests, damaged accessories or workmanship deficiencies identified during inspection shall be rectified by the Contractor within the period specified by SSGC. Re-testing after rectification shall be at no additional cost.

5. PAYMENT

18	Rate inclusions	Tendered rates shall include all labour, supervision, tools, transport, consumables, fixing accessories, termination materials, testing, commissioning, identification, documentation and incidental requirements necessary to complete the respective BOQ item, except explicitly SSGC-supplied materials.
19	Variations	No variation, substitution or extra work shall be claimable unless instructed/approved in writing by SSGC. Contractor shall notify SSGC before proceeding with any condition that may affect cost, quantity, programme or technical compliance.

6. WARRANTY & GENERAL CONDITIONS

22	Warranty	Unless a longer period is specified in the purchase order/contract, the Contractor shall warrant its workmanship and Contractor-supplied materials against defects for a minimum of 12 months from final acceptance. Defects attributable to workmanship or supplied materials shall be rectified/replaced without additional cost.
23	Programme	The Contractor shall coordinate its work programme with SSGC and shall provide sufficient manpower and supervision to complete the work within the contractual schedule. Delays caused by lack of labour, tools, consumables or poor coordination shall remain the Contractor's responsibility.
25	Final acceptance	Final acceptance shall be subject to completion of the entire scope, satisfactory testing/commissioning, submission of required records, rectification of punch-list items, removal of waste and formal acceptance by SSGC's authorized representative.

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ELECTRICAL WORKS AT NEWLY BUILT SURJANI TOWN BILLING ZONE

Bill of Quantity (BOQ)

S#	Description	Quantity	Unit	Rate	Amount
1	Providing, Supplying, Installing, Fixing, Testing and Commissioning of Computer Power Point complete with 4 sq.mm copper cable, 13A switched socket outlet, suitable back box and related accessories	28	point		
2	Installing, Fixing, Testing and Commissioning of 2-Ton AC Power Point (8 no.) complete with 6 sq.mm copper cable, suitable heavy-duty AC isolator/socket arrangement, back box and related accessories	8	point		
3	Installing 4 sq.mm 1-core copper cable of approved/ good quality make for computer power circuits, including identification and required allowance for termination (cable will be provided by SSGC)	840	meter		
4	Installing 6 sq.mm 1-core copper cable of approved/ good quality make for 2-Ton AC power circuits, including identification and required allowance for termination (cable will be provided by SSGC)	320	meter		
5	Installing 3/4 " channel patti with complete accessories including bends, sockets, couplers, junctions, saddles/ clamps, screws, rawl plugs and other necessary fixing material, complete in all aspects (only channel patti will be provided by SSGC)	1000	RFT		
6	Providing, Supplying, Installing, Fixing, Testing and Commissioning of Distribution board/ Power Distribution accessories including suitable MCBs, RCCB/isolator, busbar, neutral/ earth links, cable lugs, ferrules, labels and internal wiring/ accessories, complete in all respect	1	job		
7	Testing, Checking, Identification, Termination, Insulation Resistance Testing, Polarity/ Continuity checking and final commissioning of complete computer and AC power circuits	1	job		

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