

SCOPE OF WORK

TENDER DESCRIPTION	Supply, Installation, Testing, and Commissioning (SITC) of Air Conditioning Units at various GEL locations.
CONTRACT DURATION	Two (2) years from the date of issuance of the Purchase Order/Work Order.
APPLICABILITY OF CONTRACT	This contract shall be applicable across all GEL locations as specified in the Purchase Order or as may be instructed by GEL from time to time.

Scope of work:

1.1. The contractor shall supply, install, test, and commission make and model Air Conditioning units across GEL offices as specified in the Purchase Order (PO).

1.2 The contractor shall visit the site and submit a site assessment report, including delivery planning and a detailed timeline for the execution of installation and commissioning activities.

1.3 The contractor shall mobilize adequate manpower, tools, tackles, and other resources required for the timely completion of the work. All lifting tools and tackles used by the contractor shall be duly tested and certified by an authorized agency.

1.4 The contractor shall provide all necessary materials, auxiliary equipment, consumables, and accessories required for the successful completion of the work. The contractor shall also ensure the safe transportation and delivery of the AC Units to the designated locations in accordance with the requirements and specifications stipulated in the Purchase Order.

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1.5 A Bill of Materials (BOM) including the list of items procured from external agencies shall be submitted.

1.6 At the time of AC installation, the contractor shall obtain confirmation from the GA Admin regarding the availability and adequacy of power load capacity at the respective location prior to installing the AC units at the site.

1.7 The contractor shall ensure that no damage is caused to the building structure or its aesthetic appearance during installation. Any damage caused during the course of work shall be restored to its original condition by the contractor at no additional cost to GEL.

1.8 All supplied Air Conditioning Units shall be new, genuine, and strictly in accordance with the specifications specified in the Purchase Order. Any deviation shall be unacceptable. Furthermore, any scratches, dents, or physical damage to the units, particularly the indoor units, during transportation or installation shall not be acceptable, as such defects adversely affect the appearance and aesthetics of the installation area.

1.9 Upon completion of the work, the contractor shall remove all debris, packing materials, and waste from the site and ensure that the area is handed over to GEL in a clean and orderly condition.

1.10 In the absence of specific specifications for any material or work, the relevant Indian Standard (IS) Specifications shall be applicable and shall be followed.

1.11 Installation of Air Conditioning Units at elevated locations, whether inside or outside the premises, shall be the sole responsibility of the contractor. The contractor shall obtain prior approval from the concerned GEL representative/User Department before undertaking any work at height or using scaffolding, ladders, lifting platforms, or similar arrangements.

1.12 The quoted rates shall remain firm and valid for a period of two (2) years from the date of the Rate Contract/Agreement. No escalation in prices, labour charges, material costs, transportation charges, taxes (except statutory variations), or any other costs shall be permitted during this period. GEL reserves the right to issue Purchase Orders for any quantity, as and when required, at its sole discretion.

Note: Any work not specifically mentioned herein but reasonably implied and necessary for the successful supply, installation, testing, and commissioning of the Air Conditioning Units shall be deemed to be included within the scope of work and shall be carried out by the contractor without any additional cost to GEL.

2. Technical Description and Specifications:

The following is a brief description of each item allied to or forming part of the Air Conditioning System. All works shall be carried out in accordance with the specifications mentioned below:

2.1. Evaporator and Condenser Units:

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2.2 All existing piping, fittings, accessories, and attachments at the installation locations that are no longer required shall be dismantled and removed by the contractor. The area shall be thoroughly cleaned, and any minor civil works, including surface preparation, repairs, touch-up painting, or finishing necessary for installation of the indoor units, shall be carried out by the contractor.

2.3 The outdoor condensing units shall be installed on rooftops or at locations identified by the local Admin In-charge. Refrigerant piping and electrical cabling between the indoor and outdoor units shall be routed through existing cable trays, conduits, or approved pathways and shall remain concealed to the maximum extent possible. Any deviation from the proposed routing shall require prior written approval from the concerned GEL representative.

2.4 Electrical connections to all new AC units shall be taken from the most appropriate electrical panels, ensuring safe operation and preventing any risk of short-circuit or electrical hazards. All electrical works shall be carried out in accordance with relevant electrical safety standards and applicable regulations.

3. REFRIGERANT GRADE COPPER TUBING:

3.1 Supply, installation, testing, and commissioning of refrigerant grade copper tubing interconnecting the condensing and evaporative units through ceiling/wall routes. The tubing shall be properly insulated with suitable insulation material to prevent heat loss, and shall be of appropriate size as per standard HVAC specifications and manufacturer recommendations.

4. CONTROL AND POWER CABLES, MCB:

4.1 Supply, installation, testing, and commissioning of power and control cables consisting of PVC sheathed flexible copper wires complete with earthing (if required). Since the scope involves replacement of existing AC units, earthing may already be available at site and shall be utilized wherever feasible. The cables shall be installed between evaporative and condensing units, between AC units and the power supply panel, and for all other electrical connections required for the system.

Supply and installation of ON/OFF control units, MCBs, and associated electrical fittings shall be carried out at suitable and easily accessible locations, wherever required. All external cables shall be properly routed through cable trays.

5. DRAIN PIPING:

5.1 Supply, installation, testing, and commissioning of rigid heavy-duty UPVC drain piping (20/25/32 mm diameter) suitable for 10 kg/cm² pressure rating for evaporative units. The piping shall include all necessary accessories such as elbows, tees, reducers, brass connectors between GI and PVC pipes, etc.

Drain piping shall be laid as per site conditions and connected to the existing drainage system. It shall be ensured that the drain outlet terminates at a location where water discharge does not damage any installation or affect the aesthetic appearance of the building.

6. AIR DISTRIBUTION:

6.1 The supplied indoor units shall be connected to the existing ducting system wherever applicable. Any additional ducting required for proper connection and air distribution shall be supplied, fabricated, and installed by the contractor. The design and specifications of the hook-up ducting shall be submitted to the Engineer-in-Charge (EIC) for review and approval prior to fabrication wherever feasible. 5.2 Minor modifications to the existing ducting infrastructure, if required for proper air distribution across all rooms/chambers, shall be carried out by the contractor under the scope of this contract.

7. OUTDOOR STANDS:

7.1 Providing, fabricating, and erecting MS (Mild Steel) structures as required at site for installation of outdoor units. The structure shall incorporate suitable MS angles, flats, bars, channels, welded mesh, and sections, including cutting, welding, grinding, and finishing.

7.2 The structure shall be coated with one coat of red oxide primer and installed as per the direction of the Engineer-in-Charge, including necessary grouting, cementing, plastering, and finishing to ensure safety and protection of the outdoor units.

8. CONTROL:

8.1 Wherever applicable, microprocessor-based controllers with LED displays type controllers shall be installed. The control system shall be located at an appropriate and accessible position to ensure clear visibility and ease of operation.

9. CIVIL WORKS:

9.1 All necessary civil works, including wall cutting, drilling, core cutting, chasing, grouting, pipe routing, cable routing, patch repairs, plastering, and restoration work required for installation of the AC system, shall be carried out by the contractor within the scope of this contract.

10. WORKMANSHIP:

10.1 Installation shall be carried out in accordance with best engineering practices and to the satisfaction of the GEL Site Engineer/Safety Officer, ensuring proper operation, vibration-free and noise-free performance. Any damage caused to walls, floors, tiles, ceilings, or building structures during installation shall be repaired and restored by the contractor at their own cost.

Apart from other operational and safety controls, provisions shall also be made for manual reset with HP/LP cut-out and non-recycling control relay. All supplied components and parts shall be original and genuine.

11. TESTING:

The actual refrigeration capacity of the evaporative unit as tested at the site shall not be less than the capacity specified under the conditions mentioned in the

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manufacturer's technical literature forming part of the contract, and in no case shall it be lower than the capacity specified in the tender.

12. ON-SITE SUPPORT:

The vendor shall provide free preventive service once every four months (three services per year) during the warranty period of 12 months from the date of handing over the system to GEL.

In case of any issue related to system functionality (hardware or software), GEL shall inform the vendor. The vendor shall depute a qualified service engineer within 24 hours of intimation, without any additional cost to GEL, for troubleshooting and resolution of the issue.

13. WARRANTY:

The complete Air Conditioning System (Indoor and Outdoor Units) shall carry a minimum warranty of 12 months from the date of successful installation and commissioning.

Additionally, the compressor shall be covered under warranty for a minimum period of five (5) years.

The warranty shall cover repair and replacement of all defective components, including but not limited to evaporator coils, filters, PCB, refrigerant gas refilling, lubricant oil, and other associated parts, at no additional cost to GEL during the warranty period. The contractor shall ensure prompt service support to maintain full system functionality during the warranty period.

14. PENALTY:

14.1 Delay in providing scheduled service i.e. once every four months (three services per year) – Rs. 1,000 for every 24 hours of delay.

14.2 Supply of damaged machines/components resulting in delayed installation – Rs. 500 per day.

14.3 Failure to meet installation timelines – Rs. 25 per day until completion of work.

14.4 Damage to GEL property or assets – As per actual cost of the damaged property/asset.

14.5 Repeated negligence in after-sales service (observed 2–3 times) – Rs. 200 per incident.

15. BUY-BACK OF OLD UNITS:

15.1 The contractor shall purchase all indoor and outdoor AC units removed under this contract at fair market buy-back rates, as specified in the Schedule of Rates (SOR).

16. TERMINATION:

The Service Provider shall strictly comply with all the terms and conditions of the Contract. In the event of a breach of any contractual term, the Owner (GEL) reserves the right to terminate the Contract without prior notice. In such a case, the Service Provider shall not be entitled to claim any compensation for any loss or damage arising from such termination. Any legal dispute arising out of or in connection with this Contract shall be subject to the exclusive jurisdiction of the courts at Ahmedabad.

Annexure-1: Specifications

Note:

1. Supply and Maintenance of Air Conditioning Units Brand Uniformity: The bidder must supply Air Conditioners from a single Original Equipment Manufacturer (OEM) brand only.
2. Technical Compliance: All units must strictly adhere to the technical specifications provided in the tender document. No deviations from the specified capacity, energy rating, or features will be accepted.

Annexure – 1

The Standard Specifications for 3 Star and Above Split AC - Non Inverter Heavy Duty Commercial on Latest BEE (Bureau of Energy Efficiency) Standards and ISI Marked Accepted Leading Commercial Brand - O General , Mitsubishi Heavy Duty , Mitsubishi Electric , Blue Star , Voltas , Daikin , Hitachi , Carrier

Sr.No	Descriptions	For 1.0 TR	For 1.5 TR	For 2.0 TR	For 2.5 TR
1	Type	Wall Mount Split AC	Wall Mount Split AC	Wall Mount Split AC	Wall Mount Split AC
2	Capacity	1.0 TR	1.5 TR	2.0 TR	2.5 TR
3	Star Rating - BEE	3 star and above	3 star and above	3 star and above	3 star and above
4	Compressor	Without Inverter	Without Inverter	Without Inverter	Without Inverter
5	Compressor Type	Fixed Speed Rotary / Fixed Speed Scroll /Tropical Rotary / Twin Rotary	Fixed Speed Rotary / Fixed Speed Scroll /Tropical Rotary / Twin Rotary	Fixed Speed Rotary / Fixed Speed Scroll /Tropical Rotary / Twin Rotary	Fixed Speed Rotary / Fixed Speed Scroll /Tropical Rotary / Twin Rotary
6	Compressor Warranty	5 Years	5 Years	5 Years	5 Years
7	PCB Warranty	1 Years	1 Years	1 Years	1 Years
8	ISEER Value	3.5 to 3.99 W/W	3.5 to 3.82 W/W	3.5 to 3.80	3.5 to 3.75
9	Colling Capacity	3400 to 3500 W	5100 to 5275 W	6200 to 7050 W	8200 to 8800 W
10	Power Consumption	850-1050 W	1350 to 1450 W	1850 to 2000 W	2400 to 2600 W
11	Annual Units Consumptions	700-750 Units	980 to 1115 W	1250 to 1700 W	1550 to 1900 W
12	Condenser Coil	100 % Copper	100 % Copper	100 % Copper	100 % Copper
13	Indoor Noise Level	32 to 50 DB	36 to 50 DB	38 to 50 DB	42 to 52 DB
14	Refrigerant	R-32	R-32	R -32 / R - 410 A	R -32 / R - 410 A
15	Max Ambient Temp	Up to - 52 C	50 - 52 C	50 - 55 C	Up to 56 C (Tropical)

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16	Air Flow Rate (HIGH)	400 to 450 CFM	600 to 700 CFM	750 to 850 CFM	900 to 1050
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Annexure – 1

The Standard Specifications for 3 Star and Above Cassette AC - Non Inverter Heavy Duty Commercial on Latest BEE (Bureau of Energy Efficiency) Standards and ISI Marked Accepted Leading Commercial Brand - O General , Mitsubishi Heavy Duty , Mitsubishi Electric , Blue Star , Voltas , Daikin , Hitachi , Carrier

Sr.No	Descriptions	For 2.0 TR	For 2.5 TR	For 3.0 TR	For 4.0 TR
1	Type	Ceiling Mount Cassette Split AC	Ceiling Mount Cassette Split AC	Ceiling Mount Cassette Split AC	Ceiling Mount Cassette Split AC
2	Capacity	2.0 to 2.2 TR	2.5 to 2.8 TR	3.0 to 3.8 TR	4.0 to 4.8 TR
3	Star Rating - BEE	3 star and above	3 star and above	3 star and above	3 star and above
4	Compressor	Without Inverter	Without Inverter	Without Inverter	Without Inverter
5	Compressor Type	High EER Rotary	High EER Rotary	Scroll Rotary / Twin Rotary	Scroll
6	Compressor Warranty	5 Years	5 Years	5 Years	5 Years
7	PCB Warranty	1 Years	1 Years	1 Years	1 Years
8	ISEER Value	3.3 to 3.50 W/W	3.20 to 3.60 W/W	3.10 to 3.60 W/W	3.0 to 3.60 W/W
9	Colling Capacity(W)	7000 to 7200 W	8400 to 8800 W	10500 to 10800 W	14000 to 14200 W
10	Cooling Capacity (BTU/HR)	24000	30000	36000	48000
11	Rated Power Consumption Input (W)	2100-2300 W	2600 to 2800 W	3200 to 3700 W	4400 to 5100 W
12	Annual Units Consumptions (KWH)	1450	1850	2300	3200
13	Condenser Coil	100 % Copper	100 % Copper	100 % Copper	100 % Copper

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14	Indoor Noise Level (H/M/L)	34 to 42 DB	37 to 45 DB	40 to 48 DB	44 to 52 DB
15	Refrigerant	R-32 / R-410 A	R-32 / R-410 A	R-32 / R-410 A	R-32 / R-410 A
16	Max Ambient Temp	50 to 52 C	50 to 52 C	50 to 52 C	50 to 52 C
17	Air Flow Rate (CFM)	600 to 800 CFM	850 to 1000 CFM	1000 to 1200 CFM	1300 to 1500

Annexure – 1

The Standard Specifications for 3 Star and Above Tower AC - Non Inverter Heavy Duty Commercial on Latest BEE (Bureau of Energy Efficiency) Standards and ISI Marked Accepted Leading Commercial Brand - O General , Mitsubishi Heavy Duty , Mitsubishi Electric , Blue Star , Voltas , Daikin , Hitachi , Carrier

Sr.No	Descriptions	For 2.0 TR	For 2.5 TR	For 3.0 TR	For 4.0 TR
1	Type	Tower / Floor Standing	Tower / Floor Standing	Tower / Floor Standing	Tower / Floor Standing
2	Capacity	2.0 to 2.2 TR	2.5 to 2.8 TR	3.0 to 3.8 TR	4.0 to 4.8 TR
3	Star Rating - BEE	3 star and above	3 star and above	3 star and above	3 star and above
4	Compressor	Without Inverter	Without Inverter	Without Inverter	Without Inverter
5	Compressor Type	High EER Rotary	High EER Rotary	High Eff Scroll Rotary	Heavy Duty Scroll Rotary
6	Compressor Warranty	5 Years	5 Years	5 Years	5 Years
7	PCB Warranty	1 Years	1 Years	1 Years	1 Years
8	ISEER Value	3.10 to 3.50 W/W	3.05 to 3.20 W/W	2.95 to 3.10 W/W	2.90 to 3.00 W/W
9	Colling Capacity(W)	7000 to 7200 W	8400 to 8800 W	10500 to 10800 W	14000 to 14200 W
10	Cooling Capacity (BTU/HR)	24000	30000	36000	48000
11	Rated Power Consumption Input (W)	2100 to 2300 W	2700 to 2900 W	3400 to 3700 W	4600 to 5100 W
12	Annual Units Consumptions (KWH)	1100 to 1200	1350 to 1500	1750 to 1950	2400 to 2750

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GUJARAT ENERGY

13	Condenser Coil	100 % Copper	100 % Copper	100 % Copper	100 % Copper
14	Indoor Noise Level (H/M/L)	45 to 50 DB	48 to 54 DB	52 to 56 DB	54 to 58 DB
15	Refrigerant	R-32 / R-410 A	R-32 / R-410 A	R-32 / R-410 A	R-32 / R-410 A
16	Max Ambient Temp	50 to 52 C	50 to 52 C	52 to 54 C	54 to 58 C
17	Air Flow Rate (CFM)	750 to 900 CFM	950 to 1100 CFM	1150 to 1300 CFM	1400 to 1600