

FRIDGE AND AC REPAIRING

1. INTRODUCTION

The "Fridge and AC Repairing" project in Uttarakhand, India, aims to provide essential repair and maintenance services for refrigerators and air conditioning systems in both residential and commercial settings. This micro and small investment project intends to address the growing demand for skilled technicians to troubleshoot, repair, and maintain cooling appliances. The business targets both residential and commercial settings, recognizing the widespread use of refrigerators and AC systems across various sectors. Residentially, these appliances are essential for preserving food and maintaining comfortable living conditions, especially during the hotter months. Commercially, refrigeration and air conditioning are vital for industries such as hospitality, healthcare, food processing, and retail, where the proper functioning of cooling systems is critical for operations and customer satisfaction.

2. SERVICE & ITS APPLICATION

The primary products and services offered by this project include:

- **Refrigerator Repair and Maintenance:** Repairing and servicing of domestic and commercial refrigerators, addressing issues like cooling problems, compressor faults, gas refills, and electrical malfunctions.
- **Air Conditioner (AC) Repair and Servicing:** Diagnosing and fixing AC-related problems, such as cooling inefficiency, compressor issues, refrigerant refills, and electrical faults.
- **Installation Services:** Providing installation services for new refrigerators and air conditioners.
- **Annual Maintenance Contracts (AMCs):** Offering comprehensive maintenance contracts for regular servicing and preventive checks.
- **Spare Parts Sales:** Retailing essential spare parts and components for cooling appliances.

These services are vital for ensuring the proper functioning of refrigeration and cooling systems, especially in Uttarakhand's varying climatic conditions, where access to reliable refrigeration and air conditioning is essential.

3. DESIRED QUALIFICATION FOR PROMOTER

To successfully establish and operate a "Fridge and AC Repairing" business in Uttarakhand, the promoter should possess several key qualifications and skills. Firstly, technical proficiency in diagnosing and repairing refrigerators and air conditioning systems is essential. This includes having training or certification in appliance repair to ensure quality service. Additionally, basic business acumen is crucial, encompassing knowledge of customer service, pricing strategies, and financial management to sustain and grow the business. Moreover, familiarity with the local market dynamics, including the potential customer base and competitors, is advantageous. Understanding legal and regulatory requirements for operating a repair service business is also necessary, alongside good communication and interpersonal skills for effective customer interaction.

4. INDUSTRY OUTLOOK AND TRENDS

The "Fridge and AC Repairing" industry in Uttarakhand is experiencing notable trends and advancements. Firstly, there's a growing demand driven by the increasing number of households and businesses in the region. Additionally, there's a rising focus on energy efficiency, necessitating maintenance and optimization of existing appliances. Technicians must keep abreast of technological advancements in modern appliances to provide effective repair services. Moreover, there's a shift towards sustainability, with consumers preferring eco-friendly refrigerants and responsible disposal practices. Many repair businesses are establishing online presences to enhance accessibility, although competition remains high, emphasizing the importance of quality service and reliability for success.

The HVAC industry is constantly evolving with new technologies and the demand for energy-efficient cooling solutions. Some trends include:

- Connectivity and data: Improving control with connectivity and data
- Eco-friendly HVAC systems: Demand for eco-friendly HVAC systems is increasing
- Software automation: Implemented to improve business functions
- Smart HVAC technologies: Designed for automation
- Ductless HVAC systems: HVAC systems are going ductless

The HVAC technician job market is expected to grow by 13.6% between 2014 and 2024. By 2030, the HVAC field will experience an 8% increase in job growth.

5. MARKET POTENTIAL AND MARKETING ISSUES; IF ANY

The market potential for "Fridge and AC Repairing" services in Uttarakhand, India, is substantial due to increasing appliance ownership, climate variability, urbanization, tourism, and rising consumer awareness. However, entrepreneurs face marketing challenges such as competition, building customer trust, establishing an online presence, local marketing, and delivering exceptional customer service. Strategies include offering quality service, transparent pricing, prompt responses, and competitive pricing to stand out, leveraging online platforms for visibility, and implementing local marketing tactics like distributing flyers and collaborating with local businesses for referrals.

- Parvez Refrigeration - (AC Service): Address: 86, Saharanpur Rd, Majra, Dehradun, Shewala Kala, Uttarakhand 248002. Phone: 075007 86611
- Smart Refrigeration and air Conditioner: Address: Uday Raj Hindu inter College Road , Khan Market, Katoratal Rd, near Sbi ATM, Kashipur, Uttarakhand 244713. Phone: 096342 89891
- Garhwal electro - Ac, Washing Machine, Ro, Fridge service & repair: Address: Saharanpur Rd, Sewla Kalan, Majra, Dehradun, Shewala Kala, Uttarakhand 248171. Phone: 075000 39939

6. RAW MATERIAL REQUIREMENTS

The "Fridge and AC Repairing" business primarily requires tools, equipment, and spare parts for servicing cooling appliances. Common raw materials and requirements include:

- **Diagnostic Tools:** Tools such as multimeters, refrigerant leak detectors, pressure gauges, and thermometers are essential for troubleshooting and diagnosing issues.

- **Spare Parts:** Maintain a stock of commonly used spare parts like capacitors, compressors, condenser coils, evaporator coils, fans, motors, and refrigerants for both refrigerators and air conditioners.
- **Cleaning Supplies:** Refrigerator and AC servicing often involves cleaning coils, filters, and other components. Cleaning agents and brushes are necessary.
- **Safety Equipment:** Safety gear, including gloves, safety glasses, and masks, should be available for technicians to ensure their safety while handling appliances and refrigerants.
- **Transportation:** A vehicle for transporting tools and equipment to customers' locations is essential for on-site repairs.
- **Computer and Software:** A computer with internet access is useful for managing appointments, tracking inventory, and handling administrative tasks. Software for invoicing and managing customer data is also beneficial.
- **Office Supplies:** Office supplies like stationery, appointment books, and invoices are necessary for administrative tasks.

Ensure a well-organized inventory management system to keep track of spare parts and tools, preventing delays in servicing due to unavailability of essential materials.

7. BUSINESS PROCESS

The "Fridge and AC Repairing" business does not involve traditional manufacturing processes. Instead, it revolves around service and maintenance activities. The typical steps involved in the repair and servicing process are as follows:

1. **Customer Inquiry:** Receive inquiries from customers regarding refrigerator or air conditioner issues through phone calls, emails, or website inquiries.
2. **Diagnosis:** Schedule a technician's visit to the customer's location. The technician diagnoses the problem using diagnostic tools and expertise.
3. **Estimate:** Provide the customer with an estimate of the repair cost, including labor, spare parts, and any additional charges.
4. **Repair or Maintenance:** Upon customer approval, the technician proceeds with the repair or maintenance work, which may include component replacement, cleaning, or refrigerant recharging.
5. **Quality Check:** After the repair, the technician performs a quality check to ensure that the appliance is functioning correctly.
6. **Billing and Payment:** Generate an invoice detailing the services provided and the total cost. Collect payment from the customer.
7. **Feedback and Follow-Up:** Request feedback from the customer regarding the service quality. Maintain a record of the customer's appliance for future follow-up and maintenance reminders.

ISO 9001, ISO 14001, and ISO 45001 are essential to ensure the quality of their services, minimize environmental impact, and prioritize the health and safety of employees and customers.

8. MANPOWER REQUIREMENT

Sr. No	Particulars	No.	No of month in year	Wages/Salaries per month (Rs. In Lakhs)	Annual Expense (Rs. In Lakhs)
1	Self-employed	1	-	-	-
2	Skilled	4	12	0.2	9.6
3	Unskilled	2	12	0.15	3.6
4	Semi-skilled	2	12	0.1	2.4
	Total				15.60

9. IMPLEMENTATION SCHEDULE

Sr. No.	Activity	Time Required (in months)
1	Acquisition of premises	1
2	Construction (if applicable)	1.5
3	Procurement & installation of Plant & Machinery	2.5
4	Arrangement of Finance	1
5	Recruitment of required manpower	1
6	Total time required (some activities shall run concurrently)	3

10.COST OF PROJECT

Sr. No	Particulars	Annual Expenses (Rs. in lakhs)
1	Pre-operative and preliminary Exp.	0.20
2	Equipment and Furniture Exp.	1.00
3	Working Capital	2.36
	Total Project Cost	3.56

11.MEANS OF FINANCE

Bank-term loans are assumed @ 60 %

Sr. No.	Particulars	Annual Expenses (Rs. in lakhs)
1	Promoter's contribution	1.43
2	Bank Finance	2.14
	Total	3.56

12.LIST OF MACHINERY REQUIRED

A. Machinery

Sr. No.	Particulars	Unit	Per Unit Amount (Rs. in lakhs)	Annual Expenses (Rs. in lakhs)
1	Multimeter	2	0.15	0.30
2	Refrigerant Leak Detector	2	0.08	0.16
3	Pressure Gauge Set	2	0.18	0.36

4	Thermometer	1	0.12	0.12
5	Tool Kit (Screwdrivers, Pliers, etc.)	set	0.25	0.25
6	Refrigerant Recovery Machine	1	0.28	0.28
7	AC Vacuum Pump	1	0.22	0.22
8	Welding Machine	1	0.18	0.18
9	Compressor Test Rig	1	0.25	0.25
10	Tool Chest	1	0.1	0.10
Total Amount				2.22
Tax, Transportation, Insurance etc.				0.22
Electrification Exp.				0.11
Grand Total Amount				2.55

B. Furniture & Equipment

Sr. No	Particulars	Unit	Price per Unit (Rs. in lakhs)	Total Amount (Rs. in lakhs)
1	Laptop/Desktop	1	0.50	0.50
2	Office Desk and Chair	5	0.02	0.10
4	Software for Invoicing and Customer Management	-	0.15	0.15
5	Storage Cabinets	-	0.25	0.25
	Total Rs.			1.00

1. Raj Tools And Equipments
35 Mahalaxmi Estate, Sarkhej Sanand Road,
Sarkhej, Ahmedabad,
Ahmedabad-380007,
Gujarat, India
2. Canon Refrigeration
Shop No. 1 & 2 Baroda Shopping Center Mandvi,
Opposite Lohana Boarding Building,
Navrang Cinema Road, Raopura,
Vadodara-390001,
Gujarat, India
3. Setalvad Bros
Setalvad House, Near Dinbai Tower,
Mirzapur Road, Ahmedabad - 380001,
Gujarat, India

13. SALES REALISATION

Sr. No	Product	Sales in Percentage
1	Refrigerator Repair & Maintenance, Air Conditioner (AC) Repair and Servicing, Installation Services, Annual Maintenance Contracts (AMCs)	100.0%

	Spare Parts Sales etc.	
	Total	100.00%

14. PROFITABILITY CALCULATIONS

Sr. No	Particulars	Annual Expenses (Rs. in lakhs)
A.	Sales realisation	40.50
B.	Cost of production	
i)	Raw materials	12.15
ii)	Utilities	1.60
iii)	Manpower Cost (Salaries/wages)	15.60
iv)	Administrative expenses	0.30
v)	Packaging Cost	0.00
vi)	Material Lost Cost	0.00
vii)	Selling & distribution expenses	1.44
viii)	Repairs & maintenance	0.00
ix)	Rent	2.00
x)	Interest	0.38
xi)	Misc. expenses	0.00
	Total (B)	33.47
	Gross profit/loss (A – B)	7.03
	Less: Depreciation	0.00
C.	PBIT	7.03
D	Income-tax	1.05
E	Net profit/loss	5.97
F.	Repayment (Annual)	0.32
G	Retained surplus (E-F)	5.65

15.BREAKEVEN ANALYSIS

Fixed cost	
Land & Building Rent	2.00
Depriciation	0.42
Interes1t	0.38
Manpower	4.68
Total Fixed cost	7.49
Variable cost	
Raw materials	12.15
Utilities	1.60
ManPower	10.92
Administrative expenses	0.30
Selling & distribution expenses	1.44
Total Variable cost	26.41
Contribution margin	20%
Break-Even Point in Value	37.43

16. STATUTORY/GOVERNMENT APPROVALS

Starting and operating a "Fridge and AC Repairing" business in Uttarakhand, India, involves complying with various statutory and government regulations. Here are some key approvals and licenses that may be required:

- A. Business Registration:** Register your business entity as per the applicable laws (e.g., Sole Proprietorship, Partnership, Private Limited Company).
 - Obtain a Shop and Establishment License from the local municipal authority.
- B. GST Registration:** Register for Goods and Services Tax (GST) if your annual turnover exceeds the threshold limit.
- C. Professional License:** Depending on local regulations, you may need a professional license to offer repair services.
- D. Environmental Clearances:** Ensure compliance with environmental regulations if your operations involve refrigerant handling or disposal.
- E. Safety Standards:** Adhere to safety standards and regulations concerning the handling of refrigerants and electrical equipment.

17. BACKWARD AND FORWARD INTEGRATIONS

A. Backward Integration:

Backward integration involves bringing processes or activities that were previously outsourced in-house to improve control, reduce costs, or enhance efficiency. For a "Fridge and AC Repairing" business in Uttarakhand, you may consider:

1. Spare Parts Procurement: Establishing partnerships with suppliers or manufacturers to directly procure spare parts and components required for repairs, ensuring a steady supply.
2. Technical Training: Setting up an in-house training program to train technicians in-house, reducing reliance on external training centers.

B. Forward Integration:

Forward integration involves expanding your business to provide additional services or products to customers. For a "Fridge and AC Repairing" business, forward integration options may include:

1. Retailing ACs and Appliances: Expanding your business to retail air conditioning units, refrigerators, and related appliances.
2. AMC and Maintenance Contracts: Offering Annual Maintenance Contracts (AMCs) for routine servicing and maintenance of ACs and refrigeration systems.
3. Energy-Efficient Solutions: Providing energy-efficient solutions and consulting services to customers to optimize their cooling systems.

18. TRAINING CENTERS AND COURSES

For entrepreneurs and individuals interested in entering the "Fridge and AC Repairing" industry in Uttarakhand, there are various training centers and courses available to acquire the necessary skills and knowledge. These training programs help individuals become proficient in repairing and servicing refrigeration and air conditioning systems. Here are some examples of training centers and courses:

1. Government Industrial Training Institutes (ITIs):

- ITIs in Uttarakhand offer courses related to refrigeration and air conditioning repair.
- ITI courses often provide both theoretical knowledge and hands-on practical training.

2. Private Training Institutes:

- Several private institutes and academies in Uttarakhand specialize in providing technical training for AC and fridge repair.
- These institutes may offer short-term and long-term courses covering various aspects of the field.

3. Online Training Platforms:

- Online platforms and websites offer courses in refrigeration and air conditioning repair. These courses can be a convenient option for individuals who prefer self-paced learning. They may include video tutorials, interactive modules, and certification programs.
- Swayam portal (link: <https://swayam.gov.in/>) can also be accessed for enhanced learning on business commerce, accounting, production, marketing, and areas of entrepreneurship.

4. Manufacturer-Sponsored Training Programs:

- Some major appliance and AC manufacturers offer training programs and certification for technicians. These programs focus on specific product lines and technologies.

5. Local Workshops and Seminars:

- Local industry associations and organizations may organize workshops and seminars on AC and refrigerator repair techniques. These events can be valuable for networking and staying updated on industry trends.

6. On-the-Job Training:

- Many technicians in this field acquire their skills through on-the-job training. They start as apprentices or helpers and learn from experienced technicians while gaining hands-on experience.

7. Certification Programs:

- Various certification bodies, both national and international, offer certifications for HVAC and refrigeration technicians. Certification can enhance one's credibility and job prospects.

It's advisable for aspiring technicians and entrepreneurs to research and select a training program that aligns with their career goals and specific areas of interest within the "Fridge and

AC Repairing" industry. Additionally, staying updated with the latest advancements in cooling technologies and environmental regulations is essential for success in this field.

Disclaimer

Only few machine manufacturers/institutes are mentioned in the profile, although many machine manufacturers/institutes are available in the market. The addresses given for machinery manufacturers/institutes have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.

