

# Pre-Feasibility Study

## GAS APPLIANCES MANUFACTURING UNIT



**Small and Medium Enterprises Development Authority**

**Ministry of Industries & Production**

**Government of Pakistan**

**[www.smeda.org.pk](http://www.smeda.org.pk)**

**HEAD OFFICE**

4th Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road,  
Lahore

Tel: (92 42) 111 111 456, Fax: (92 42) 36304926-7  
[helpdesk@smeda.org.pk](mailto:helpdesk@smeda.org.pk)

<b>REGIONAL OFFICE PUNJAB</b>	<b>REGIONAL OFFICE SINDH</b>	<b>REGIONAL OFFICE KPK</b>	<b>REGIONAL OFFICE BALOCHISTAN</b>
3 <sup>rd</sup> Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road Lahore, Tel: (042) 111-111-456 Fax: (042) 36304926-7 <a href="mailto:helpdesk.punjab@smeda.org.pk">helpdesk.punjab@smeda.org.pk</a>	5 <sup>TH</sup> Floor, Bahria Complex II, M.T. Khan Road, Karachi. Tel: (021) 111-111-456 Fax: (021) 5610572 <a href="mailto:helpdesk-khi@smeda.org.pk">helpdesk-khi@smeda.org.pk</a>	Ground Floor State Life Building The Mall, Peshawar. Tel: (091) 9213046-47 Fax: (091) 286908 <a href="mailto:helpdesk-pew@smeda.org.pk">helpdesk-pew@smeda.org.pk</a>	Bungalow No. 15-A Chaman Housing Scheme Airport Road, Quetta. Tel: (081) 831623, 831702 Fax: (081) 831922 <a href="mailto:helpdesk-qta@smeda.org.pk">helpdesk-qta@smeda.org.pk</a>

**June 2015**

## Table of Contents

<b>1</b>	<b>DISCLAIMER .....</b>	<b>2</b>
<b>2</b>	<b>EXECUTIVE SUMMARY.....</b>	<b>3</b>
<b>3</b>	<b>INTRODUCTION TO SMEDA .....</b>	<b>3</b>
<b>4</b>	<b>PURPOSE OF THE DOCUMENT .....</b>	<b>4</b>
<b>5</b>	<b>BRIEF DESCRIPTION OF PROJECT &amp; PRODUCT .....</b>	<b>4</b>
5.1	PRODUCTION PROCESS FLOW.....	5
5.2	INSTALLED AND OPERATIONAL CAPACITIES.....	7
<b>6</b>	<b>CRITICAL FACTORS .....</b>	<b>7</b>
<b>7</b>	<b>GEOGRAPHICAL POTENTIAL FOR INVESTMENT .....</b>	<b>8</b>
<b>8</b>	<b>POTENTIAL TARGET CUSTOMERS / MARKETS .....</b>	<b>8</b>
<b>9</b>	<b>PROJECT COST SUMMARY .....</b>	<b>9</b>
9.1	PROJECT ECONOMICS .....	9
9.2	PROJECT FINANCING .....	9
9.3	PROJECT COST.....	10
9.4	SPACE REQUIREMENT .....	10
9.5	MACHINERY & EQUIPMENT REQUIREMENT .....	11
9.6	OFFICE EQUIPMENT REQUIREMENT .....	12
9.7	FURNITURE & FIXTURES REQUIREMENT .....	12
9.8	RAW MATERIAL REQUIREMENTS.....	12
9.9	HUMAN RESOURCE REQUIREMENT .....	12
9.10	UTILITIES AND OTHER COSTS .....	13
9.11	REVENUE GENERATION .....	13
<b>10</b>	<b>CONTACT DETAILS.....</b>	<b>14</b>
10.1	MACHINERY SUPPLIERS.....	14
10.2	RAW MATERIAL SUPPLIERS.....	14
<b>11</b>	<b>USEFUL WEB LINKS .....</b>	<b>15</b>
<b>12</b>	<b>ANNEXURES .....</b>	<b>16</b>
12.1	INCOME STATEMENT.....	16
12.2	BALANCE SHEET .....	17
12.3	CASH FLOW STATEMENT .....	18
12.4	RAW MATERIAL REQUIRED.....	19
<b>13</b>	<b>KEY ASSUMPTIONS.....</b>	<b>21</b>
13.1	OPERATING COST ASSUMPTIONS .....	21
13.2	PRODUCTION ASSUMPTIONS .....	21
13.3	REVENUE ASSUMPTIONS .....	22
13.4	FINANCIAL ASSUMPTIONS .....	22

## 1 DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the said matter. Although, the material included in this document is based on data/information gathered from various reliable sources; however, it is based upon certain assumptions, which may differ from case to case. The information has been provided on as is where is basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision, including taking professional advice from a qualified consultant/technical expert before taking any decision to act upon the information.

For more information on services offered by SMEDA, please contact our website: [www.smeda.org.pk](http://www.smeda.org.pk)

### ***Document Control***

Document No.	PREF-NO. 89
Revision	No. 3
Prepared by	SMEDA-Punjab
Revision Date	June 2015
For Information	Provincial Chief Punjab <a href="mailto:ianjua@smeda.org.pk">ianjua@smeda.org.pk</a>

## **2 EXECUTIVE SUMMARY**

This pre-feasibility study is for setting up a Gas Appliances Manufacturing Unit in any big city of Pakistan. The unit will produce gas water heaters, gas cooking ranges, gas room heaters and gas stoves of different sizes for both local and foreign market. The unit will be using semi-mechanized machinery for all the processes, ensuring quality check through out the production process.

Majority of the gas appliances manufacturing units exist in four major cities; Karachi, Lahore, Gujranwala and Sialkot. The gas appliances industry is a small-scale cottage industry with a few market leaders producing quality appliances. These few market leaders along with other small units have established themselves in the local market. However, Pakistan has the potential to expand in the international market by establishing new manufacturing units that produce export quality products. Gas appliances is a requirement of every household, therefore, the demand for these appliances is likely to increase in the local as well as the foreign market. Furthermore, imported appliances only take up a small proportion of the market share, which reinforces the fact that local products have a higher demand in the domestic market.

The proposed unit has an installed capacity of manufacturing 9,000 units of different types of gas appliances annually. However, during first year of operation unit will operate at 60% of installed capacity on 8 hours single shift basis with 300 operational days. The machinery involved can produce unlimited units; therefore, the capacity depends entirely on the number of hours and labor hired.

The total project cost for setting up this plant is estimated at Rs. 13.72 million, which includes a capital investment of Rs. 11.02 million and Rs. 2.70 million as working capital. The projected NPV is around Rs. 9.89 million, with an IRR of 31%, and Payback Period of 4.34 years. Project will generate direct employment opportunity for 10 persons. The legal business status of this project is proposed as 'Sole Proprietorship'.

## **3 INTRODUCTION TO SMEDA**

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectoral

research' to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need based capacity building programs of different types in addition to business guidance through help desk services.

#### **4 PURPOSE OF THE DOCUMENT**

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document/study covers various aspects of project concept development, start-up, and production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in **Gas Appliances Manufacturing Unit** by providing them with a general understanding of the business with the intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business set-up and it's successful management.

Apart from carefully studying the whole document one must consider critical aspects provided later on, which form basis of any investment decision.

#### **5 BRIEF DESCRIPTION OF PROJECT & PRODUCT**

Gas appliances manufacturing comes in the segment of light engineering industry. Most of the gas appliances manufacturing units in Pakistan are part of small-scale and cottage industry. Within the small scale and cottage industry, gas appliances is a small sector and needs further attention, both from the public and private sector.

Gas appliances are the need of every household and their usage will continue to increase in future. The market for gas appliances exists in almost every part of the country. There are a few major market players and the small units cater the remaining market. This shows that the potential for new entrants exists in this sector.

The proposed project entails setting up of a Gas Appliances Manufacturing Unit. The unit will have the capacity to produce approximately 9,000 gas appliances annually on single shift basis with 300 operational days. In order to maintain the quality standards, semi-mechanized machinery will be used, especially including, Hydraulic Presses, Power Press, Sheet Cutter and Shapers. This machinery will be acquired from local machinery manufacturers and suppliers.

The proposed product range includes gas water heaters (geysers), cooking range, gas room heaters and gas stoves. These appliances will be produced in various size and capacities, for instance:

- ⇒ Gas Stoves: Single Burner, Double Burners and Triple Bruner
- ⇒ Room Heaters: Single and Double Plat with Safety Device options
- ⇒ Water Heaters (Geysers): with Capacity of 25, 35, 50 and 60 Gallons

The proposed project will provide direct employment opportunities to 10 people initially, including the owner manager.

### **5.1 Production Process Flow**

The production process flow of the proposed gas appliances manufacturing mainly comprises of the following key steps:

#### *Cutting, Pressing & Moulding of Steel Sheets*

Different gauge of steel sheets are used for manufacturing of Gas Appliances. This step involves the cutting of stainless steel sheets and mild steel sheet into appropriate size and shape by using the sheet cutter. They are bent using a metal brake, and formed into many different types of components.

#### *Paint on Main Structure*

Paint in different colors is used for painting of Gas Appliances through paint booth. Powder coating is also used in place of paint.

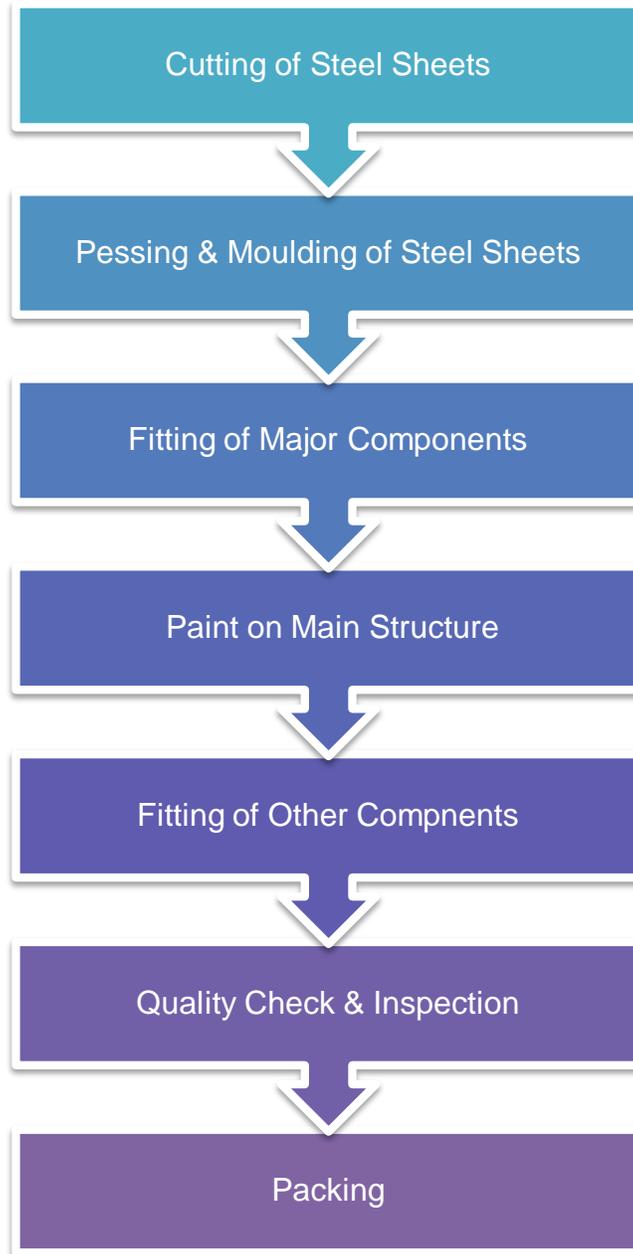
#### *Fitting of Other Structure*

In this phase the parts and other pieces are fitted together.

Repairing, Testing & Packing

This is the last process of production. Finished products are determined according to stipulated standards to select passed products and un-passed parts by repairing. Passed products are carefully packed and then send to customers.

**Figure: Production Process Flow Diagram**



## 5.2 Installed and Operational Capacities

The total installed capacity of the project is assumed at 30 units of Gas Appliances per day on 8 hours single shift basis; with 300 operation days annually, unit have a capacity of producing 9,000 units. The initial operational capacity for year 1 of the project will be 60% (i.e. 18 units per day and 5,400 annually) with an annual growth of 5%. Maximum capacity utilization of the project is assumed at 95%.

The product range wise installed and operational capacity of the unit is provided in the table below:

**Table 1: Installed and Operational Capacities**

Product Mix	Total Production Capacity (Annually)	% Of Total Production	Operational Capacity 60 % (Year 1)	Maximum Operational Capacity 95% (Year 8)
Gas Water Heaters	4,500	50%	2,700	4,275
Gas Cooking Ranges	2,700	30%	1,620	2,565
Gas Room Heaters	900	10%	540	855
Gas Stoves	900	10%	540	855
<b>Total</b>	<b>9,000</b>	<b>100%</b>	<b>5,400</b>	<b>8,550</b>

## 6 CRITICAL FACTORS

Following are the factors critical for the success of this business venture:

- ⇒ Technical know-how and relevant experience of entrepreneur.
- ⇒ Availability of skilled labour having technical knowledge.
- ⇒ Ability to generate work orders through industrial networking, direct marketing and negotiating long term contracts.
- ⇒ Utilization of job costing and job card with technical specifications sheet.
- ⇒ Strong linkages with wholesaler / retailers for selling of product.
- ⇒ Formation of organizational system especially for production department in order to maintain international quality standards.
- ⇒ Proficient marketing campaign in order to grab new orders both in the local as well as international market is crucial for the business.

## **7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT**

The major gas appliances manufacturing units are established in Gujranwala, Lahore and Karachi. Therefore proposed project can be set up in an industrial area of any major cities, such as, Lahore, Karachi, Gujranwala, Gujrat, Sheikhpura, Sialkot, Peshawar, Abbottabad, Taxila and Quetta. Similarly, outskirts of the stated cities with easy accessibility of raw material and labor are another option.

## **8 POTENTIAL TARGET CUSTOMERS / MARKETS**

Gas appliances are in good demand in almost every city of the country. Small manufacturers have taken the major share of the market in small cities. However, the major players have occupied the market of major cities. The shape and size of the gas appliances varies in different parts of the country. As most of the population of Karachi lives in flats, therefore, they prefer small and medium sized appliances with attractive design and colors. They are quality conscious and ready to pay for quality products. Therefore, superior quality products can be sold in Karachi with good profit margins.

In the province of Punjab, particularly in the city of Lahore, people prefer relatively bigger gas appliances with light colors. In the major cities of Punjab people are quality conscious and are willing to pay a good price for high class and quality products. Therefore, a sizeable demand exists in the province of Punjab. In the provinces of KPK and Balochistan, people prefer economical products to quality products. They also demand products of high gauge of steel sheet. The products of high gauge of steel sheet can be sold in these areas. Geysers and Room heaters have huge demand in cold areas of KPK, Balochistan, Gilgit Baltistan and AJ&K, where gas is available.

Subsequently, majority of the population in Pakistan lives in rural areas or small cities and major producers need to pay special attention to the prices of their products, as the small markets are price sensitive. The local manufacturers are fulfilling the demands of the local market.

It is evident from the above factors that consideration should be given to size and class of the target market from marketing point of view.

In the international market, manufacturers should make efforts to export their products to the major importing countries: USA, Germany, France, UK, and Canada. These should be given special attention. For Pakistan the main export markets exist in Asian countries and those should be given special attention for this purpose.

## 9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of Gas Appliances Manufacturing Unit. Various costs and revenue related assumptions along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are also attached as annexure.

### 9.1 Project Economics

All the figures in this financial model are based upon total installed capacity of 9,000 gas appliances annually. Whereas, during first year production capacity utilization is targeted at 60 %, i.e. 5,400 gas appliances to be produced while 5,175 appliances will be sold.

The following table shows internal rate of return, payback period and net present value of the proposed venture.

**Table 2: Project Economics**

Description	Details
Internal Rate of Return (IRR)	31%
Payback Period (Yrs.)	4.34
Net Present Value (Rs.)	9,890,387

### 9.2 Project Financing

Following table provides details of the equity required and variables related to bank loan:

**Table 3: Project Financing**

Description	Details
Total Equity (50%)	6,862,872
Bank Loan (50%)	6,862,872
Markup to the Borrower (%age / Annum)	16%
Tenure of the Loan (Years)	5 Years

### 9.3 Project Cost

Following fixed and working capital requirements have been identified for operations of the proposed business.

**Table 4: Project Cost**

<b>Capital Investment</b>	<b>Amount Rs.</b>
Land	2,000,000
Building	5,235,000
Machinery & Equipment	3,189,000
Furniture & Fixture	286,600
Office Equipment	110,000
Pre-Operational Cost	152,000
Training Cost	50,000
<b>Total Capital Cost</b>	<b>11,022,600</b>
<b>Working Capital Requirements</b>	
Equipment Spare Parts inventory	2,156
Raw Material Inventory	2,041,538
Upfront insurance	159,450
Cash	500,000
<b>Total Working Capital</b>	<b>2,703,144</b>
<b>Total Investment</b>	<b>13,725,744</b>

### 9.4 Space Requirement

The space requirement for the proposed Gas Appliances Manufacturing Unit is estimated considering various facilities including production hall, paint room, store room and office space.

Total land requirement for proposed project is 1 kanal. It is suggested to purchase land instead of getting on lease as the project life is very high and Plant & Machinery used in the project is expensive. Total estimated land cost is taken at 2 million. Details of space requirement and civil works cost related for building is given below:

**Table 5: Space Requirement**

<b>Description</b>	<b>Estimated Area (Sq. ft)</b>	<b>Estimated Construction Cost (Rs.)</b>
Production Hall	1,700	1,955,000

Store	1,700	1,955,000
Paint Shop	700	805,000
Office	400	520,000
<b>Total</b>	<b>72,000</b>	<b>5,235,000</b>

### 9.5 Machinery & Equipment Requirement

Following tables provides list of machinery and equipment required for a Gas Appliances Manufacturing Unit.

**Table 6: Machinery and Equipment Requirement**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Hydraulic Press (50 Ton HP)	1	550,000	550,000
Hydraulic Press (20 Ton HP)	1	350,000	350,000
Power Press (40 Kw)	2	210,000	420,000
Power Press (60 Kw)	1	320,000	320,000
Sheet Cutter	1	150,000	150,000
Paint Shop (both for Paint & Baking)	1	280,000	280,000
Powder Coating Booth	2	20,000	40,000
Shaper Machine	1	150,000	150,000
Pedestal Drill Machine	1	25,000	25,000
Copy Milling Machine (for Dies)	1	340,000	340,000
Roller (To Mould GWH Tank)	1	85,000	85,000
Lathe Machine	1	200,000	200,000
PVC Molding Machine	1	20,000	20,000
Compressor for Paint Booth	1	20,000	20,000
Dies Set	1	150,000	150,000
Power Tools (Set)	1	8,000	8,000
Mechanical Instruments (Set)	1	5,000	5,000
Drill Machines	2	6,500	13,000
Pipe Cutter	5	2,500	12,500
Grinder Pins & Discs	4	12,000	48,000
Stores, Spares and Loose Tools	1	2,500	2,500
<b>Total</b>			<b>3,189,000</b>

## 9.6 Office Equipment Requirement

Following tables provides list of office equipment required for a Gas Appliances Manufacturing Unit.

**Table 7: Office Equipment Requirement**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Computer with UPS	4	20,000	80,000
Printer	1	15,000	15,000
Misc.	1	15,000	15,000
<b>Total</b>			<b>110,000</b>

## 9.7 Furniture & Fixtures Requirement

The details of required furniture and fixture for the proposed Gas Appliances Manufacturing Unit are provided in the following table:

**Table 8: Furniture and Fixture Requirement**

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Office Table and Chair	8	11,000	88,000
Visitors Chair	8	2,200	17,600
Misc. Furniture	1	25,000	25,000
Office Cabinet	4	9,000	36,000
Air Conditioner	2	60,000	120,000
<b>Total</b>			<b>286,600</b>

## 9.8 Raw Material Requirements

The basic raw material for the manufacturing of gas appliances is Mild Steel (MS) Sheet. The other raw materials are copper pipes, stainless steel sheet, knobs, silver, brass, glass wool, thermostats, ceramic plates, bakelite, glass & stove paint. Powder coating is also used in place of stove paint but stove paint is longer lasting. On average, the MS sheet constitutes 70% or more of the total cost of the raw material. Further detail of Raw Material required is attached as annexure.

## 9.9 Human Resource Requirement

In order to run operations of proposed gas appliance manufacturing unit smoothly, details of human resources required along with number of employees and monthly salary are recommended as under:

**Table 9: Human Resource Requirement**

Description	No. Of Employees	Salary per Employee Per Month (Rs)
Production Manager	1	22,000
Supervisor	1	20,000
Receptionist / Coordinator	2	12,000
Foreman	1	18,000
Technical Staff	Piece Rate	Piece Rate
Marketing & Sales Officer	1	15,000
Account Officer	1	15,000
Purchase officer	1	12,000
Peon & Helper	2	12,000

It is assumed that the owner would have prior experience or knowledge about the Gas Appliances Manufacturing business. Salaries of all employees are estimated to increase at 10% annually.

The fitters, Molders, Welders & technical staff are available against piece wage rate which varies according to the nature and description of the product and in some of the units these are also employed on monthly payroll basis.

### 9.10 Utilities and Other costs

An essential cost to be borne by the project is the electricity expenses, which are estimated to be around Rs. 300,000 in year one with 10% increase in subsequent years. Travelling and communication expenses are assumed at 25% (i.e. Rs. 270,000) and 15% (i.e. Rs. 162,000) of administrative expenses respectively.

Furthermore, promotional expense being essential for marketing of gas appliances manufacturing is estimated as 0.25% of total revenue.

### 9.11 Revenue Generation

Based on the capacity utilization of 60% for the manufacturing of gas appliance units, sales revenue during the first year of operations is estimated as under:

**Table 10: Revenue Generation – Year 1**

Description	First Year Production (60% Capacity)	Finished Goods Inventory	Avg. Sales Price (Rs. / Appliance)	Sales Revenue Year 1 (Rs.)
Gas Appliances	5,400	225	10,983 <sup>1</sup>	56,836,410

## 10 CONTACT DETAILS

In order to facilitate potential investors, contact details of private sector service providers relevant to the proposed project be given.

### 10.1 Machinery Suppliers

Name of Supplier	Address	Phone	Fax
Latif and Sons Engineering Works	Javed Sheet Market, Gondlanwala Road, Gujranwala	(055) 3841475, 3254656	
M. Inayat Engineering Works	Javed Sheet Market Gondlanwala Road, Gujranwala	(055) 3736264	
Allah Tawakkal Engineering	Chungi Shamsabad, Opp. Khan Flour Mill, By Pass Road, Gujranwala	(055) 3250392	

### 10.2 Raw Material Suppliers

Raw Material for this project is normally purchased from open hard ware and steel markets of different cities.

<sup>1</sup> Weighted Average Price (WAP)

## 11 USEFUL WEB LINKS

Small & Medium Enterprises Development Authority (SMEDA)	<a href="http://www.smeda.org.pk">www.smeda.org.pk</a>
Government of Pakistan	<a href="http://www.pakistan.gov.pk">www.pakistan.gov.pk</a>
Ministry of Industries & Production	<a href="http://www.moip.gov.pk">www.moip.gov.pk</a>
Government of Punjab	<a href="http://www.punjab.gov.pk">www.punjab.gov.pk</a>
Government of Sindh	<a href="http://www.sindh.gov.pk">www.sindh.gov.pk</a>
Government of Khyber Pakhtunkhwa	<a href="http://www.khyberpakhtunkhwa.gov.pk">www.khyberpakhtunkhwa.gov.pk</a>
Government of Balochistan	<a href="http://www.balochistan.gov.pk">www.balochistan.gov.pk</a>
Government of Gilgit Baltistan	<a href="http://www.gilgitbaltistan.gov.pk">www.gilgitbaltistan.gov.pk</a>
Government of Azad Jamu Kashmir	<a href="http://www.ajk.gov.pk">www.ajk.gov.pk</a>
Trade Development Authority of Pakistan (TDAP)	<a href="http://www.tdap.gov.pk">www.tdap.gov.pk</a>
Security Commission of Pakistan (SECP)	<a href="http://www.secp.gov.pk">www.secp.gov.pk</a>
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	<a href="http://www.fpcci.com.pk">www.fpcci.com.pk</a>
State Bank of Pakistan (SBP)	<a href="http://www.sbp.org.pk">www.sbp.org.pk</a>
Punjab Small Industries Corporation	<a href="http://www.psic.gop.pk">www.psic.gop.pk</a>
Sindh Small Industries Corporation	<a href="http://www.ssic.gos.pk">www.ssic.gos.pk</a>
Punjab Vocational Training Council (PVTC)	<a href="http://www.pvtc.gop.pk">www.pvtc.gop.pk</a>
Technical Education and Vocational Training Authority (TEVTA)	<a href="http://www.tevta.org">www.tevta.org</a>
Punjab Industrial Estates (PIE)	<a href="http://www.pie.com.pk">www.pie.com.pk</a>
Faisalabad Industrial Estate Development and Management Company (FIEDMC)	<a href="http://www.fiedmc.com.pk">www.fiedmc.com.pk</a>
Gujranwala Tools Dies and Molds Center (GTDMC)	<a href="http://www.gtdmc.org.pk">www.gtdmc.org.pk</a>
Pakistan Industrial and Technical Assistance (PITAC)	<a href="http://www.pitac.gov.pk">www.pitac.gov.pk</a>

## 12 ANNEXURES

### 12.1 Income Statement

Calculations										SMEDA
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	56,836,410	70,448,318	83,473,329	98,398,858	115,474,760	134,981,854	157,235,619	182,590,319	201,290,778	221,419,856
<i>Cost of sales</i>										
Cost of goods sold 1	48,996,905	60,731,309	71,959,766	84,826,602	99,547,207	116,363,667	135,547,948	157,405,447	173,526,533	190,879,186
Operation costs 1 (direct labor)	690,000	789,462	868,607	955,658	1,051,407	1,156,725	1,272,571	1,399,999	1,543,384	1,697,722
Operating costs 2 (machinery maintenance)	51,750	64,144	76,003	89,593	105,141	122,902	143,164	166,250	183,277	201,605
Total cost of sales	49,738,655	61,584,914	72,904,376	85,871,853	100,703,755	117,643,295	136,963,683	158,971,697	175,253,194	192,778,513
Gross Profit	7,097,755	8,863,404	10,568,952	12,527,005	14,771,006	17,338,560	20,271,936	23,618,622	26,037,584	28,641,343
<i>General administration &amp; selling expenses</i>										
Administration expense	1,080,000	1,188,000	1,306,800	1,437,480	1,581,228	1,739,351	1,913,286	2,104,614	2,315,076	2,546,584
Administration benefits expense	32,400	35,640	39,204	43,124	47,437	52,181	57,399	63,138	69,452	76,398
Electricity expense	300,000	330,000	363,000	399,300	439,230	483,153	531,468	584,615	643,077	707,384
Travelling expense	270,000	297,000	326,700	359,370	395,307	434,838	478,321	526,154	578,769	636,646
Communications expense (phone, fax, mail, internet, etc.)	162,000	178,200	196,020	215,622	237,184	260,903	286,993	315,692	347,261	381,988
Office expenses (stationary, entertainment, janitorial services, etc)	108,000	118,800	130,680	143,748	158,123	173,935	191,329	210,461	231,508	254,658
Promotional expense	142,091	176,121	208,683	245,997	288,687	337,455	393,089	456,476	503,227	553,550
Insurance expense	159,450	143,505	127,560	111,615	95,670	79,725	63,780	47,835	31,890	15,945
Professional fees (legal, audit, consultants, etc.)	284,182	352,242	417,367	491,994	577,374	674,909	786,178	912,952	1,006,454	1,107,099
Depreciation expense	620,310	620,310	620,310	620,310	620,310	620,310	620,310	620,310	620,310	620,310
Amortization of pre-operating costs	30,400	30,400	30,400	30,400	30,400	-	-	-	-	-
Amortization of legal, licensing, and training costs	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Bad debt expense	284,182	352,242	417,367	491,994	577,374	674,909	786,178	912,952	1,006,454	1,107,099
Subtotal	3,478,015	3,827,459	4,189,091	4,595,955	5,053,323	5,536,668	6,113,331	6,760,199	7,358,478	8,012,660
Operating Income	3,619,740	5,035,945	6,379,862	7,931,050	9,717,682	11,801,892	14,158,605	16,858,423	18,679,107	20,628,683
Earnings Before Interest & Taxes	3,619,740	5,035,945	6,379,862	7,931,050	9,717,682	11,801,892	14,158,605	16,858,423	18,679,107	20,628,683
Interest on short term debt	170,709	170,709	-	-	-	-	-	-	-	-
Interest expense on long term debt (Project Loan)	881,808	753,585	604,846	432,309	232,166	-	-	-	-	-
Interest expense on long term debt (Working Capital Loan)	119,979	-	-	-	-	-	-	-	-	-
Subtotal	1,172,496	924,293	604,846	432,309	232,166	-	-	-	-	-
Earnings Before Tax	2,447,244	4,111,652	5,775,016	7,498,741	9,485,516	11,801,892	14,158,605	16,858,423	18,679,107	20,628,683
Tax	336,949	755,995	1,255,004	1,847,059	2,542,430	3,353,161	4,178,011	5,122,947	5,760,187	6,442,538
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>2,110,295</b>	<b>3,355,656</b>	<b>4,520,011</b>	<b>5,651,683</b>	<b>6,943,086</b>	<b>8,448,730</b>	<b>9,980,594</b>	<b>11,735,476</b>	<b>12,918,920</b>	<b>14,186,144</b>

## 12.2 Balance Sheet

Calculations											SMEDA
Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Assets</b>											
<i>Current assets</i>											
Cash & Bank	500,000	-	96,534	2,618,754	5,791,393	9,617,977	15,832,290	22,914,995	31,685,346	41,215,377	73,230,331
Accounts receivable		2,335,743	2,615,440	3,162,774	3,737,100	4,394,663	5,146,369	6,004,469	6,982,725	7,887,968	8,685,835
Finished goods inventory		2,162,550	2,574,289	3,046,750	3,587,960	4,206,945	4,913,848	5,720,061	6,638,379	7,302,216	8,032,438
Equipment spare part inventory	2,156	2,940	3,832	4,969	6,414	8,247	10,568	13,499	16,370	19,807	-
Raw material inventory	2,041,538	2,783,518	3,627,972	4,704,342	6,072,794	7,808,535	10,005,477	12,780,779	15,498,731	18,753,464	-
Pre-paid insurance	159,450	143,505	127,560	111,615	95,670	79,725	63,780	47,835	31,890	15,945	-
<b>Total Current Assets</b>	<b>2,703,144</b>	<b>7,428,256</b>	<b>9,045,626</b>	<b>13,649,203</b>	<b>19,291,331</b>	<b>26,116,093</b>	<b>35,972,332</b>	<b>47,481,637</b>	<b>60,853,440</b>	<b>75,194,778</b>	<b>89,948,604</b>
<i>Fixed assets</i>											
Land	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Building/Infrastructure	5,235,000	4,973,250	4,711,500	4,449,750	4,188,000	3,926,250	3,664,500	3,402,750	3,141,000	2,879,250	2,617,500
Machinery & equipment	3,189,000	2,870,100	2,551,200	2,232,300	1,913,400	1,594,500	1,275,600	956,700	637,800	318,900	-
Furniture & fixtures	286,600	257,940	229,280	200,620	171,960	143,300	114,640	85,980	57,320	28,660	-
Office equipment	110,000	99,000	88,000	77,000	66,000	55,000	44,000	33,000	22,000	11,000	-
<b>Total Fixed Assets</b>	<b>10,820,600</b>	<b>10,200,290</b>	<b>9,579,980</b>	<b>8,959,670</b>	<b>8,339,360</b>	<b>7,719,050</b>	<b>7,098,740</b>	<b>6,478,430</b>	<b>5,858,120</b>	<b>5,237,810</b>	<b>4,617,500</b>
<i>Intangible assets</i>											
Pre-operation costs	152,000	121,600	91,200	60,800	30,400	-	-	-	-	-	-
Legal, licensing, & training costs	50,000	45,000	40,000	35,000	30,000	25,000	20,000	15,000	10,000	5,000	-
<b>Total Intangible Assets</b>	<b>202,000</b>	<b>166,600</b>	<b>131,200</b>	<b>95,800</b>	<b>60,400</b>	<b>25,000</b>	<b>20,000</b>	<b>15,000</b>	<b>10,000</b>	<b>5,000</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>13,725,744</b>	<b>17,795,146</b>	<b>18,756,806</b>	<b>22,704,673</b>	<b>27,691,091</b>	<b>33,860,143</b>	<b>43,091,072</b>	<b>53,975,067</b>	<b>66,721,560</b>	<b>80,437,588</b>	<b>94,566,104</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
Accounts payable		2,130,210	2,647,695	3,153,907	3,739,537	4,416,540	5,198,738	6,102,139	7,113,156	7,910,264	7,852,635
Short term debt	-	1,981,864	-	-	-	-	-	-	-	-	-
<b>Total Current Liabilities</b>	<b>-</b>	<b>4,112,074</b>	<b>2,647,695</b>	<b>3,153,907</b>	<b>3,739,537</b>	<b>4,416,540</b>	<b>5,198,738</b>	<b>6,102,139</b>	<b>7,113,156</b>	<b>7,910,264</b>	<b>7,852,635</b>
<i>Other liabilities</i>											
Long term debt (Project Loan)	5,511,300	4,709,905	3,780,287	2,701,931	1,451,037	-	-	-	-	-	-
Long term debt (Working Capital Loan)	1,351,572	-	-	-	-	-	-	-	-	-	-
<b>Total Long Term Liabilities</b>	<b>6,862,872</b>	<b>4,709,905</b>	<b>3,780,287</b>	<b>2,701,931</b>	<b>1,451,037</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>Shareholders' equity</i>											
Paid-up capital	6,862,872	6,862,872	6,862,872	6,862,872	6,862,872	6,862,872	6,862,872	6,862,872	6,862,872	6,862,872	6,862,872
Retained earnings		2,110,295	5,465,952	9,985,963	15,637,645	22,580,732	31,029,462	41,010,056	52,745,532	65,664,452	79,850,596
<b>Total Equity</b>	<b>6,862,872</b>	<b>8,973,167</b>	<b>12,328,824</b>	<b>16,848,835</b>	<b>22,500,517</b>	<b>29,443,604</b>	<b>37,892,334</b>	<b>47,872,928</b>	<b>59,608,404</b>	<b>72,527,324</b>	<b>86,713,468</b>
<b>TOTAL CAPITAL AND LIABILITIES</b>	<b>13,725,744</b>	<b>17,795,146</b>	<b>18,756,806</b>	<b>22,704,673</b>	<b>27,691,091</b>	<b>33,860,143</b>	<b>43,091,072</b>	<b>53,975,067</b>	<b>66,721,560</b>	<b>80,437,588</b>	<b>94,566,104</b>

## 12.3 Cash Flow Statement

Calculations											SMEDA
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit		2,110,295	3,355,656	4,520,011	5,651,683	6,943,086	8,448,730	9,980,594	11,735,476	12,918,920	14,186,144
Add: depreciation expense		620,310	620,310	620,310	620,310	620,310	620,310	620,310	620,310	620,310	620,310
amortization of pre-operating costs		30,400	30,400	30,400	30,400	30,400	-	-	-	-	-
amortization of training costs		5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Accounts receivable		(2,335,743)	(279,697)	(547,334)	(574,326)	(657,564)	(751,705)	(858,100)	(978,256)	(905,243)	(797,867)
Finished goods inventory		(2,162,550)	(411,739)	(472,461)	(541,210)	(618,985)	(706,902)	(806,213)	(918,318)	(663,838)	(730,222)
Equipment inventory	(2,156)	(784)	(892)	(1,137)	(1,445)	(1,833)	(2,320)	(2,931)	(2,871)	(3,438)	19,807
Raw material inventory	(2,041,538)	(741,981)	(844,453)	(1,076,370)	(1,368,452)	(1,735,741)	(2,196,942)	(2,775,301)	(2,717,952)	(3,254,733)	18,753,464
Advance insurance premium	(159,450)	15,945	15,945	15,945	15,945	15,945	15,945	15,945	15,945	15,945	15,945
Accounts payable		2,130,210	517,485	506,212	585,630	677,002	782,198	903,402	1,011,017	797,108	(57,628)
Cash provided by operations	(2,203,144)	(328,897)	3,008,016	3,600,576	4,423,533	5,277,621	6,214,313	7,082,705	8,770,351	9,530,031	32,014,953
<i>Financing activities</i>											
Project Loan - principal repayment		(801,395)	(929,618)	(1,078,357)	(1,250,894)	(1,451,037)	-	-	-	-	-
Working Capital Loan - principal repayment		(1,351,572)	-	-	-	-	-	-	-	-	-
Short term debt principal repayment		-	(1,981,864)	-	-	-	-	-	-	-	-
Additions to Project Loan	5,511,300	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	1,351,572	-	-	-	-	-	-	-	-	-	-
Issuance of shares	6,862,872	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares											
Cash provided by / (used for) financing activities	13,725,744	(2,152,967)	(2,911,482)	(1,078,357)	(1,250,894)	(1,451,037)	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(11,022,600)	-	-	-	-	-	-	-	-	-	-
Cash (used for) / provided by investing activities	(11,022,600)	-	-	-	-	-	-	-	-	-	-
<b>NET CASH</b>	<b>500,000</b>	<b>(2,481,864)</b>	<b>96,534</b>	<b>2,522,219</b>	<b>3,172,639</b>	<b>3,826,584</b>	<b>6,214,313</b>	<b>7,082,705</b>	<b>8,770,351</b>	<b>9,530,031</b>	<b>32,014,953</b>

## 12.4 Raw Material Required

Cost of Gas Water Heater	25 Gallons	35 Gallons	50 Gallons	60 Gallons
M S Sheet (10"-18")/gauge	4,730	6,600	7,700	8,800
Copper Pipes (in shape of coils) 24"-27"/gauge	70	105	175	263
Gas Thermostat for GWH (Uniton Robert Shaw)	1,000	1,000	1,000	1,000
Temperature gauge	60	60	60	60
Paint (Stoving)	95	158	238	475
Powder coating	307	460	657	920
Red Oxide (Oxyplast & Berger)	16	20	27	33
Glass wool	107	160	229	320
Geyser GI Pipes (3/4")	102	116	116	116
Geyser GI Pipes (2-1/2")	473	540	540	540
Safety Valve for GWH	250	250	250	250
Burner	240	240	240	240
Dead Nut	65	65	65	65
Pilot	55	55	55	55
Monograms	120	120	120	120
Electricity Expenses	350	350	350	350
<b>Total Raw Material Cost / Unit</b>	<b>8,038</b>	<b>10,299</b>	<b>11,821</b>	<b>13,607</b>

Cost of Gas Room Heater	Single Plate	Double Plate	W Safety Device
M S Sheet (20"-24")/gauge	440	660	660
S S Sheet (24"-28")/gauge	190	380	380
Copper Pipes (in shape of coils) 24"-27"/gauge	263	350	350
Paint (Stoving)	95	119	119
Paint (Enamel)	80	100	100
Burner	240	350	350
Ceramic Plates	650	950	950
Steel Reflector sheet	85	170	170
Moving Burner Knobs	100	150	150
Gas cocks	80	80	80
Pilot	55	55	55
Safety device	-	-	250
Glass wool	53	53	53
Steel Grill	300	300	300
Electricity	200	200	200
<b>Total Raw Material Cost</b>	<b>2,831</b>	<b>3,917</b>	<b>4,167</b>

Cost of Gas Cooking Range	27" / 3B	31" / 3B	34" / 3B	34" / 5B
M S Sheet (20"-24")/gauge	2,750	2,750	2,750	2,750
S S Sheet (24"-28")/gauge	950	1,520	1,520	2,280
Copper Pipes (in shape of coils) 24"-27"/gauge	263	350	525	525
Paint (Stoving)	158	190	238	238
Powder coating	575	767	1,150	1,150
Burner Pipes (1/2"GI)	225	225	225	225
Gas Thermostat for Cooking Range	375	375	375	375
Glass (for oven)	500	650	850	850
Burners	250	250	250	400
Burner tops (Brass)	420	420	420	420
Handle Grips (Bakelite)	150	150	250	250
Timer	200	200	200	200
Plastic Buttons	180	180	300	300
Moving Burner Knobs	100	100	100	150
Electric Wiring	150	125	125	150
Moving Motors	350	350	350	350
Brass Bolts	200	200	240	240
Gas cocks	360	360	360	360
Auto Ignitions	-	-	300	300
Hinges	300	300	300	300
Electric Bulb (15 watts) with holder	55	55	55	55
Cooking Stands / Burner Grills	300	300	300	300
Electricity	500	500	500	500
<b>Total Raw Material Cost / Unit</b>	<b>9,311</b>	<b>10,317</b>	<b>11,683</b>	<b>12,668</b>

Cost of Gas Stove	Single Burner	Double Burner	Triple Burner
M S Sheet (20"-24")/gauge	660	660	660
S S Sheet (24"-28")/gauge	-	-	95
Copper Pipes (in shape of coils) 24"-27"/gauge	131	175	263
Paint (Stoving)	95	50	88
Burner Pipes (1/2"GI)	27	34	45
Moving Burner Knobs	100	200	300
Burners	150	300	450
Cooking Stands / Burner Grills	125	160	200
Burner tops (Brass)	180	375	500
Electricity	200	200	200
<b>Total Raw Material Cost / Unit</b>	<b>1,668</b>	<b>2,154</b>	<b>2,800</b>

## 13 KEY ASSUMPTIONS

### 13.1 Operating Cost Assumptions

Description	Details
Administration Benefit Expenses	3% of Administration Expense
Office Expenses (Stationery, Entertainment etc)	10% of Administration Expense
Communication Expenses	15% of Administration Expense
Promotional Expenses	0.25% of Revenue
Professional Fee	0.50% of Revenue
Depreciation Method	Straight Line
Inflation Growth Rate	10%
Electricity Price Growth Rate	10%
Salaries Growth Rate	10%

### 13.2 Production Assumptions

Description	Production Percentage
Gas Water Heater	
25 Gallons	20%
35 Gallons	50%
50 Gallons	20%
60 Gallons	10%
Gas Cooking Range	
27 inches with Three Burners	15%
31 inches with Three Burners	10%
34 inches with Three Burners	25%
34 inches with Five Burners	50%
Gas Room Heater	
Single Plate	20%
Double Plate	70%
Double Plate with safety device	10%
Gas Stove	
Single Burner	25%
Double Burner	65%
Triple Burner	10%
Extra Material for Export Appliances	15%

### 13.3 Revenue Assumptions

Description	Details
Local Sales	90%
Export Sales	10%
Gas Water Heaters	50% of Production
Gas Cooking Range	30% of Production
Gas Room Heaters	10% of Production
Gas Stoves	10% of Production
Percentage Profit on Gas Appliances	16%

### 13.4 Financial Assumptions

Description	Details
Debt	50%
Equity	50%
Interest Rate on Debt	16%
Debt Tenure	5 Years
Debt Payment / Year	1