



Pre-feasibility Study

MINERAL WATER BOTTLING PLANT (100,000 GPD)

May 2023

“The figures and financial projections are approximate due to fluctuations in exchange rates, energy costs, and fuel prices etc. Users are advised to focus on understanding essential elements such as production processes and capacities, space, machinery, human resources, and raw material etc. requirements. Project investment, operating costs, and revenues can change daily. For accurate financial calculations, utilize financial calculators on SMEIDA’s website and consult financial experts to stay current with market conditions.”

Small and Medium Enterprises Development Authority
Ministry of Industries and Production
Government of Pakistan

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Document Control

Document No.	PREF-NO: 142
Revision	No. 02
Prepared by	SMEDA-Sindh
Revision Date	June, 2023
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EXECUTIVE SUMMARY

The demand for mineral water is constantly rising and there are a number of local manufacturers producing good quality mineral water bottles. The consumers are becoming increasingly quality conscious and seek products offering value for money. This trend has led to strong growth in mineral water bottling plant all across Pakistan. The focus of the business would be to provide clean, hygienic and drinkable water.

This proposed pre-feasibility study presents an investment opportunity for establishing a Mineral Water Processing Plant with a capacity of **100,000 gallons per day**. The proposed product line will consist of **19 liters bottles**. Total installed production capacity of purified bottled water is **2,188,421** bottles per year, where initial capacity utilization will be **40%**.

The total project cost for setting up a Mineral Water Processing Unit is estimated at **Rs. 235.15 million** out of which **Rs. 218.22 million** is capital cost and **Rs. 16.93 million** is working capital. The project is proposed to be financed through **100%** equity. The NPV is projected around **Rs. 80.40 million**, with an IRR of **32%** and a Payback Period of **4.15 years**.

The most critical considerations or factors for success of the project are:

- Most significant consideration
 - Location with respect to source of water.
 - Compliance with standards & obtaining license from (PSQCA) Pakistan Standards & Quality Control Authority.
 - Maintenance of quality and hygiene standards.
 - Efficient promotion of product through various TTL marketing activities.

- Equally important factors
 - Experienced & Strong Distributor.
 - Reasonable & competitive prices with respect to brand positioning.

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.

PURPOSE OF THE DOCUMENT

The objective of this Pre-feasibility study is primarily to facilitate the investor in identification of project viability. This may form the basis of an important investment decision and in order to serve this objective; the document/study covers various aspects related to concept development, start-up, production, marketing & finance and business management. The document also provides sectoral information, brief on Government policies and international scenario, which have some bearing on the project itself.

This particular study is regarding production of purified drinking water on commercial basis. Before studying the whole document one must consider following critical aspects, which forms the basis of any investment decision.

CRUCIAL FACTORS

It is advisable to evaluate the associated risk factors by taking into consideration of certain key elements. For establishing water purification plant critical factors that should be considered before launching are described below:

- The market for purified bottled / mineral water is a growing market, but offers tough competition.
- Perception / positioning of the new brand. Usually the top target markets for bottled mineral water follows the perception. If the perception is positive, the results will be higher sales. The positive perception for distributors and final customers may result from direct consumer experience, awareness, direct promotional activities, print media and cable advertisement.
- Distribution is very important for the success of new brand. The stronger the distribution the more successful will be the new brand. The distribution strategy should be designed after a careful study of the market for going for regional distribution or for nationwide distribution.
- Pre-launch advertising is vital for positive perception of the product, which will result in higher product acceptance.
- Compliance of the water quality standards of (PSQCA) Pakistan Standards & Quality Control Authority and license from the authority.
- Availability of product at A class, B class or C class shops should be decided before launching the product and availability should be persistent.

Project Time Lines

S. No	Activity	Time (months)
1	Civil Works	06
2	Plant order and lay out	03
3	Pre-opening operations	03

The construction / renovation of civil works are estimated to be completed in six months whereas the plant lay out and machinery order and installation is also estimated to be completed in three months. The time required for pre-operations is three months. The project time line may extend and cut back depending upon the start of activities on parallel basis or one after another.

PROJECT PROFILE

Purification of Water

The process of purified bottled water manufacturing consist of collecting water from a suitable source, filtration, demineralization, blending with salts, aeration, testing for standards conformation, bottling and then packaging.

Before 2010 much of the mineral water was being imported. But today the demand is being met by local producers / suppliers. According to PSQCA, there are around 285¹ registered / licensed brands available in the market thus showing a substantial growth by the industry. Other than registered brands, it is estimated that there are hundreds of unregistered brands being supplied in the market.

Mineral Water Imports in Pakistan²

Year	Quantity/Liters	Value (Rs.)
2021	3,783,000	105,598,080
2020	2,270,000	66,838,268
2019	4,163,000	146,595,200
2018	3,631,000	143,574,170

Source: COMTRADE.UN.ORG

¹ PSQCA website

² comtrade.un.org

Opportunity Rationale

The market for mineral water has been showing a mushroom growth trend over the last few years due to the increasing population in a country, less availability of clean drinking water in majority of areas and awareness of hygiene with respect to drinking water. The demand of clean-fresh water is increasing year after year. Keeping this situation in mind many individuals and companies have set up mineral water processing plants in order to supply clean drinking water.

Pakistan has an estimated population of more than 189 million, due to this increase in population, demand of pure drinking water has increased. Most of our population is facing the problem of drinking water shortage. This further integrates the demand for pure drinking water. This business can be set-up in any major city with significant population such as Karachi, Hyderabad, Lahore, Rawalpindi, Islamabad, Multan, Peshawar and Quetta.

The potential markets for bottled / mineral water consist of Households, Hotel Industry, Hospitals, Offices, Homes, Educational Institutions, Commercial Markets and Hygiene conscious people. Moreover the bottled / mineral water has been emerging as a daily preference of Upper, Middle & Lower Middle Class due to unavailability of clean/pure drinking water.

Business Plan Brief

This proposed Pre-feasibility study presents an investment opportunity for establishing a bottled water plant for providing pure drinking water. The proposed product line will consist of bottles of 19 liters.

Project Investment

The total cost of the project has been worked out to be Rs. 235,153,654. This includes a fixed cost of Rs. 218,222,470 and a working capital requirement of Rs. 16,931,184

Process

Three sources of water can be used for purification purposes on commercial basis.

- Ground/Boring Water
- Water Supply from KWSB (in Karachi)
- Through Hydrants/Tankers

The ground water available in Karachi at different areas has different chemical composition and treatment would vary depending upon the chemical composition

from area to area. The water supply from Ground Water is more feasible as compared to the water supply from KWSB. Water can also be purchased from KWSB on commercial basis. This feasibility focuses on Ground/Boring Water as source of water. Initially, we recommend Resistivity or Geological survey at particular plant location, which consists of four tests and will cost Rs. 70,000. This Resistivity survey report will identify the TDS (Total Dissolved Solids), time period for the availability of boring water at particular depth and feasibility of chemical and microbiological composition of ground/boring water which will be more helpful for this project.

Plant Capacity

This study has been designed for a water purification plant with a capacity of 100,000 gallons per day. The product consists of 19 liters bottles only.

Table: Recommended project Parameters

Installed Capacity	Human Resource	Technology/Machinery	Location
100,000 Gallons per day	62	Imported	Karachi

Financial Summary

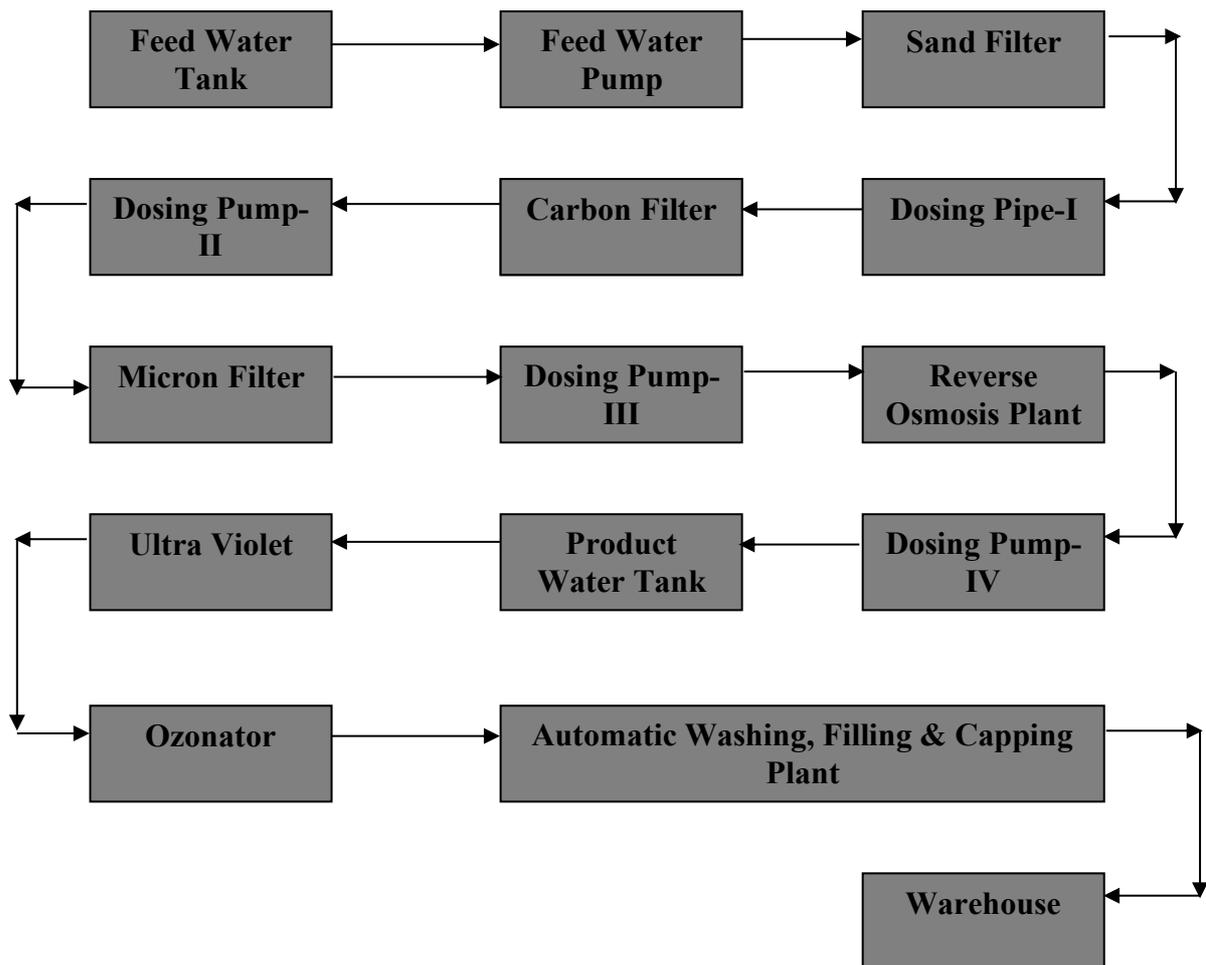
The financial cost of the project can be summarized as under:

Project Cost	IRR	MIRR	Payback Period (years)	NPV
Rs. 235,153,654	32%	23%	4.15	80,401,794

The process flow

The first step for setting up a water purification plant is the analysis of source of water. After the chemical analysis, the specifications of the purification plant are set. In the purification plant, source water is stored into the feed water tank, passes through the sand filter for preliminary water filtration. Water then passes through the dosing pump-I where chlorine is added to kill the germs in the water. After the chlorination process, water passes through carbon filter. It helps in the maintenance of proper odour and taste of the water. It also removes chlorine from water. Water then passes through dosing pump-II, where Sodium Meta Bisulphate is added. It helps in dechlorination of water. Water is filtered next, it passes through dosing

pump-III, where anti scallant is added. It prevents scaling of membrane from calcium, magnesium and biological growth. Water then passes through reverse osmosis module. This stage of the process makes water clear from all the contaminations and minute particles. Water then passes through dosing pump-IV, where minerals are added for taste development. After this stage, water undergoes Ultra Violet treatment to avoid any contamination from bacteria and other micro-organisms. Water then passes through automatic washing, filling and capping plant. Here water is filled into bottles. After filling, bottles are taken into the warehouse or shipped to the retailers. The complete process flow diagram is as under.



Proposed Location

Mineral Water processing plant can be set-up in any major city with significant population such as Karachi, Hyderabad, Lahore, Rawalpindi, Islamabad, Multan, Peshawar and Quetta.

STRATEGIC RECOMMENDATIONS**Market Entry Timing**

The weather is the main dynamic that may bring changes in the market size of the purified drinking water as the daily water requirement increases in summer. When launching a new brand of purified water for bulk market, weather is the main dynamic and should be given proper consideration. The demand pattern for retail market of purified bottled water is not affected by the weather. However, it is suggested that the new brand of purified bottled water is launched in the start of summer season. The Investor have to match the brand launching time with the advertisement and weather that would drive the demand of bottled water and willingness of consumers to switch towards new brand.

KEY SUCCESS FACTORS**Marketing**

The traditional marketing tools include site advertisement, print media advertising and brochures. This study allocates 20% of the revenue for advertising and promotional purposes.

Apart from the traditional marketing tools, this study suggests to focus more on other marketing magnets that include interactive marketing. Interactive marketing may include educating the general public about the importance of water and its daily consumption requirements for human body through the participation in seminars and in general public gatherings (e.g. College and University gatherings).

One of the marketing options is to sponsor public events like cricket matches or hospital campaigns, distributing free brochures about water and its daily consumption. The interactive marketing may be designed through seminars and workshops about the daily human consumption requirements and diseases originating from the lack of pure water. Overall marketing strategy may change with the change of target market. A market research study is recommended to design the different dynamics of marketing before launching the new brand.

Marketing expense has been included at the rate of 20% of Total Revenue. The investor may decide to increase or decrease the amount of marketing expense depending upon the choice of promotional activities and type of media used. Following table gives the breakup of tentative marketing expense.

Table: In %age if the marketing expense

Bill Boards / Float Operations	20%
Newspapers	25%
Magazines	15%
Point of Sales Marketing	40%

Pricing

The pricing strategy should be in line with the going rate market prices of the different local brands. Since a new brand has to face a lot of competition from the market, it is suggested that the price strategy should be according to the market competition. Suggested price is Rs.200 for 19 Gallon Bottle however different brands are available at Rs. 100 to 350 with respect to their brand positioning and consumers perception.

Product Packaging

Product packaging and presentation is one of the main dynamics, which control the flow of target customers towards the product. Packaging should be in line with the industrial norms. Packaging may also vary with the understanding of the target market. It is suggested that the bottles of 19 liters capacity should be used. Bottles should be clear. The bottle should give a reflection of light sky blue color, which is considered a natural symbol of the water. This color also adds a tinge of purity. The water should give a shiny and a glossy reflection. The bottles should be placed in special racks and stand meant for bottled water at retail outlets, which will be having a unique color and a unique design. The color and the design will create a positive perception for the new brand. The lamination on the bottle is suggested to be on four-color printing and should have the following information in addition to the logo of the company.

- Water Specification
- Certificate mark of the Pakistan Standards & Quality Control Authority
- Expiry Date (Best Before Date)
- A brief intro of the company with the address
- Website address of the company
- Brand Name / Trade Name
- Net volume in System International / Metric system
- Batch number or code number

SECTOR & INDUSTRY ANALYSIS

Pakistan's bottled water market comprises of two main segments i.e. retail market and bulk market. The retail market consists of 0.5 liter, 1.5 liters, 3.1 liters 5.0 liters, 6.0 liters, 16 liters and 19 liters capacity PET bottles, whereas the bulk market consists of home and office delivering in 2, 3, 5 and 19 gallon cans.

BRANDS AVAILABLE IN THE MARKET

Table: Some popular Brands available in the market

Culligan	Pakola
Springley	Fission
Aqua Bara Safe	Dosani
Aqua Flex	Aqua Plus
Nestle Pure Life	Exact
Atlantis	Pureza
Sparkletts	XT
Aafi	Aqua Nation
Classic	Aala Pure Drop
AB-E-Tasneem	Oasiss
Tws	Horizon
Nayab	Maya
Aspen Aqua	Nino
Pineo	Prime Pani
Kinley	Pure N Fine
Kinley	Ok Lasani
Great	Aqua Clear
ISIS	Aab-e-Anoud
Aab-E-Wah	Life Water
Salsabeel Water	Habib
Piyaas Plus	Fast Water
Aqualine Premium	Quality
Aqua 7	Revielle
Akson Pure Water	Water One
Deja Blue	Blue Ever Pure
Crystal White	Hydropsy
Pure Light	Aabshaar
Uni Pak Healthy Life	Date Vally
Snow Mountian	Mountain Fresh

Gourmet	Stream
Tahoor	Valvic
Nestle Pure Life	Life Line
Minhal	Best Water
Culligan	Defence
Glow	Iqra Finu
Safa	Aqua Link
Miracle	Montana
Everest	Lariab
Zindagi	Alish
AquaAroma	Pak Abshaar
Cascade	Nesma
Nature	Crest
Bhambhor	Eden
Avion	De Aar
Volvia	Value
AL-Atash	Aab-e-Hunain
Xtreme	Aab-e-Shifa
Buxton	Dam
24 Karat	Bay
Okay	Agua Gud
Calyx	Meme
Wania	Al-Maa
Glacier	Ashley Water
Aqua Fina	Euphoria
Viva	Future Plus
Ocean	Aqua Life
Ramna Premium	Keeper
Hydro Clear	Neelam Plus
Silver Sip	Blue Lagoon
Siz	Oxygen
Finest	Mummum
Vey	Dew Drop
Al-Habib	Aqua Best
Sprinkle	H2O4U
Origin	Eye Line
Aqua Blue	Saqi
Al-Hayat	Combi Plus

Orish	Oslo
Salwa	Coral
Sohat	Top Mountain
Bee Harry's	Glorious Plus
Aqua Aro	Momsa
Volga	Pride Plus
Winsip	NAFENA
Energy	Rejoice

Source: <http://www.psqca.com.pk/valid-license.htm>

The price range for 19 liter category is from Rs.100 to Rs.350 in the market depending upon the positioning and quality of the brand.

Legal Requirements

The Pakistan Quality Standards defines bottled drinking water as, ***“Bottled drinking waters are waters other than natural mineral waters which are filled into hermetically sealed containers of various compositions forms and capacities that are safe and suitable for direct consumption bottled drinking water is considered food.”***

The Pakistan Standard Quality Control Authority (PSQCA) was established under section 3 of the Act-1996. The establishment of any mineral water plant in Pakistan is required to get a license from the Pakistan Standards Quality Control Authority, which will cost Rs. 19,000. An application form, which can be obtained for only from the office of the Pakistan Standard Quality Control Authority and it is to be submitted to the Pakistan Standard Quality Control Authority. The manufacturer is required to have a laboratory and a technical person, who will be checking the samples for consistent quality. The team from the Pakistan Standard Quality Control Authority then visits the plant and collects samples. After the conformity of the samples to the standards the Pakistan Standard Quality Control Authority issues a license.

The Pakistan Standard Quality Control Authority has developed standards for bottled and mineral water. All the water plants being established in the country are required to follow these standards. These standards are available at a cost. A manufacturer cannot market bottled / mineral water without obtaining a license from the Pakistan Standard Quality Control Authority. The authority examines the availability of proper facilities including standardized laboratory and purification-processing plant for ensuring the quality of purified drinking water with a team of experts. Manufacturing, Stocking and sale of bottled drinking water and bottled mineral water without certification marks license is prohibited under the Pakistan Standard

Quality Control Authority Act. Violation of the Pakistan Standard Quality Control Authority Standards can lead to punitive action as per law.

The general requirements for establishing a bottled / mineral water plant as developed by Pakistan Standard Quality Control Authority are as following:

Suitability

The assessment of the suitability of water for human consumption shall be based on consideration of its physical, chemical and microbiological requirements and limits for toxic substances. The water should be free from all chemical and bacteriological contaminations which are hazardous to health.

Table: Chemical and Microbiological Requirements of Bottled/Mineral Water

Requirements	Units
pH Range	6.5-8.5
Total Dissolved Solids (TDS) Max	500 mg/L
Total Hardness as CaCO ₃ Max	250 mg/L
Chemical Requirements	
Nitrite (NO ₂)	10 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L
Sodium	50 mg/L
Potassium	10 mg/L
Magnesium	50 mg/L
Calcium	100 mg/L
Microbiological Requirements	
Escherichia Coli	0/250 ml
Total Califon	0/250 ml
Entercooci (Streptococci)	0/250 ml
Sporulated SRA	0/100 ml
Pseudomonas Aeruginosa	0/250 ml
Parasites and pathogenic micro organisms	Shall be free

Source: PCRWR Quarterly Report-Bottled Water Quality

Hygiene

Drinking water for the purpose of bottling shall be prepared in accordance with PS:4639-2004 for the code of practice-General principal of food Hygiene and in accordance with the PS:4718-2001 for code of practice for the collecting, processing and marketing of natural mineral waters.

Packaging

The containers shall be hygienic suitable completely clean and shall not cause any undesirable changes in the tastes, odour or color or quality of the water. It can be inspected at random, just prior to being filled and sealed. It should be packed in hermetically sealed containers of Food Grade material to prevent contamination of bottled water. Filling and sealing operations of containers shall be done in an aseptic atmosphere so as to prevent any contamination.

Transportation

Bottled water shall be transported by any suitable means of transport to protect it from contamination.

Marking

Compliance with PS: 1485-1994 is required for labeling of Pre-Packaged Foods, the following provisions shall apply.

- a) Name of the product for example bottled drinking water
- b) Brand name or trade name
- c) Net volumes in System International / Metric System
- d) Name and address of the manufacturer
- e) Batch number or Code number
- f) Date of Expiry
- g) Chemical composition e.g. Sulfate, Magnesium, Potassium etc.
- h) Pakistan Standard number, PS mark and license number
- i) Date of bottling
- j) Location and name of the source.

Sampling

- In any consignment all the bottles of the same size and belonging to one batch of the manufacturer or supply shall constitute a **LOT**
- Each bottle of the sample shall be marked with necessary details of sampling and the bottles for bacteriological testing shall be marked separately
- The bottles of the sample shall be stored in such a manner that there shall be no deterioration of quality of water
- The bottles for bacteriological testing shall be brought to the testing laboratory within one hour, of sampling. If this is not possible the bottles shall be stored at 10 °C or below and transported to the testing laboratory within 24 hours. In case of small units, the original packing shall be treated as sample.

Scale of Sample

Sample shall be tested from each lot for ascertaining its conformity to the requirements of this specification. The number of bottles to be selected from a lot shall be in accordance with the following table.

Table: R-1

Number of Bottles in the Lot	Number of bottles to be selected
Up to 1000	15
1001 to 3000	17
3001 to 10,000	18
10,001 and above	24

R-2: If bottles are packed in cases, 10 percent of the cases subject to minimum of five cases shall be selected from the lot and as far as possible an equal number of bottles shall be selected from each case so selected to form a sample of sizes given in the table **R-1**.

Number of Test

- A. Each bottle selected as in R-1 and R-2 shall be inspected for packaging and marking requirements
- B. The bottle shall be selected from the bottles, selected as in R-1 and R-2 and tested individually for bacteriological limits
- C. A sufficiently quantity of water shall be drawn from each of the remaining bottles and mixed to form a composite sample thus obtained shall be tested for the requirements for its suitability and chemical composition.

Criteria for Conformity

A **LOT** shall be declared as conforming to the requirements of this specification, if the following conditions are satisfied.

- Each bottle inspected as “**A**” satisfies the relevant requirements
- Each bottle when tested as in “**B**” satisfies the relevant information
- Composite sample when tested as in “**C**” satisfies the relevant requirements

Government of Pakistan as initiated steps to launch programs against substandard bottled water. The Pakistan Council of Research on Water Resources (PCRWR) has launched a campaign against substandard and unlicensed brands of mineral water being sold in the market. The PCRWR has conducted a series of tests of 65 registered brands of mineral water last month and 8 were found unsafe and some of them substandard. It is recommended to fulfill all the requirements of the Pakistan

Quality Control Authority for getting a license for the production and marketing of bottled / mineral water in Pakistan

MACHINERY & EQUIPMENT REQUIREMENTS

Most of the water purification plants being installed in the country are Reverse Osmosis based. Government also recommends RO based technology. This study is based on Reverse Osmosis technology. Most of the machinery is imported from China, Taiwan, Italy and Germany along with some local components. Cost of the machinery is as following.

Table: Machinery Cost

Machinery Name	Cost
R.O Plant Unit (Imported with duty and taxes)	Rs. 84,231,970

SUPPLIER DETAILS

In order to facilitate potential investors, contact details of private sector service providers relevant to propose project is given:

Name of Supplier	Address	Cell	E-mail	Website
Mr. Ayaz Khan	LS.77 Sector 11-I UP More north Karachi	021-35000643 03000867295	rotackwater@gmail.com	www.pkwater.com.pk
Naveed	03332065847	03332065847	Hydro safe@gmail.com	

FINANCIAL ANALYSIS

Project Costs

Total project cost for the RO Mineral Water Plant is estimated to be around Rs. 235,153,654. This includes costs of capital expenditure as well as working capital required for the project in the initial year.

Table Project Cost Details

Capital Investment	Rs. in actuals
Land	21,780,000
Building/Infrastructure	58,650,500
Machinery, Equipment & Laboratory	84,231,970
Bottles	5,400,000
Furniture & fixtures	3,400,000
Office vehicles	36,500,000
Office equipment	2,480,000
Pre-operating costs (Connections charges, Surveys & Accruals)	4,780,000
Legal, Licencing & Promotional Expense	1,000,000
Total Capital Costs	218,222,470
Working Capital	Rs. in actuals
Equipment spare part inventory	-
Raw material inventory	10,466,905
Upfront building rental	-
Upfront insurance payment	4,464,279
Cash	2,000,000
Total Working Capital	16,931,184
Total Investment	235,153,654

Land:

The space requirement for the proposed Mineral water processing plant for 100,000 GPD is approx. 01 acre and estimated by considering various facilities including management office, production hall, storage, open space, etc. Details of space requirement and cost related to land & building is given below:

Building/Infrastructure

Management building	1,500	3,000	4,500,000
Factory	5,000	3,000	15,000,000
Store	8,000	3,000	24,000,000
Cafeteria	500	3,000	1,500,000
Pavement/driveway	2,000	500	1,000,000
Rest Room for Management	500	4,500	2,250,000
Rest Room for Labour	1,000	3,500	3,500,000
Open Space	23,560	50	1,178,000
Boundary Wall	835	3,500	2,922,500
Boring	700	4,000	2,800,000
Total Infrastructure	42,060		58,650,500

Human Resource Requirement

Post	Average
CEO / Owner	250,000
Admin & Accounts Manager	150,000
Assistant Admin & Accounts Manager	75,000
QC Officer / Production Officer	100,000
Production Officer / Plant Opera	60,000
Driver	30,000
Washer	25,000
Filler	25,000
Loader	25,000
Plant Helper	25,000
Peons	25,000
Marketing Manager	200,000
Marketing & Sales Officer	50,000
Customer Service Officer	30,000
Watchman	25,000

Utilities and other costs

An essential cost to be borne by the project is the cost of electricity. The direct electricity expenses are estimated to be around Rs. 7,151,760 per year. Furthermore, promotional expense being essential for marketing of Mineral water bottling plant is estimated as 20% of Revenue.

Capital Structure

The proposed project is based on 100% equity.

Table: Capital Structure Details

Description	Debt/Equity Ratio	Amount in Rs.
Debt	0%	-
Equity	100%	235,153,654

Project Returns

The details of project returns are as following:

Table: Returns

IRR	32%
-----	-----

PAYBACK (Yr.)	4.15
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FINANCIAL ASSUMPTIONS

The financial projections are based on the following assumptions:

Revenue Assumptions

Selling Price of Bottle

The proposed market price for selling 1 bottle of 19 liter is Rs. 110.

Table: Annual Growth Rates Assumed

Price Growth Rate	10%
Annual Increase in Capacity Utilization	5%

Starting Capacity of Plant

Starting annual capacity of the plant is 40% on the basis of single shift operation of 08 hours/ day.

No. of Bottles

The starting no. of bottles (utilized capacity) per year is assumed to be 875,368

Description	Quantity	Unit Cost	Total (Rs.)
Bottle (Empty)	4,000	1,350	5,400,000
Total			5,400,000

FINANCIAL 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	175,073,684	216,653,684	264,798,947	320,406,726	384,488,072	458,181,619	542,768,994	639,692,029	750,571,981	877,231,003	
<i>Cost of sales</i>											
Cost of goods sold 1	20,933,811	25,199,074	29,958,900	35,261,625	41,159,933	47,711,222	54,978,008	63,028,360	71,936,368	81,782,658	
Operation costs 1 (direct labor)	14,040,000	15,406,954	16,906,997	18,553,086	20,359,441	22,341,665	49,033,762	53,807,758	59,046,558	64,795,414	
Operating costs 3 (direct electricity)	7,151,760	7,866,936	8,653,630	9,518,993	10,470,892	11,517,981	12,669,779	13,936,757	15,330,433	16,863,476	
Total cost of sales	42,125,571	48,472,965	55,519,526	63,333,704	71,990,266	81,570,868	116,681,549	130,772,875	146,313,358	163,441,548	
Gross Profit	132,948,114	168,180,720	209,279,421	257,073,023	312,497,806	376,610,750	426,087,445	508,919,154	604,258,623	713,789,454	
	76%	78%	79%	80%	81%	82%	79%	80%	81%	81%	
<i>General administration & selling expenses</i>											
Administration expense	18,120,000	19,884,189	21,820,142	23,944,581	26,275,860	28,834,114	63,282,889	69,444,201	76,205,386	83,624,850	
Administration benefits expense	1,268,400	1,391,893	1,527,410	1,676,121	1,839,310	2,018,388	4,429,802	4,861,094	5,334,377	5,853,740	
Electricity expense	3,194,947	3,514,442	3,865,886	4,252,475	4,677,722	5,145,494	5,660,044	6,226,048	6,848,653	7,533,518	
Maintainance expense	4,211,598	4,506,410	4,821,859	5,159,389	5,520,546	5,906,985	6,320,474	6,762,907	7,236,310	7,742,852	
Fuel for Vehicles	10,345,500	11,638,688	12,931,875	14,225,063	15,518,250	16,811,438	18,104,625	19,397,813	20,691,000	21,984,188	
Communications expense (phone, fax, mail, internet, etc.)	1,812,000	1,988,419	2,182,014	2,394,458	2,627,586	2,883,411	6,328,289	6,944,420	7,620,539	8,362,485	
Office vehicles running expense	5,475,000	6,022,500	6,624,750	7,287,225	8,015,948	8,817,542	9,699,296	10,669,226	11,736,149	12,909,764	
Office expenses (stationary, entertainment, janitorial services, etc.)	1,630,800	1,789,577	1,963,813	2,155,012	2,364,827	2,595,070	5,695,460	6,249,978	6,858,485	7,526,237	
Promotional expense	35,014,737	43,330,737	52,959,789	64,081,345	76,897,614	91,636,324	108,553,799	127,938,406	150,114,396	175,446,201	
Insurance expense	4,464,279	4,017,851	3,571,423	3,124,995	2,678,567	2,232,139	1,785,712	1,339,284	892,856	446,428	
Professional fees (legal, audit, consultants, etc.)	3,501,474	4,333,074	5,295,979	6,408,135	7,689,761	9,163,632	10,855,380	12,793,841	15,011,440	17,544,620	
Depreciation expense	16,133,722	16,214,722	16,307,872	16,414,994	16,538,185	17,227,377	17,330,756	17,449,642	17,586,360	17,743,587	
Amortization of pre-operating costs	956,000	956,000	956,000	956,000	956,000	-	-	-	-	-	
Amortization of legal, licensing, and training costs	200,000	200,000	200,000	200,000	200,000	-	-	-	-	-	
Bad debt expense	5,252,211	6,499,611	7,943,968	9,612,202	11,534,642	13,745,449	16,283,070	19,190,761	22,517,159	26,316,930	
Miscellaneous expense 1	2,500,000	2,625,000	2,756,250	2,894,063	3,038,766	3,190,704	3,350,239	3,517,751	3,693,639	3,878,321	
Subtotal	114,080,668	128,913,112	145,729,030	164,786,058	186,373,585	210,208,069	277,679,835	312,785,370	352,346,749	396,913,719	
Operating Income	18,867,446	39,267,608	63,550,391	92,286,965	126,124,220	166,402,682	148,407,610	196,133,784	251,911,874	316,875,736	
Earnings Before Interest & Taxes	18,867,446	39,267,608	63,550,391	92,286,965	126,124,220	166,402,682	148,407,610	196,133,784	251,911,874	316,875,736	
Subtotal	-	-	-	-	-	-	-	-	-	-	
Earnings Before Tax	18,867,446	39,267,608	63,550,391	92,286,965	126,124,220	166,402,682	148,407,610	196,133,784	251,911,874	316,875,736	
Tax	3,773,489	7,853,522	12,710,078	18,457,393	25,224,844	33,280,536	29,681,522	39,226,757	50,382,375	63,375,147	
NET PROFIT/(LOSS) AFTER TAX	15,093,957	31,414,086	50,840,313	73,829,572	100,899,376	133,122,146	118,726,088	156,907,027	201,529,499	253,500,589	
Balance brought forward		6,037,583	14,980,668	26,328,392	40,063,186	56,385,025	75,802,868	77,811,583	93,887,444	118,166,777	
Total profit available for appropriation	15,093,957	37,451,669	65,820,980	100,157,964	140,962,562	189,507,170	194,528,956	234,718,610	295,416,943	371,667,366	
Dividend	9,056,374	22,471,001	39,492,588	60,094,778	84,577,537	113,704,302	116,717,374	140,831,166	177,250,166	223,000,420	
Balance carried forward	6,037,583	14,980,668	26,328,392	40,063,186	56,385,025	75,802,868	77,811,583	93,887,444	118,166,777	148,666,946	
	9%	14%	19%	23%	26%	29%	22%	25%	27%	29%	

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
Assets											
<i>Current assets</i>											
Cash & Bank	2,000,000	17,014,375	39,881,903	63,878,239	89,656,598	111,869,132	141,881,157	153,664,729	178,599,683	210,714,876	252,674,234
Accounts receivable		7,194,809	8,049,193	9,892,862	12,024,774	14,484,140	17,315,131	20,567,478	24,297,144	28,567,069	33,448,007
Raw material inventory	10,466,905	12,599,537	14,979,450	17,630,812	20,579,966	23,855,611	27,489,004	31,514,180	35,968,184	40,891,329	40,891,329
Pre-paid insurance	4,464,279	4,017,851	3,571,423	3,124,995	2,678,567	2,232,139	1,785,712	1,339,284	892,856	446,428	446,428
Total Current Assets	16,931,184	40,826,572	66,481,968	94,526,909	124,939,906	152,441,022	188,471,003	207,085,671	239,757,867	280,619,702	327,459,998
<i>Fixed assets</i>											
Land	21,780,000	21,780,000	21,780,000	21,780,000	21,780,000	21,780,000	21,780,000	21,780,000	21,780,000	21,780,000	21,780,000
Building/Infrastructure	58,650,500	55,717,975	52,785,450	49,852,925	46,920,400	43,987,875	41,055,350	38,122,825	35,190,300	32,257,775	29,325,250
Machinery & equipment	84,231,970	75,808,773	67,385,576	58,962,379	50,539,182	42,115,985	33,692,788	25,269,591	16,846,394	8,423,197	-
Bottles	5,400,000	5,670,000	5,980,500	6,337,575	6,748,211	7,209,847	7,721,483	8,283,119	8,894,755	9,566,391	10,296,749
Furniture & fixtures	3,400,000	3,060,000	2,720,000	2,380,000	2,040,000	1,700,000	1,360,000	1,020,000	680,000	340,000	-
Office vehicles	36,500,000	32,850,000	29,200,000	25,550,000	21,900,000	18,250,000	14,600,000	10,950,000	7,300,000	3,650,000	-
Office equipment	2,480,000	2,232,000	1,984,000	1,736,000	1,488,000	1,240,000	992,000	744,000	496,000	248,000	-
Total Fixed Assets	212,442,470	197,118,748	181,835,526	166,598,879	151,415,793	141,769,528	125,575,939	109,434,039	93,351,582	77,337,484	61,401,999
<i>Intangible assets</i>											
Pre-operation costs	4,780,000	3,824,000	2,868,000	1,912,000	956,000	-	-	-	-	-	-
Legal, licensing, & training costs	1,000,000	800,000	600,000	400,000	200,000	-	-	-	-	-	-
Total Intangible Assets	5,780,000	4,624,000	3,468,000	2,312,000	1,156,000	-	-	-	-	-	-
TOTAL ASSETS	235,153,654	242,569,319	251,785,494	263,437,788	277,511,699	294,210,550	314,046,942	316,519,710	333,109,449	357,957,186	388,861,997
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable		1,378,083	1,651,172	1,955,742	2,294,860	2,671,872	3,090,420	3,554,473	4,068,351	4,636,755	5,041,397
Total Current Liabilities	-	1,378,083	1,651,172	1,955,742	2,294,860	2,671,872	3,090,420	3,554,473	4,068,351	4,636,755	5,041,397
<i>Shareholders' equity</i>											
Paid-up capital	235,153,654	235,153,654	235,153,654	235,153,654	235,153,654	235,153,654	235,153,654	235,153,654	235,153,654	235,153,654	235,153,654
Retained earnings		6,037,583	14,980,668	26,328,392	40,063,186	56,385,025	75,802,868	97,811,583	126,666,944	168,797,777	238,666,946
Total Equity	235,153,654	241,191,237	250,134,321	261,482,046	275,216,839	291,538,679	310,956,522	312,965,236	329,041,098	353,320,431	383,820,600
TOTAL CAPITAL AND LIABILITIES	235,153,654	242,569,319	251,785,494	263,437,788	277,511,699	294,210,550	314,046,942	316,519,710	333,109,449	357,957,186	388,861,997

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		15,093,957	31,414,086	50,840,313	73,829,572	100,899,376	133,122,146	118,726,088	156,907,027	201,529,499	253,500,589
Add: depreciation expense		16,133,722	16,214,722	16,307,872	16,414,994	16,538,185	17,227,377	17,330,756	17,449,642	17,586,360	17,743,587
amortization of pre-operating costs		956,000	956,000	956,000	956,000	956,000	-	-	-	-	-
amortization of training costs		200,000	200,000	200,000	200,000	200,000	-	-	-	-	-
Accounts receivable		(7,194,809)	(854,384)	(1,843,670)	(2,131,912)	(2,459,366)	(2,830,991)	(3,252,348)	(3,729,666)	(4,269,924)	(4,880,938)
Raw material inventory	(10,466,905)	(2,132,632)	(2,379,913)	(2,651,363)	(2,949,154)	(3,275,645)	(3,633,393)	(4,025,176)	(4,454,004)	(4,923,145)	-
Advance insurance premium	(4,464,279)	446,428	446,428	446,428	446,428	446,428	446,428	446,428	446,428	446,428	-
Accounts payable		1,378,083	273,089	304,569	339,118	377,012	418,549	464,053	513,878	568,404	404,642
Cash provided by operations	(14,931,184)	24,880,749	46,270,029	64,560,149	87,105,047	113,681,991	144,750,115	129,689,802	167,133,304	210,937,621	266,767,879
<i>Financing activities</i>											
Issuance of shares	235,153,654	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	235,153,654	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(218,222,470)	(810,000)	(931,500)	(1,071,225)	(1,231,909)	(6,891,920)	(1,033,788)	(1,188,856)	(1,367,185)	(1,572,262)	(1,808,102)
Acquisitions											
Cash (used for) / provided by investing activities	(218,222,470)	(810,000)	(931,500)	(1,071,225)	(1,231,909)	(6,891,920)	(1,033,788)	(1,188,856)	(1,367,185)	(1,572,262)	(1,808,102)
NET CASH	2,000,000	24,070,749	45,338,529	63,488,924	85,873,138	106,790,071	143,716,327	128,500,946	165,766,120	209,365,359	264,959,778
Cash balance brought forward		2,000,000	17,014,375	39,881,903	63,878,239	89,656,598	111,869,132	141,881,157	153,664,729	178,599,683	210,714,876
Cash available for appropriation	2,000,000	26,070,749	62,352,904	103,370,827	149,751,377	196,446,669	255,585,459	270,382,103	319,430,849	387,965,042	475,674,654
Dividend		9,056,374	22,471,001	39,492,588	60,094,778	84,577,537	113,704,302	116,717,374	140,831,166	177,250,166	223,000,420
Cash balance	2,000,000	17,014,375	39,881,903	63,878,239	89,656,598	111,869,132	141,881,157	153,664,729	178,599,683	210,714,876	252,674,234
Cash carried forward	2,000,000	17,014,375	39,881,903	63,878,239	89,656,598	111,869,132	141,881,157	153,664,729	178,599,683	210,714,876	252,674,234

Calculations										
Revenue Generation										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Production capacity (units)	2,188,421	2,188,421	2,188,421	2,188,421	2,188,421	2,188,421	2,188,421	2,188,421	2,188,421	2,188,421
Starting capacity utilization	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Capacity utilization growth rate		5%	5%	5%	5%	5%	5%	5%	5%	5%
Capacity utilization for the year	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%
Production per year	875,368	984,789	1,094,211	1,203,632	1,313,053	1,422,474	1,531,895	1,641,316	1,750,737	1,860,158
Production quantity sold	875,368	984,789	1,094,211	1,203,632	1,313,053	1,422,474	1,531,895	1,641,316	1,750,737	1,860,158
Sale price per unit	200	220	242	266	293	322	354	390	429	472
Revenue	175,073,684	216,653,684	264,798,947	320,406,726	384,488,072	458,181,619	542,768,994	639,692,029	750,571,981	877,231,003

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