Pre-Feasibility Study to Establish a Dry Mix Plant

February 2019

Pre-Feasibility Study to Establish a Dry Mix Plant

Market, Technical and Financial Analysis

Study Report

Table of Contents

List of Tables

List of Figures

Disclaimer

While GOIC makes diligent efforts in its performance of the consultancy services, GOIC doesn't express or imply warranties as success that may be achieved in the implementation of any recommendation contained therein, and without limitation to the immunities and privileges of GOIC under the applicable rules of law, GOIC shall not be liable to the Client, or the others for any loss, cost, damage or liability.

إخلاء المسؤولية

حيث تبذل المنظمة جهوداً حثيثة في أدائها للخدمات الاستشارية، فإنها لا تقدم أي ضمان صريح أو ضمني بتحقيق نتائج ناجحة من تطبيق أي من التوصيات الواردة بها، وبدون تحديد لحصانات وامتيازات المنظمة بموجب القواعد القانونية الواجبة التطبيق، فإن المنظمة لا تكون مسؤولة تجاه العميل أو الغير، عن أي خسارة، أو تكلفة، أو أضرار، أو مسؤولية.

The following contributed to preparing the study: 1. Talal Abu Ghazleh & Co. 2. Eng. Suleiman Albalushi, GOIC	ساهم في إعداد الدراسة كل من: 1. شركة طلال أبو غزالة- سلطنة عمان 2. المهندس /سليمان البلوشي

Executive Summary

The potential for Dry Mix is medium to high given the availability of local raw materials of limestone, cement and gypsum, this coupled with the trend in use of moving away from the traditional mixing of dry mix plaster on site to the new technological advancement in pre-prepared dry mix at plant and then delivered on site provides an accuracy of the required mix of ingredients and efficiency of application on the required surface.

Currently the competition is limited in Oman with one major player operational selling price the product in bulk at the rate of 30/RO per ton. The pre-feasibility study calculated 25/RO per ton given the possible fluctuation in prices and conservative lower price per ton to compete. The total land is estimated at 5,000sqm and required built up area for plant and offices is estimated at 2,500sqm

The cost of investment for plant and machinery amounts in the region of 0.6 million RO and the proposed production is estimated at 38,400 tons in year 1 accounting for 40% of the installed capacity. The estimated imported demand of 300,000 tons per year. The local markets is sufficient to cover the production capacities with potential for exports to be increased thus requires penetration of regional markets.

In terms of profitability the gross profit margin is 20% in year 1 the initial 3 years and reaching a maximum of 27% in year 63rd year, whereas the net profit is 1.3% in year 1 reaching a maximum of 17.6% in the 6th year.

PROJECT HIGHLIGHTS

Name of Project:	Dry Mix Plant.
Total Investment Cost:	**964,350 OMR**
Plant Cost:	630,000 OMR
Building Cost:	231,750 OMR

Plant Capacity: The proposed Plant will have & installed capacity of 38,400 tons in 1st year operation.

Local Market Demand. The total estimated Oman import demand 300,000 tons.

Source of finance: 60% Debt & 40% equity.

Total Investment	Production capacity	Revenue
•964,350 OMR •Total Production Capacity 1st year = 38,400 tons	•Year 1 = 40% •Year 2 = 50% •Year 3 = 60% •Year 4 = 70% •Year 5 = 80% •Year 6 = 90% •Year 7 = 90%	•Yr 1= 1.0 million OMR •Yr 2= 1.3 million OMR •Yr 3= 1.6 Million OMR •Yr 4= 1.8 Million OMR •Yr 5= 2.1 Million OMR •Yr 6= 2.4 Million OMR

Broad Scope of Study & Methodology

This feasibility study covers three main area's to include market research, evaluation of the technical aspects and the financial analysis to determine the feasibility of the project.

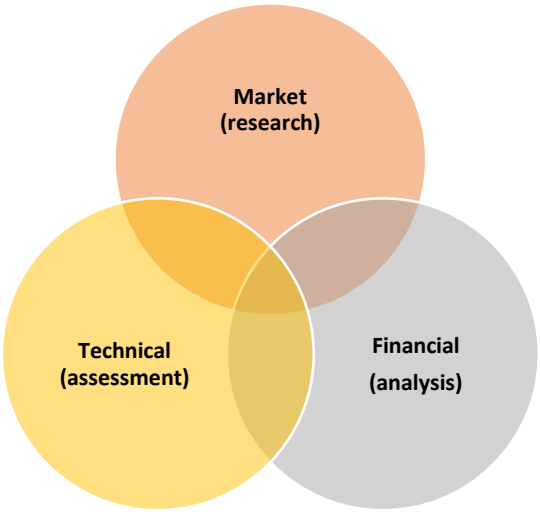
The Market Assessment consists of:

- Market size of Dry Mix in Oman.
- Overview of the local competitors in Oman & GCC region.
- Supply & Demand: estimate the supply & demand of Dry Mix products to include import, export & review of competition in the GCC region.
- Market share of the proposed new plant.

The Technical Part of the Study comprises all technical requirements needed to render the Dry Mix plant operational to include capacity utilization, raw material, staff requirements & process flow.

The Financial Analysis for the project covers the following:

- Cost of the project (total investment)
- Source of Finance (equity & debt)
- Financial assumptions
- Financial schedules comprising:
  - Projected Income Statement
  - Projected Balance Sheet
  - Projected Cash Flow Statement
  - Projected Revenue Stream
  - Depreciation Schedule
  - Salaries (Number of required employees & the expected Salaries)
  - Loan repayment Schedule
  - Finance Cost
  - Financial Ratios
  - Internal Rate of Return & Payback period.



Chapter 1

Introduction

1.1. Introduction Dry Mix

The concept of dry mix is used for plastering, masonry, tile adhesives, flooring screed, and repairing of buildings in construction, the dry mix is based on limestone as the main ingredient and cement being the main binder. The dry mix mortar products are available in pre-bagged form or in bulk by means of silo and can enable significant enhancement on building quality based on simple mix and apply operations.

1.2. Dry Mix Products & Applications

Dry mix mortars are used in many different applications in the construction of a building. Some of these applications are universal and some others are specific to certain regions or countries.

The key dry mix products and applications in Oman and within the GCC region are as follows:

a. Tile adhesives
b. Gypsum Plaster
c. Renders and plasters based on gypsum or cement (coloured)
d. Tile grouts (Non Shrink Grout)
e. Self-leveling screeds
f. Brick-laying masonry mortars & Repair mortars

The advantages for dry mix mortar include:

1. Factory made dry mortar with quality certification as per standards.
2. Usage of local quality raw materials as per the applicable standards
3. Green products for environment sustainability (waste raw materials by products of marble and aggregate sands can be a substitute)
4. Educating the users on good construction practices and quality of the contents
5. Pursuing the industry to deliver structures with good standards
6. Testing of products for all technical parameters and creating awareness about the technical attributes to users for choosing the right product
7. Proper quantification of materials and reduction in wastage
8. Speed
9. Hassle free and ease of application and usages

1.3. Project Overview

Dry mix products provide excellent technical properties to meet the stringent performance requirements that are common in the current construction scenario. Additionally, the use of dry mix mortar products is economical as they reduce the potential construction problems with the long-term integrity of structures with a simple materials approach.

Dry mixed mortar contains the precise blend of materials and only requires the addition of water to produce a suitable render. Dry mix mortar comprises of special additives that improve the workability of renders and help them bond to the background and reduce the risk of cracking. They can be also used for decorative finishes. Rendering is done in almost all of the construction applications to achieve a smooth or deliberately textured surface.

This project entails the set-up of a new Dry Mix Plant. The production output of the new proposed plants will focus on certain Oman market.

Target Market	
Oman Import Substitution 80%	Export 20%

Assumptions

- Market Rate Selling Price amount to 30 – 34 RO per ton study has estimated a lower value of 25 /RO.
- Target Market Local 90% Export 10%
- Omanisation achievable at minimum rate of 70%.
- Welfare estimated at 15% covering for Tickets, Holidays & Other employee expenses.
- 2 shift system
- Working Capital for Raw material and Salaries is for 3 months

Production Capacity

PRODUCTION CAPACITY		
Total Installed Capacity	96,000	tons per year
Installed Capacity	20	Tons per Hour
No of Shifts	2	Per Day
No of Hours Per Shift	8	Per Shift
Working Day Per Year	300	days

The proposed Dry Mix Plant products consist of 2 types of products size:

Si.No.	Description	Size kg
A	Bag	50
B	Bulk	1,000

Market Analysis

Market Analysis

2.1. Market Overview

Increasing construction activities in GCC, is expected to drive the use of dry mix mortar in rendering over the coming years, and construction activities have a preference for cost-effective construction techniques, and are favoring this product given the market growth in countries such as UAE and KSA.

GCC is among the global drivers in the consumption of dry mix products, owing to the huge infrastructure and residential growth taking place in these countries. KSA government has rolled out massive construction plans, including making provision for huge residential projects. In Oman, the trend of dry mix mortar is catching up for the past 2-3 years and is showing a good prospect for the future in the construction industry and by using dry mortar products the quality and speed of construction increases.

Dry mortar is dry powder or granular material made by mixing dried screening process of fine aggregate, cementitious materials, additives, fillers, etc. Most of the dry mortar products contain both mineral cementitious binder (e.g. OPC) and polymer binder (e.g. re-dispersible powder) and they are normally packed in bags after mixing in the factory.

In recent years, with the continuous improvement of environmental protection requirements, it has become an urgent task of the local building authorities to promote the use of dry mortar. One key factor that has been driving the demand is the ability of these products is to save labor costs; with the use of specialized application equipment, substantial improvement in workmen efficiency and output has been reported due to the use of these products.

Table 2-1: Oman Dry Mix Export During the Period (2013-2017)

	2013	2014	2015	2016	2017	AGV
Value USD (000)	241	293	321	45	678	315.6
Weight in Ton	1,515	1,136	2,013	306	7,621	2,518.2

Source: Trademap.com 381600 HS Code

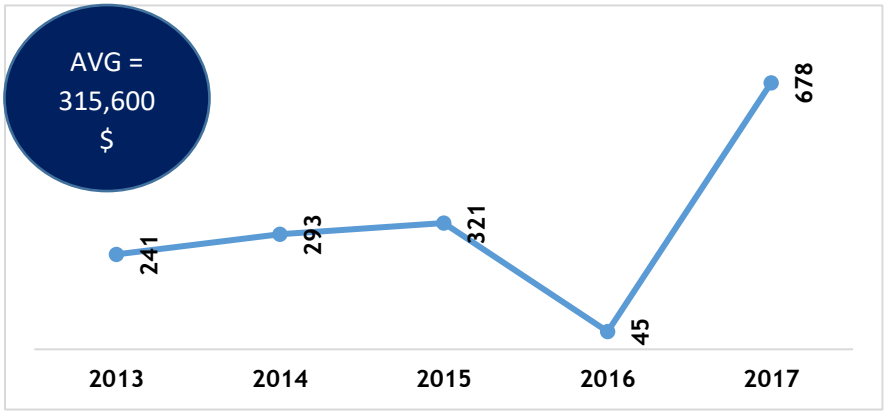


Figure 2-1: - Dry mix Exporting Value USD (000)

The export for Dry Mix amount to 241,000 USD in 2013. In the following year 2014 the total export increased to a total of 293,000 USD. In 2015 the export increased to 231,000 USD, in 2016 the total export decreased significantly to a total of 45,000 USD. In 2017 the total export of Dry Mix increased significantly to a total of 678,000 USD.

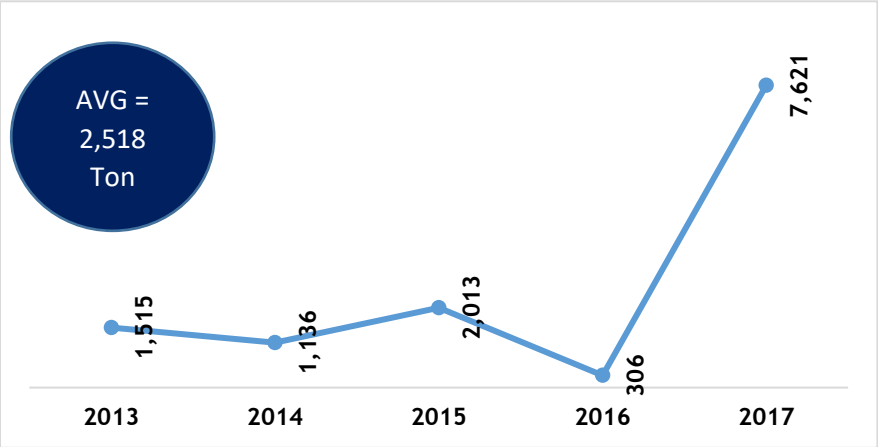


Figure 2-2: Dry mix Exporting Weight Ton

The export for Dry Mix amount to 1,515 tons in 2013. In the following year 2014 the total export decreased to a total of 1,136 tons. In 2015 the export increased to 2,013 tons, in 2016 the total export decreased significantly to a total of 306 tons. In 2017 the total export of Dry Mix increased significantly to a total of 7,621 tons.

Table 2-2: Oman Dry Mix Import During the Period (2013-2017)

	2013	2014	2015	2016	2017	AGV
Value USD (000)	25,158	29,188	33,356	32,585	15,716	27,201
Weight in Ton	117,845	120,601	297,343	335,141	93,225	192,831

Source: Trademap.com 381600 HS Code

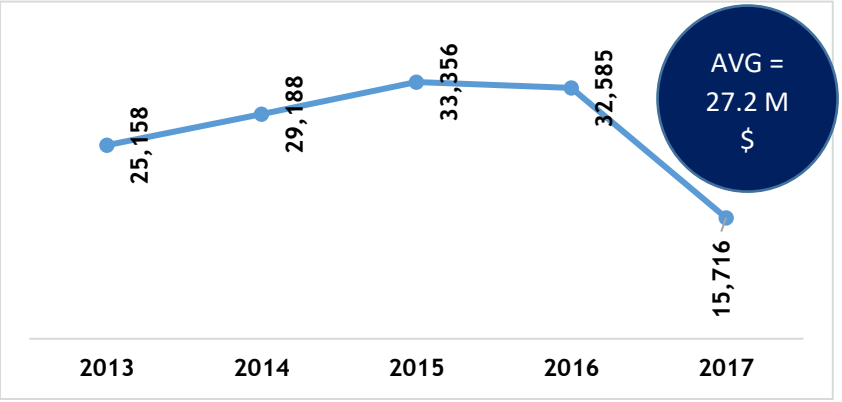


Figure 2-3: Dry mix Importing Value USD (000)

The imports for Dry Mix amount to 25.1 Million USD in 2013. In the following year 2014 the total import increased to a total of 29.1 Million USD. In 2015 the import increased to 33.3 Million USD, in 2016 the total import decreased to a total of 32.5 Million USD. In 2017 the total import of Dry Mix amount reduced significantly to a total of 15.7 Million USD.

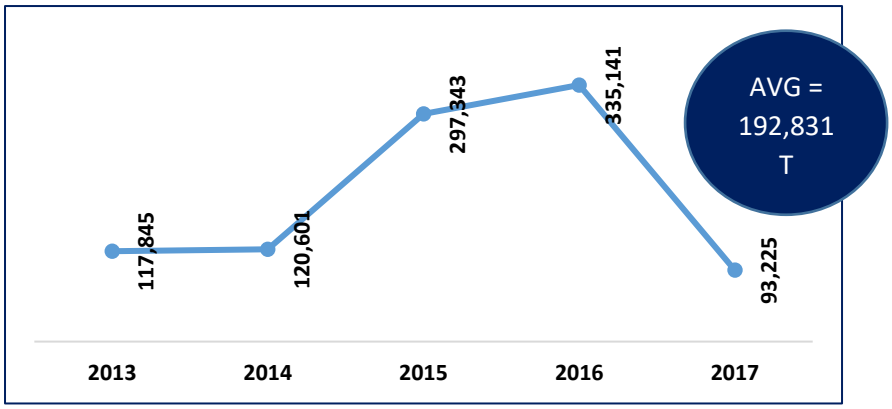


Figure 2-4: Dry mix Importing Weight Ton (000)

The imports for Dry Mix amount to 117,845 tons in 2013. In the following year 2014 the total import increased to a total of 120,601 tons. In 2015 the import increased significantly to 279,343 tons, in 2016 the total import increased to a total of 335,141 tons. In 2017 the total import of Dry Mix amount reduced significantly to a total of 93,225 tons.

Table 2-3: GCC Dry Mix Imports During the Period (2013-2017)

	2013		2014		2015		2016		2017	
	V (000)	Q (Ton)	V (000)	Q (Ton)	V (000)	Q (Ton)	V (000)	Q (Ton)	V (000)	Q (Ton)
Saudi Arabia	54,620	61,169	52,469	63,548	49,872	60,545	35,318	51,112	43,373	59,495
United Arab Emirates	39,609	45,140	41,818	49,389	26,453	32,889	20,502	28,075	22,338	31,319
Kuwait	4,327	5,113	7,619	10,416	5,532	5,944	11,555	6,195	10,894	11,034
Qatar	22,225	33,196	17,222	42,778	14,976	55,862	13,382	55,385	9,022	18,197
Bahrain	6,218	6,382	18,180	29,171	8,775	10,558	9,771	10,836	7,421	15,619
Total	26,999	151,000	37,308	195,302	105,608	165,798	90,528	151,603	93,048	135,664

Source: Trademap.com 381600 HS Code

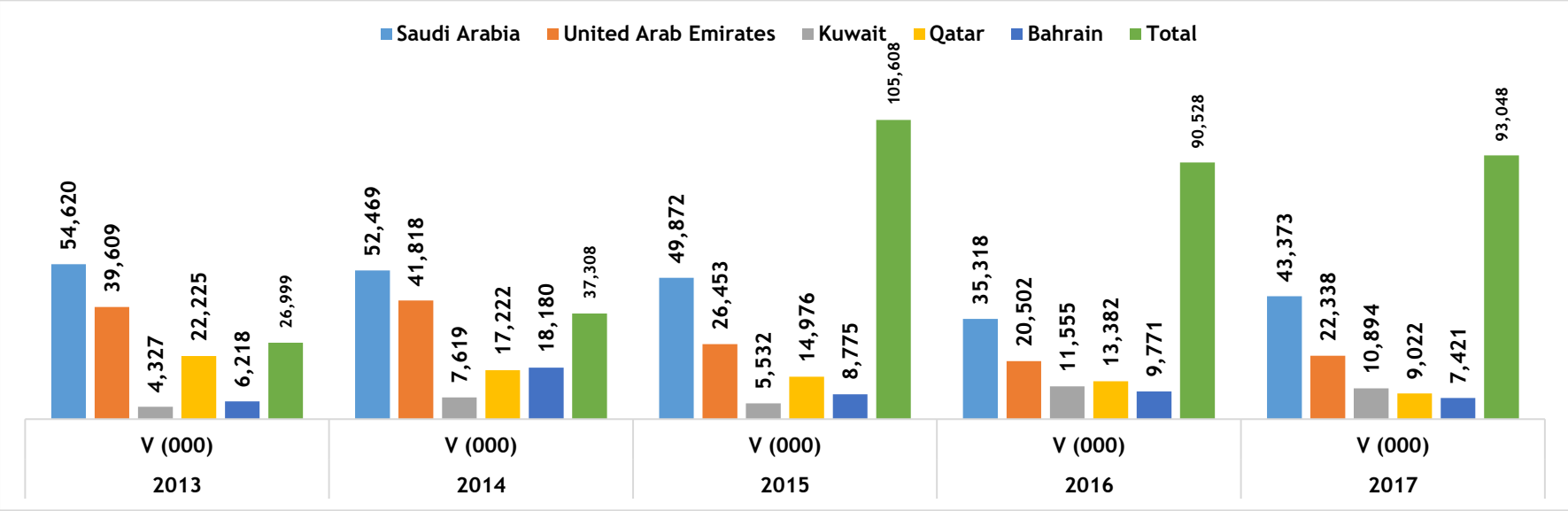
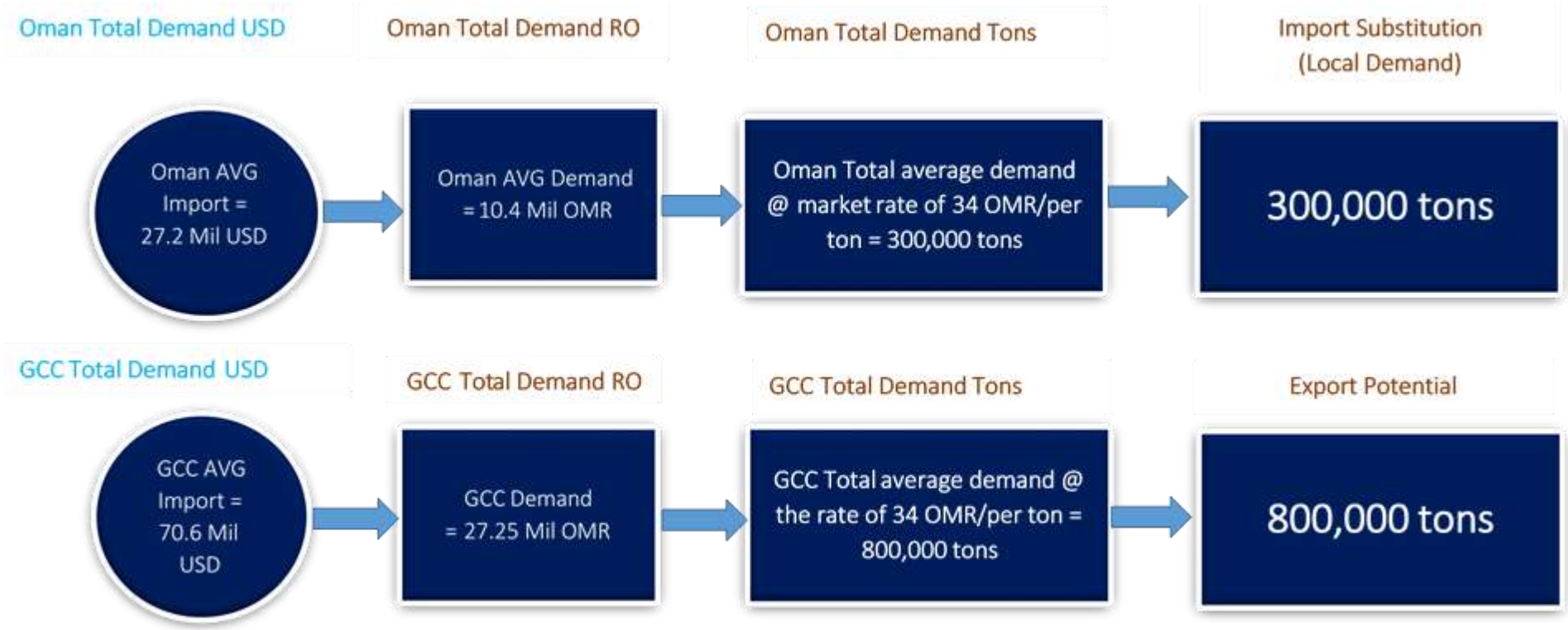


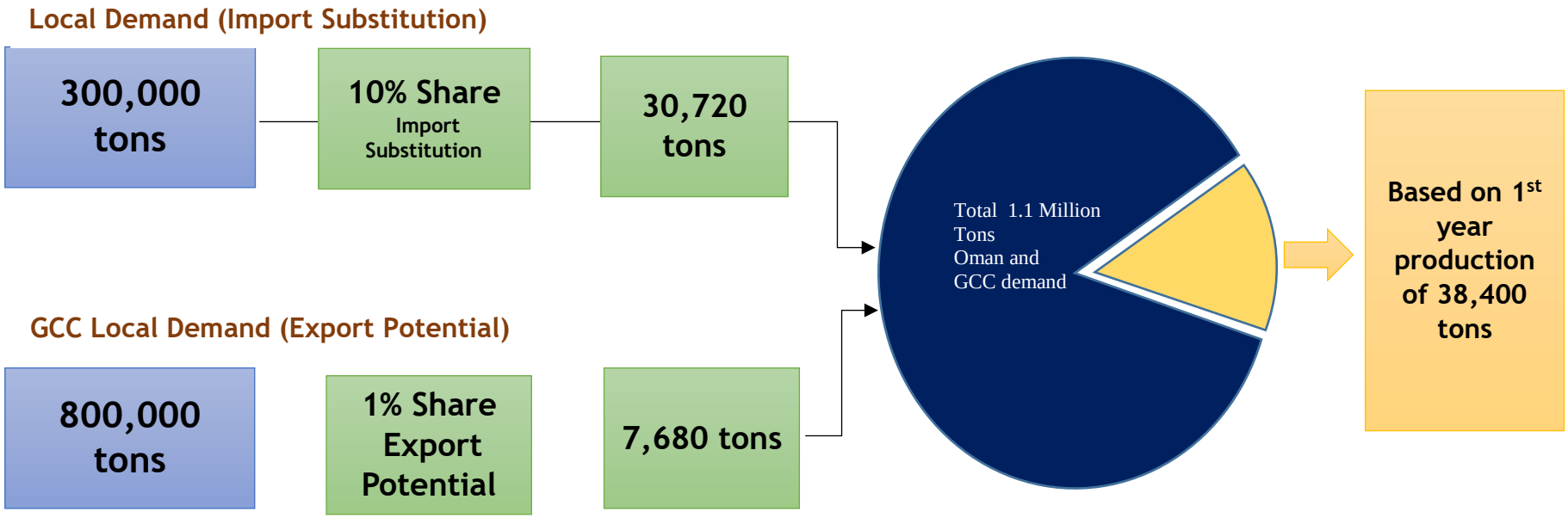
Figure 2-5: GCC Dry Mix Imports During the Period (2013-2017) – Value

Supply & Demand



The Oman imports of dry mix is estimated at 300,000 tons per year and 800,000 tons for the entire GCC market.

Market Share



It is estimated and assumed to capture a 1% market share of GCC market as export potential (20% of production) and 10% market share of import substitution (80% of production)

2.2. Major Competitors - Oman

Oman Plaster – A manufacturer of dry mix products with its manufacturing facility (German Equipment's) located in Sohar Industrial Estate; product range covers pre-blended dry mix products based on Cement and Gypsum.

Oman Plaster operation utilizes a silo system with pneumatic dry mix conveying and automatic application machines, products are accurately produced quality tested and delivered to the site in silos or bags.

Products	Application Details	Packing
Dash Coat	Dash coat material to achieve good key for rendering on normal fair faced concrete surfaces. Application by tyrolean box/ spray hopper	50 kg bags
Cement Plaster/Render	Plaster/render for internal/external concrete block walls. Application by spray machine/manual	Silo/50 kg bags
Cement Render	Render for external plinth areas. Application by spray machine/manual	Silo/50 kg bags
Cement Plaster/Render	Plaster/render for high strength (> 15 MPa) requirements. Application by spray machine/manual	Silo/50 kg bags
Decorative Colour Render	Decorative colour render for external block walls. Application by spray machine/manual	Silo/50 kg bags
Render for rock work	High strength (> 15 MPa) decorative textured color render for landscaping works. Application by spray machine/manual	Silo/50 kg bags
Gypsum Plaster	Standard gypsum plaster for internal AAC/concrete block walls. Application by spray machine/manual	Silo/25 kg bags
Masonry mortar for concrete blocks	Block laying mortar for concrete masonry block works. Mixing by screw machine/manual.	Silo/50 kg bags
Masonry mortar for AAC blocks	Block laying mortar for AAC masonry block works. Mixing by screw machine/manual.	Silo/50 kg bags
Tile Adhesive	Tile fixing adhesive for ceramic tiles on internal /external areas. Mixing by screw machine/manual.	50 kg bags
Floor Screed (10 MPa-40 MPa)	Bonded/un bonded/floating leveling screed for floors. Mixing by screw machine/manual.	Silo/50 kg bags
Repair Mortar	Fine repair mortar for concrete surfaces. Mixing by screw machine/manual.	50 kg bags
Non-shrink grout	Non-shrink grouting mortar for medium strength (40 MPa) anchoring applications. Mixing by screw machine/manual.	Silo/50 kg bags
Thermo render	Thermal insulation render for external walls (λ = 0.1 W/m.K). Application by spray machine	Silo/20 kg bags
Thermo adhesive	Thermo adhesive for EPS/XPS thermal insulation sheets. Mixing by screw machine/manual.	50 kg bags

2.3. Regional Competitors – UAE

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Al Faheem Cement Industries - 7006743	Operational	Sq.-Meter	500000	500000	500000	500000	500000
Creative Stone - 7007541	Operational	Ton	300	300	300	300	
Dafcomix Factory - 7004924	Operational	Units	148840	148840	148840		
Dry Mix Co. - 7007557	Operational	Ton	160000	160000	160000	160000	
Emirates Beton Ready mix - 7005889	Operational	Cubic-Meter	916080	916080	916080	916080	916080
Emirates Chemicals L.L.C. - 7001090	Operational	Liter	50000	50000	50000	50000	50000
Emirates Chemicals L.L.C. - 7001090	Operational	Ton	350	350	350	350	350
Emirates Public Enterprises Co. (Llc.) - 7007575	Operational	Ton	7500	7500	7500		
Emirates Ready Mix Company - 7006594	Operational	Sq.-Meter	200000	200000	200000	200000	200000
Gulf Ready mix Concrete And Blocks - 7002946	Operational	Sq.-Meter	38160000	38160000	38160000		
Gulf Ready mix Ltd. - Ajman Branch - 7004925	Operational	Units	108000	108000	108000		
High Tower Industry Llc - 7007647	Operational	Ton	1600	1600	1600	1600	
Modern Concrete Products Factory - 7003041	Operational	Cubic-Meter	50000000	50000000	50000000		
Quick Mix Baton - 7008137	Operational	Ton	3253	3253			
Rac Mix - 7007980	Operational	Ton	13608	13608	13608		
Tail Glue Adhesive Materials Factory - 7005910	Operational	Kilogram	290470	290470	290470	290470	290470
Union Cement Products - 7005859	Operational	Cubic-Meter	1000000	1000000	1000000	1000000	1000000
Welmix Concrete Dubai - 7005945	Operational	Cubic-Meter	180000	180000	180000	180000	180000

Source: IMI Database

UAE Competition Based on Survey

A survey was conducted to investigate the current competition in UAE, survey revealed several major dry mix manufactures these are listed in the opposite table.

No.	Company	Location
1	Plaxit	Abu Dhabi
2	Conmix	RAK
3	Dubai Plaster	RAK
4	Sareto	Abu Dhabi
5	Sadamco	Abu Dhabi
6	Exceed Proemium	Abu Dhabi
7	Fine Mix	RAK

Source: TAG Survey Mining Companies and Raw Material Producers

Chapter 3

Technical Evaluation

3.1. The Usage of Dry Mix Plasters and Mortars in Oman

There is a scope for wide usage of dry mix mortar mainly through renders and plaster and currently there is a huge quantity of mortars that are produced at site in the traditional manner. There are instances of failure and problems in masonry and plaster. Therefore, to ensure better performance and durability, dry mix mortars are a better alternative to the site mixed mortar.

Site Mixed Mortar	Premixed Dry Mix Mortar Made at a Factory
Proportions: A definite ratio of cement and other additives are mixed followed by addition of water thereafter which the wet mortar is applied.	**Proportions:** Ingredients are tested and then mixed in a dry mix mortar plant
Quality: Quality of mortar depends on the quality of ingredient materials, ratio of mixing and the uniformity in the mix. Hence quality is not guaranteed	**Quality:** Binders, aggregates and chemical additives are mixed together in a Plant and hence the quality is guaranteed.
Customization: Most often the mortar that is produced is using the standard proportioned there no scope for making a customized mix.	**Customization:** Dry Mix mortars could be produced with a high degree of reliability and hence the properties can be customized based on the application

3.2. Raw Material Composition

The raw material composition mainly consists of limestone accounting for 80% of the composition, this is followed by cement consisting of 12% of the raw material composition & sand 4.5%, hydrated lime 2.5% & additives 1.0%

Table 3-1: Raw Material Composition

Raw Material	%
Limestone	80%
Cement	12%
Dune Sand	4.5%
hydrated lime	2.5%
Additives	1%

Source: TAG Survey raw material Suppliers & Producers

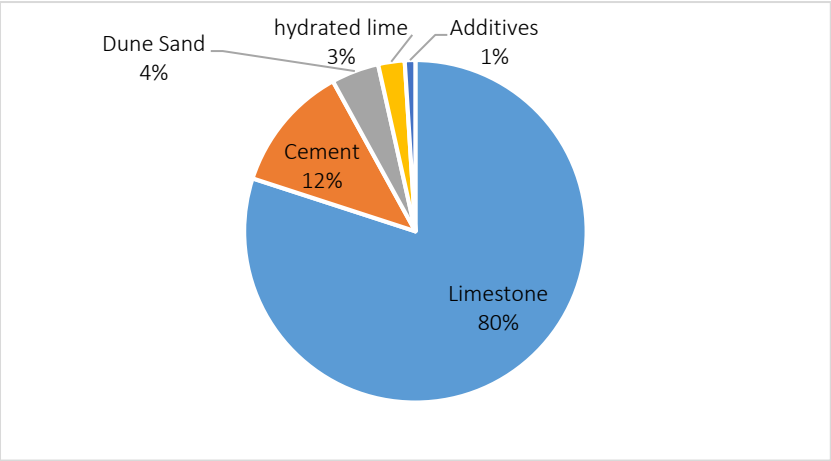


Figure 3-1: Raw Material Composition in %

3.3. Production Analysis

The production line in a typical Dry mix plant is vertical oriented and the silos for the raw materials are placed above the mixing unit. The raw materials go through a process of quality checks and then it is transported to various silos. The flow of material is through gravity along with appropriate weighing system. The fully automated unit ensures that the mixing unit is filled with required raw materials required for each formulation. The dry mix mortar once it comes out of the Plant goes through a quality check to ensure whether desired properties are obtained.

3.4. Production Flow Chart

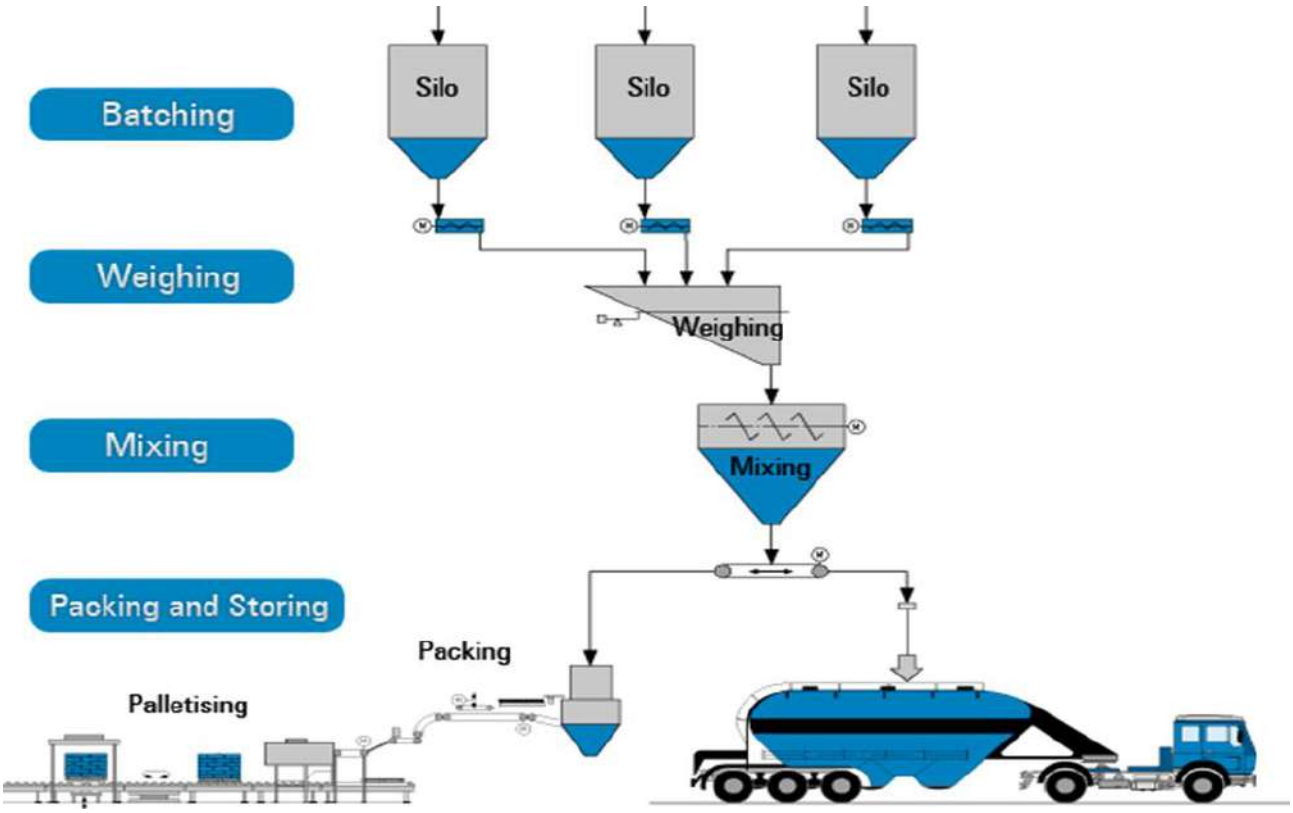


Figure 3-2: Production flow chart

3.5. Manpower

The manpower requirements are based on company industry experts experience to deem the plant operational.

The Omanisation percentage will be a minimum of 70% given the laborers account for 5 employees of the total 29 workforces.

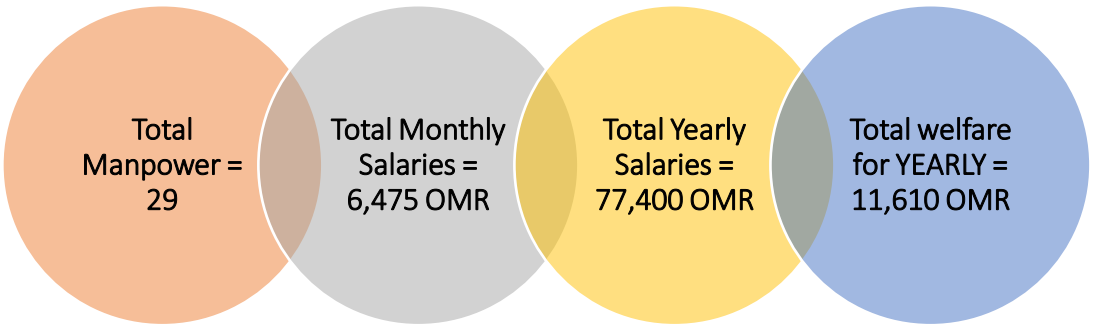
Direct staff include employees responsible for the operational and production of the Dry Mix product and indirect staff include office staff.

Table 3-2: Direct Cost Manpower Requirements

DIRECT COST MANPOWER REQUIREMENTS						
Si.No	Position	Numbers	Salary Per Month	Salary Per Year	Welfare Expenses @15%	Grand Total
1	Operations Manager	1	1,400.00	16,800.00	2,520.00	19,320.00
2	Supervisor	2	750.00	18,000.00	2,700.00	20,700.00
3	Engineer	2	600.00	14,400.00	2,160.00	16,560.00
4	Lab Technician	2	450.00	10,800.00	1,620.00	12,420.00
5	Driver Wheel Loader	2	450.00	10,800.00	1,620.00	12,420.00
6	Driver Fork Lift	2	375.00	9,000.00	1,350.00	10,350.00
7	Labourers	12	200.00	28,800.00	4,320.00	33,120.00
Total		23	4,225.00	60,000.00	9,000.00	124,890.00

Table 3-3: Indirect Cost Manpower Requirements

INDIRECT COST MANPOWER REQUIREMENTS						
Si.No	Position	Numbers	Salary Per Month	Salary Per Year	Welfare Expenses @15%	Grand Total
1	Admin Supervisor	1	600.00	7,200.00	1,080.00	8,280.00
2	Purchaser	1	450.00	5,400.00	810.00	6,210.00
3	Drivers Pick Up	1	400.00	4,800.00	720.00	5,520.00
4	PRO	1	400.00	4,800.00	720.00	5,520.00
5	Security	2	400.00	9,600.00	1,440.00	11,040.00
Total		6	2,250.00	17,400.00	2,610.00	36,570.00



3.6. Organization Chart

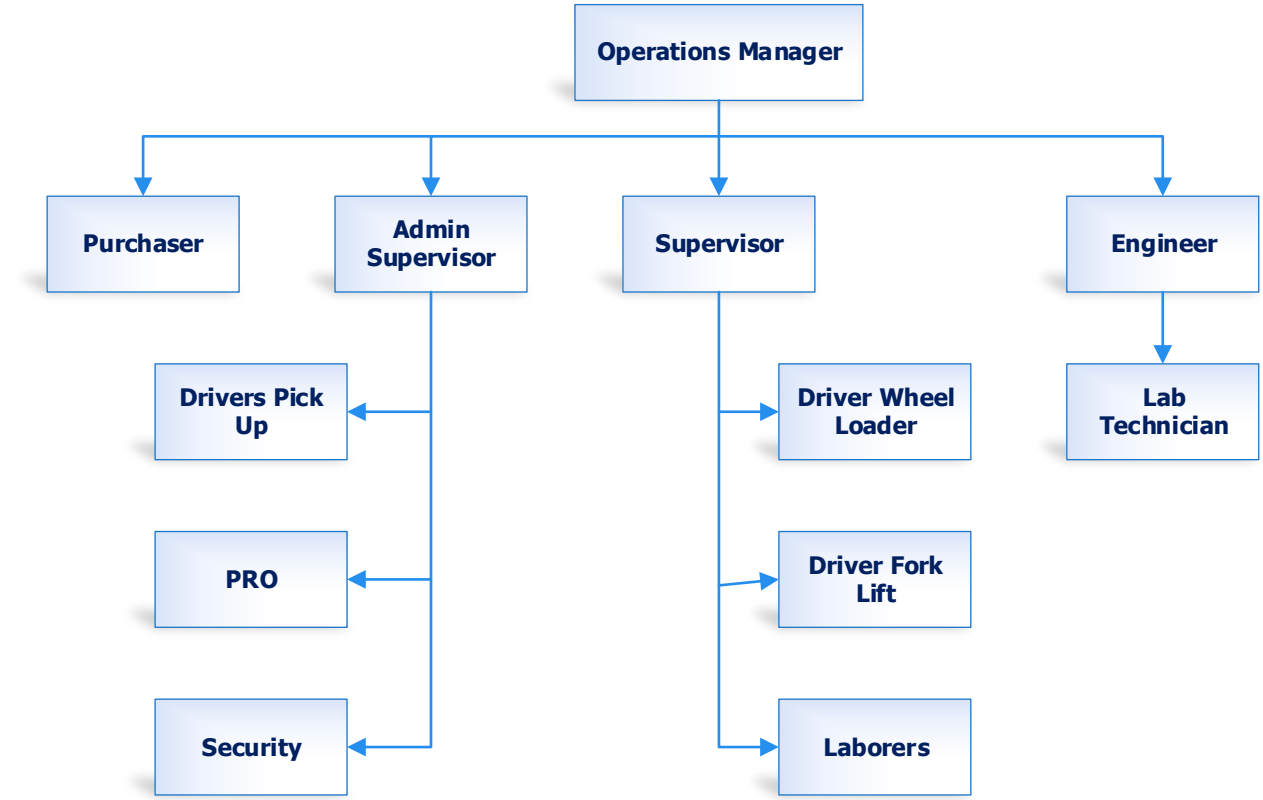


Figure 3-3: Organization chart

3.7. Project Time Frame

Table 3-4: Project time frame

ACTIVITIES	TIME IN MONTHS					
PLANT	1	2	3	4	5	6
• Design						
• Manufacture						
• Purchase						
• Shipment						
• Installation						
• Commissioning						
• Civil work						

The implementation of the project starts initially with the drawing of overall plant layout followed by civil works, procurement, delivery and installation. This requires a time frame of 6 months. In the first year of operation the plant is estimated to produce 38,400 Tons.

Chapter 4

Financial Analysis

4.1. Cost of Investment Capex

The total cost of Main machinery amounts to 630,000 /RO sourced from a local machinery supplier.

Building cost is costed at minimum with a contingency of 3% for reasons of price fluctuation in construction material cost.

The total cost of vehicles amounts to 99,000 /RO source from a local vehicle supplier.

Table 4-1: Investment Capex

Sl. No.	Description	Quantity	Cost Per Unit OMR	Total Cost OMR
	Main Machinery			
A1	Mixer			
A2	Silo			-
A3	Bunker Raw Material			
A4	Screw Conveyor			
A5	Bucket Elevator			
	Sub Total			**600,000**
			Contingency @ 5%	30,000
	GRAND TOTAL			**630,000.00**
	Building			
1a	Building office 1st Floor	2000	100	200,000
1b	Hangers	500	50	25,000
				225,000
			Contingency @ 3%	6,750
	Total Cost			231,750
	Vehicles			
1a	Wheel Loader	1	65000	65,000
1b	Fork Lift	1	12000	12,000
1c	Car Pick Up	2	8000	16,000
1d	Company Vehicle	1	6000	6,000
	Total Transportation Vehicle Cost			**99,000**
	Office Furniture & Equipment			
1a	Desk Top Computers	3	300	900.00
			Total	900.00
1b	Desk & Chairs	1	150	150.00
1c	Air Conditioning	1	300	300.00
1d	Office Equipment(Telephones, Fax & Chillers)	1	250	250.00
1e	Software	1	2000	2,000.00
	Total			**2,700.00**
	Grand Total			964,350.00

4.2. Investment Cost

Si.No.	Investment Cost	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
1a	Plant	630,000										
	Building	231,750										
2b	Vehicles	99,000						99,000				
	Computers	900				900						
4d	Office Furniture & Equipment	2,700							2,700			
Total Investment Cost (Fixed Assets)		964,350	-	-	-	900	-	99,000	2,700	-	-	-
	Acc. Cost	964,350	964,350	964,350	964,350	965,250	965,250	1,064,250	1,066,950	1,066,950	1,066,950	1,066,950

Manpower

The manpower requirements are based on company industry experts experience to deem the plant operational.

The Omanization percentage will be a minimum of 40% given the laborers account for 12 employees of the total 29 workforce.

Direct staff include employees responsible for the operational and production of the Dry Mix product and indirect staff include office staff.

DIRECT COST MANPOWER REQUIREMENTS						
Si.No	Position	Numbers	Salary Per Month	Salary Per Year	Welfare Expenses @15%	Grand Total
1	Operations Manager	1	1,400.00	16,800.00	2,520.00	19,320.00
2	Supervisor	2	750.00	18,000.00	2,700.00	20,700.00
3	Engineer	2	600.00	14,400.00	2,160.00	16,560.00
4	Lab Technician	2	450.00	10,800.00	1,620.00	12,420.00
5	Driver Wheel Loader	2	450.00	10,800.00	1,620.00	12,420.00
6	Driver Fork Lift	2	375.00	9,000.00	1,350.00	10,350.00
7	Labourers	12	200.00	28,800.00	4,320.00	33,120.00
Total		23	4,225.00	60,000.00	9,000.00	124,890.00

INDIRECT COST MANPOWER REQUIREMENTS						
Si.No	Position	Numbers	Salary Per Month	Salary Per Year	Welfare Expenses @15%	Grand Total
1	Admin Supervisor	1	600.00	7,200.00	1,080.00	8,280.00
2	Purchaser	1	450.00	5,400.00	810.00	6,210.00
3	Drivers Pick Up	1	400.00	4,800.00	720.00	5,520.00
4	PRO	1	400.00	4,800.00	720.00	5,520.00
5	Security	2	400.00	9,600.00	1,440.00	11,040.00
Total		6	2,250.00	17,400.00	2,610.00	36,570.00

4.3. Profit & Loss

Particulars	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Filling Capacity	40%	50%	60%	70%	80%	90%	90%	90%	90%	90%
Grand Total Revenue OMR	1,075,200	1,344,000	1,612,800	1,881,600	2,150,400	2,419,200	2,419,200	2,419,200	2,419,200	2,419,200
Cost of Revenue (Direct Cost)										
Raw Material	577,306	721,632	865,958	1,010,285	1,154,611	1,298,938	1,298,938	1,298,938	1,298,938	1,298,938
Manpower	124,890	128,637	132,496	136,471	140,565	144,782	149,125	153,599	158,207	162,953
Utilities	28,800	31,680	34,608	37,589	40,628	43,730	46,903	50,154	53,489	56,918
Maintenance Vehicles	10,752	13,440	16,128	18,816	21,504	24,192	24,192	24,192	24,192	24,192
Transportation	9,000	9,180	9,364	9,551	9,742	9,937	10,135	10,338	10,545	10,756
Waste	107,520	134,400	161,280	188,160	215,040	241,920	241,920	241,920	241,920	241,920
Total Direct Cost	**858,268**	**1,038,969**	**1,219,834**	**1,400,871**	**1,582,090**	**1,763,499**	**1,771,214**	**1,779,141**	**1,787,291**	**1,795,677**
Gross Profit	**216,932**	**305,031**	**392,966**	**480,729**	**568,310**	**655,701**	**647,986**	**640,059**	**631,909**	**623,523**
Indirect Expenses										
Depreciation	(98,962)	(98,962)	(98,962)	(98,962)	(98,962)	(98,962)	(98,962)	(98,962)	(98,962)	(98,962)
Manpower Indirect	(36,570)	(37,667)	(38,797)	(39,961)	(41,160)	(42,395)	(43,666)	(44,976)	(46,326)	(47,716)
Marketing, Advertising & Promotion	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)
Lease Office and Stores	(4,800)	(4,800)	(4,800)	(4,800)	(4,800)	(5,520)	(5,520)	(5,520)	(5,520)	(5,520)
Telephone Internet & Fax	(500)	(500)	(500)	(500)	(500)	(500)	(500)	(500)	(500)	(500)
Audit Charges	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)
Insurance	(1,200)	(1,260)	(1,323)	(1,389)	(1,459)	(1,532)	(1,608)	(1,689)	(1,773)	(1,862)
Pre-Operating Expenses	(3,750)									
Total Expenses	(151,382)	(148,790)	(149,983)	(151,213)	(152,481)	(154,509)	(155,857)	(157,247)	(158,681)	(160,160)
PBIT/PBT										
PBIT	65,550	156,242	242,984	329,516	415,830	501,193	492,129	482,812	473,228	463,364
Finance Interest Main Loan	(40,503)	(32,402)	(24,302)	(16,201)	(8,101)	-	-	-	-	-
Finance Interest O/Draft W.Capital	(7,988)	(6,391)	(4,793)	(3,195)	(1,598)	-	-	-	-	-
PBT	17,059	123,840	218,682	313,315	407,729	501,193	492,129	482,812	473,228	463,364
Income Tax @ 15%	(2,559)	(18,576)	(32,802)	(46,997)	(61,159)	(75,179)	(73,819)	(72,422)	(70,984)	(69,505)
PAT	14,500	105,264	185,880	266,318	346,570	426,014	418,310	410,390	402,244	393,859

The projections reveal the project will incur a net profit of 14,500 /RO in the first year of operation mainly due to the lower capacity utilisation of 40% and the initial fixed cost of 155,030 /RO covering direct expenses. The profitability is improved in the 2nd year of operation mainly due to the increase in capacities to 50% resulting in a net profit of 105,264 /RO and net profit is predicted to increase in region of 185,000/RO in the 3rd year with a revenue of more than 1.6 million RO. In the 6th year and onwards the net profit will average in the region of 400,000 RO per year.

4.4. Capacity Utilization

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Capacity Level %	40%	50%	60%	70%	80%	90%	90%	90%	90%	90%
Material Supply Qty Tons	38,400	48,000	57,600	67,200	76,800	86,400	86,400	86,400	86,400	86,400
Material Supply Qty Kg	38,400,000	48,000,000	57,600,000	67,200,000	76,800,000	86,400,000	86,400,000	86,400,000	86,400,000	86,400,000
a) Bags	20% of Production Capacity									
Production outout Kg	7,680,000	9,600,000	11,520,000	13,440,000	15,360,000	17,280,000	17,280,000	17,280,000	17,280,000	17,280,000
Total No. of Bags @ 50kg	153,600	192,000	230,400	268,800	307,200	345,600	345,600	345,600	345,600	345,600
Revenue OMR	307,200	384,000	460,800	537,600	614,400	691,200	691,200	691,200	691,200	691,200
b) Bulk	80% of Production Capacity									
Production Outout Kg	30,720,000	38,400,000	46,080,000	53,760,000	61,440,000	69,120,000	69,120,000	69,120,000	69,120,000	69,120,000
Total No. Bulk Bags @ 1Ton	30,720	38,400	46,080	53,760	61,440	69,120	69,120	69,120	69,120	69,120
Revenue OMR	768,000	960,000	1,152,000	1,344,000	1,536,000	1,728,000	1,728,000	1,728,000	1,728,000	1,728,000
Grand Total Revenue OMR	**1,075,200**	**1,344,000**	**1,612,800**	**1,881,600**	**2,150,400**	**2,419,200**	**2,419,200**	**2,419,200**	**2,419,200**	**2,419,200**

The capacity utilisation will start with 40% in year of operation and is forecasted to increase gradually by 10% y-o-, 1st year output amounts to 38,400 tons and reaching a capacity of 90% at 86,400 tons in the 6th year of operation.

The 50kg bags account for 20% of the total production output target mainly for the local market; this production output in year 1 will amount to 7,680 tons with a produce of 153,600 bags and due to capacity increase no of bags reaches 345,600 bags in year 7.

The Bulk (per ton) account for 80% of the total production output target mainly for the local construction companies; this production output in year 1 will amount to 30,720 tons and due to capacity increase reaches 69,120 tons in year 6.

4.5. Cash Flow

Particulars	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Operating Activity											
Profit Before Tax PBT		17,059	123,840	218,682	313,315	407,729	501,193	492,129	482,812	473,228	463,364

Depreciation		98,962	98,962	98,962	98,962	98,962	98,962	98,962	98,962	98,962	98,962
Interest on Loan ODB		40,503	32,402	24,302	16,201	8,101	-	-	-	-	-
W. Capital Interest O/draft		7,988	6,391	4,793	3,195	1,598	-	-	-	-	-
Cash Flow Operating Activity	0	164,512	261,595	346,739	431,674	516,390	600,155	591,092	581,774	572,191	562,326
Investing Activity											
Purchasing of Fixed Assets	(964,350)	-	-	-	(900)	-	(99,000)	(2,700)	-	-	-
Working Capital & Pre-op	(163,519)										
Finance Activity											
Owners Contribution	385,740										
Pre-Op Owner Contribution	3,750										
Debt Loan	578,610										
Working Capital Overdraft	159,769										
ODB Loan Payment											
Loan Payment		(115,722)	(115,722)	(115,722)	(115,722)	(115,722)	-	-	-	-	-
Interest		(40,503)	(32,402)	(24,302)	(16,201)	(8,101)	-	-	-	-	-
Commercial Loan WC											
Loan Payment		(31,954)	(31,954)	(31,954)	(31,954)	(31,954)	-	-	-	-	-
Interest		(7,988)	(6,391)	(4,793)	(3,195)	(1,598)	-	-	-	-	-
Tax paid		-	(2,559)	(18,576)	(32,802)	(46,997)	(61,159)	(75,179)	(73,819)	(72,422)	(70,984)
Sub Total	**1,127,869**	**(196,167)**	**(189,028)**	**(195,346)**	**(199,875)**	**(204,371)**	**(61,159)**	**(75,179)**	**(73,819)**	**(72,422)**	**(70,984)**
Net Cash Flow	163,519	(31,655)	72,567	151,393	230,900	312,018	439,996	513,213	507,955	499,769	491,342
Open Cash equivelants	-	163,519	131,864	204,432	355,825	586,724	898,742	1,338,738	1,851,951	2,359,906	2,859,675
Closing Cash Equivelants	163,519	131,864	204,432	355,825	586,724	898,742	1,338,738	1,851,951	2,359,906	2,859,675	3,351,017

The cash flow is positive at 163,519 /RO in year 1 and is positive in the following years.

4.6. Balance Sheet

Particulars	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Current Assets											
Cash & Cash Equivalants	163,519	131,864	204,432	355,825	586,724	898,742	1,338,738	1,851,951	2,359,906	2,859,675	3,351,017
Working capital		-	-	-	-	-	-	-	-	-	-
Sub Total	**163,519**	**131,864**	**204,432**	**355,825**	**586,724**	**898,742**	**1,338,738**	**1,851,951**	**2,359,906**	**2,859,675**	**3,351,017**
Non-Current Assets											

Fixed Assets	964,350	865,388	766,425	667,463	569,400	470,438	470,475	374,213	275,251	176,288	77,326
Sub Total	**964,350**	**865,388**	**766,425**	**667,463**	**569,400**	**470,438**	**470,475**	**374,213**	**275,251**	**176,288**	**77,326**
Total Assets	**1,127,869**	**997,252**	**970,857**	**1,023,287**	**1,156,124**	**1,369,180**	**1,809,214**	**2,226,164**	**2,635,157**	**3,035,963**	**3,428,343**
Liabilities											
Current liabilities											
Loan (Short Term) ODB	578,610	115,722	115,722	115,722	115,722				-	-	-
Loan Short Term WC ODB	159,769	31,954	31,954	31,954	31,954			-	-	-	-
Provision for taxation		2,559	18,576	32,802	46,997	61,159	75,179	73,819	72,422	70,984	69,505
Total current liabilities	**738,379**	**150,235**	**166,252**	**180,478**	**194,673**	**61,159**	**75,179**	**73,819**	**72,422**	**70,984**	**69,505**
Loan Long Term ODB		347,166	231,444	115,722	-	-	-	-	-	-	-
Long term ODB w.c.loan		95,861	63,908	31,954	-	-	-	-	-	-	-
Total current liabilities	-	**443,027**	**295,352**	**147,676**	-	-	-	-	-	-	-
Shareholders											
Shareholders Capital	389,490	389,490	389,490	389,490	389,490	389,490	389,490	389,490	389,490	389,490	389,490
Legal Reserve											
Profit & Loss Account		14,500	119,764	305,643	571,961	918,531	1,344,545	1,762,855	2,173,245	2,575,489	2,969,348
Total equity	**389,490**	**403,990**	**509,254**	**695,133**	**961,451**	**1,308,021**	**1,734,035**	**2,152,345**	**2,562,735**	**2,964,979**	**3,358,838**
Total Liabilities	1,127,869	997,252	970,857	1,023,287	1,156,124	1,369,180	1,809,214	2,226,164	2,635,157	3,035,963	3,428,343

4.7. Payback Period

Appraisal on Equity Investment											
Particulars	**Investment**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Yearly Cash flow (OMR '000)	(385,740)	(31,655)	72,567	151,393	230,900	312,018	439,996	513,213	507,955	499,769	491,342
IRR	39.01%										
NPV @ WACC	1,240,758										
Pay Back period	4	Years	-1	Months							

Appraisal on Total Investment											
Particulars	Investment	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Yearly Cash flow (OMR '000)	(1,127,869)	124,570	220,692	291,416	362,823	435,841	439,996	513,213	507,955	499,769	491,342
IRR	24.58%										

NPV @ WACC	1,032,639										
Pay Back period	4	Years	4	Months							

Cost		
Owners' Equity	15.00%	40.00
Finance	7.00%	60.00
Total		100.00
Weighted Average Cost	10.20%	

The IRR on total investment is resulting in 24.58%,

NPV results in 1,032,639 /RO

Payback period is 4 years and 4 months.

4.8. Depreciation

Si.No	Particulars	Amount	Years	Percentage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1a	Plant	630,000	10.0	10%	63,000	63,000	63,000	63,000	63,000	63,000	63,000	63,000	63,000	63,000
1b	Building	231,750	15.0	7%	15,458	15,458	15,458	15,458	15,458	15,458	15,458	15,458	15,458	15,458
1c	Vehicles	99,000	5	20%	19,800	19,800	19,800	19,800	19,800	19,800	19,800	19,800	19,800	19,800
1d	Computers	900	3.00	33%	300	300	300	300	300	300	300	300	300	300
1e	Office Furniture & Equipment	2,700	6.67	15%	405	405	405	405	405	405	405	405	405	405
	Total	964,350	Total Depreciation		98,962	98,962	98,962	98,962	98,962	98,962	98,962	98,962	98,962	98,962
	Accumulated depreciation				98,962	197,925	296,887	395,850	494,812	593,775	692,737	791,699	890,662	989,624
	Net book value				865,388	766,425	667,463	569,400	470,438	470,475	374,213	275,251	176,288	77,326

4.9. Raw Material Cost

The raw material cost is distributed between limestones at 64% of total cost followed by cement accounting for 35% of cost and remaining 1.5% is due to the cost of sand & hydrated lime at 10% of total raw material cost.

NPV results in 1,129,686 /RO.

Cost per Ton OMR													
Si. No	Description	Distribution %	Cost per Ton	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Limestone	80%	12.00	368,640	460,800	552,960	645,120	737,280	829,440	829,440	829,440	829,440	829,440
2	Cement	13%	40.00	199,680	249,600	299,520	349,440	399,360	449,280	449,280	449,280	449,280	449,280
3	Dune Sand	4.50%	5.20	8,986	11,232	13,478	15,725	17,971	20,218	20,218	20,218	20,218	20,218
	Hydrated Lime	2.50%	60.00	57,600	72,000	86,400	100,800	115,200	129,600	129,600	129,600	129,600	129,600
		100%	117.20	577,306	721,632	865,958	1,010,285	1,154,611	1,298,938	1,298,938	1,298,938	1,298,938	1,298,938

Raw Material	%
Limestone	80%
Cement	13%
Dune Sand	4.50%
hydrated lime	2.50%

4.10. Pre-Operating Expenses

Si.No	Particulars	Amount
1a	Financial Feasibility Study	2,500.00
1b	Travel Expenses	500.00
1c	Misc Expenses	250.00
1d	Consultancy HSE	500.00
Total		3,750.00

4.11. Working Capital

The working capital for the initial start of the project is mainly for the raw material for a period of 3 months amounting to 78,495 RO and salaries at 2 months amounting to 4,255 RO

Working capital is obtained as an overdraft facility from the banks at the interest rate of 5% over a period of 5 years.

Si.No	Particulars	Months	Amount
1a	Raw material	3	144,326.40
1b	Direct Manpower	3	9,142.50
1d	Utilities	2	4,800.00
1e	Fuel Diesel	2	1,500.00
Total			159,768.90

Working Capital Loan

Sl.No	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
1a	Loan Opening Balance	159,769	127,815	95,861	63,908	31,954
1b	Interest @ 5%	7,988	6,391	4,793	3,195	1,598
1c	Installments	31,954	31,954	31,954	31,954	31,954
1d	Closing Balance	127,815	95,861	63,908	31,954	-

4.12. Source of Finance

Source of finance consists of 40% contribution by owners and remainder 60% is obtained by a loan facility from bank at the interest rate of 7%

Sl.No.	Particular	Percentage	Amount
1a	Owner Contribution	40%	385,740.00
1b	Loan	60%	578,610.00
Total		100%	964,350.00

4.13. Loan Schedule

Si.No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
1a	loan Opening Balance	578,610	462,888	347,166	231,444	115,722
1b	Interest @ 7%	40,503	32,402	24,302	16,201	8,101
1c	Installments	115,722	115,722	115,722	115,722	115,722

1d	Closing Balance	462,888	347,166	231,444	115,722	-

4.14. Utility Costs

Description	Cost Per Unit USD	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Electricity Per Kw	0.016	24,000	26,400	28,800	31,200	33,600	36,000	38,400	40,800	43,200	45,600
Water Cost per M3	0.003	4,800	5,280	5,808	6,389	7,028	7,730	8,503	9,354	10,289	11,318
Total Utility Cost		28,800	31,680	34,608	37,589	40,628	43,730	46,903	50,154	53,489	56,918

Rate Industrial Estate		
Type	Unit	Omani Riyal/Bz
Electricity	KW/hour	0.016
Water	Gallon	0.003

Soap Plant Demand p/hour	Unit	P/Hour Unit Usage	P/Hour Cost
Electricity	KW/hour	500	8.00
Water	M3	5	0.00

4.15. Rental Lease

Si. No	Description Lease/Rental Premises	Size sq./m	Cost per Month	Cost per Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1a	Land	1000	400	4,800	4,800	4,800	4,800	4,800	4,800	5,520	5,520	5,520	5,520	5,520

Capacity & Selling Price

Installed Capacity Per Hour Tons	No of Hrs/Per Shift	No of Shifts Per Day	Working Day's Per Month	Working Months Per Year	Total Raw Material Per Year Tons	Total Production Per Year kg
20	8	2	25	12	96,000	96,000,000

Products	Product Name	Size kg	Grade	Percentage of Grade Distribution	Selling Price OMR

A	Bags	50	Standard	20%	2.000
B	Bulk	1000	Standard	80%	25.000
Total Percentage Distribution				100%	

Fuel Transportation Cost

Transportation Salalah					
Trailer No.	Description	No of Vehicles	No of Days per Year	Transportation Fuel Cost per day OMR	Cost Per Year
1	Pick Up Trucks	1	300	10	3,000
2	3 Ton	1	300	20	6,000
Total					9,000

4.16. Conclusion

- The production capacity in the 1st year is 40% and increases to a capacity of 50% in the 2nd year, thereafter the capacity utilization increases 10% y-o-y to reach 90% capacity utilization in the 6th year; these capacity utilizations results in the following revenues:
- 1st year revenue amounts to **1.0 million OMR**
- 2st year revenue amounts to **1.3 million OMR**
- 3rd year revenue amounts to a total of **1.6 Million OMR**

  Reaching **2.4 Million OMR** in the 10th year.

The above revenue stream reveals the following net profit results:

- The 1st year net loss of **14,500 OMR.**
- 2nd year net-profit amounts to **105,264OMR.**
- 3rd year net-profit amounts to **185,880 OMR.**
- 4th year net-profit amounts to **266,318 OMR.**
- 5th year net profit will be in region of **346,570 OMR.**
- 6th year net profit will be in region of **426,014 OMR**

Internal Rate of Return (IRR) =**24.58 %.**
NPV = **1.0 million OMR.**
Pay Back Period = **4 years 4 month.**

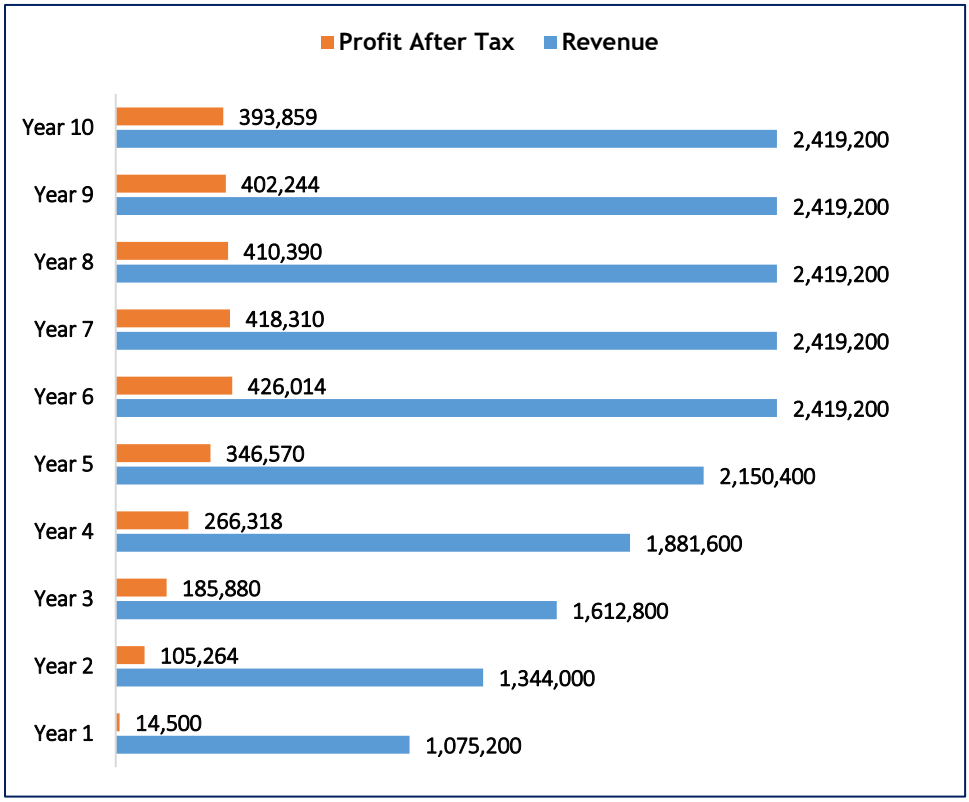


Figure 4-1: Projections Main Scenario - Revenue & Profit After Tax

Financial Analysis Schedule Summary											IRR	NPV	Payback Period
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	24.58%	1,1,032,639,686	4Years & 4 Month
Capacity	40%	50%	60%	70%	80%	90%	90%	90%	90%	90%			
Revenue	1,075,200	1,344,000	1,612,800	1,881,600	2,150,400	2,419,200	2,419,200	2,419,200	2,419,200	2,419,200			
Profit After Tax	14,500	105,264	185,880	266,318	346,570	426,014	418,310	410,390	402,244	393,859			

- The project has a medium to high viability due to mainly the raw material availability in Oman.
- Dry mix has a good product range and is essential in the construction of buildings and in terms of the demand quantity locally and regionally
- New products can be developed and introduced in the market providing construction companies with not only ease of application and efficiency in construction processes but scope in environmental and sustainable products.
- Technology for this type of product in terms of application and ingredients to include chemicals is continually developing allows for innovative dry mix products to be researched & introduced.
- The local competition is minimal and provides an opportunity for this new entrant to establish themselves.
- The output in terms of capacity is estimated at the low side at 40% in year 1 along with selling price of 25/RO per ton instead of the market rate of 30 /RO per ton.
- The net profit is positive in year 1 at 1.35% & increases at relatively good levels as it reaches 7.8% in year 2, 11.5% in year 3, 14.5% in year 4 and reaches a maximum of 17.6% net profit in year 6.
- IRR is attractive at 24.58% and payback is acceptable at 4 years and 4 months.