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&

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SULTANATE OF OMAN

JUNE 2021

PRE-FEASIBILITY REPORT (DRAFT)

FOR

SETTING UP A

EXPANDED POLYSTYRENE (EPS) BOXES AND SHEETS MANUFACTURING UNIT IN OMAN

CONTENTS

1.0 INTRODUCTION

1.1. PROJECT BRIEF

This report relates to Pre-feasibility assessment of setting up manufacturing plant for EPS boxes and sheets in Oman.

The following is the brief illustration of the project:

Name of Product		Expanded Polystyrene Boxes and Sheets
Domestic Market Potential (as of 2019)		EPS Sheets: 1,447 Tons EPS Boxes: 2,100 Tons
Export Potential (as of 2019)		Not considered for this project
Capacity of the Project		EPS Sheets: 200 Tons EPS Boxes: 750 Tons
Total Investment		RO 1,111,000
Equity Investment		RO 444,000 (40% of the total project cost)
Key Appraisal Criteria:		
IRR on total investment		14.29%
IRR on Equity		22.32%
Payback period of Total Investment		6 years 11 months
Payback period on equity		5 years 10 months
Break Even Point (as % of Capacity)		70.7%
Cash Break Even Point (as % of Capacity)		62.1%
Debt Equity Ratio		1.5 : 1
DSCR		2.36
Manpower	Total	31
	Nationals	11

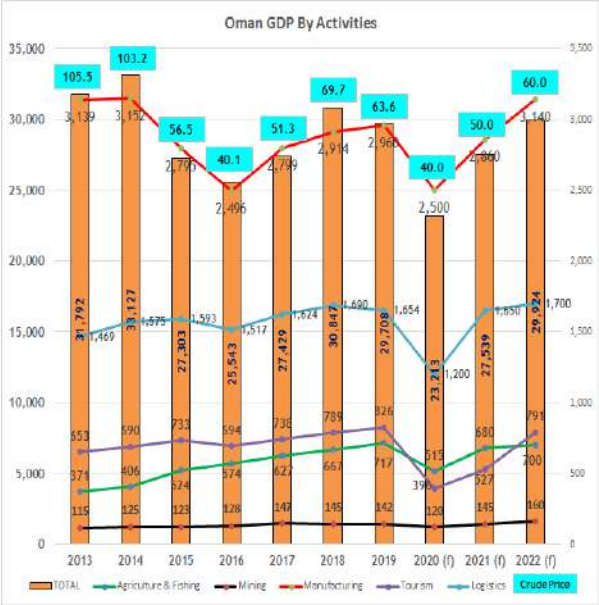
1.2. PROJECT RATIONALE

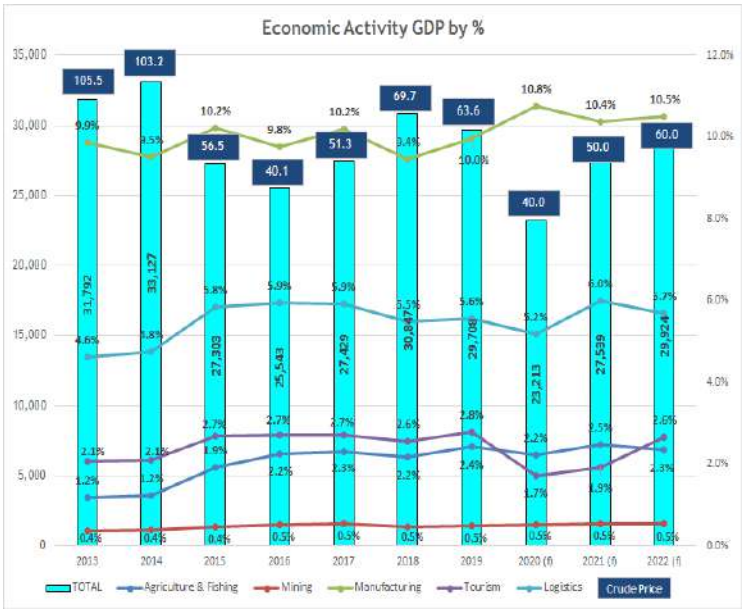
- Growing demand in the packaging of fresh food industry including fish and fish parts.
- There is a growing demand for cold chain packaging solutions in the pharmaceutical sector.
- Growth in the construction segment will affect the EPS demand.
- Extensive requirements for EPS in automotive segment for ensuring vehicles to be lightweight, inline safe for passengers, as well as reducing weight and making fuel efficient.

2.0 INDUSTRY ANALYSIS

2.1. MACROECONOMIC CONDITIONS

The recently published statistical bulletin from National Centre for Statistics and Information (NCSI) indicates that the GDP at market prices reduced by 15% during Year 2020 when compared to the Year 2019. This is mainly due to the dual impact of slump in oil prices and the COVID – 19 pandemic. As per the World Bank outlook a revival is expected in 2021 and in 2022 on an average of around 4%. The estimated GDP of Oman considering the past trend, current situation and the expected recovery is illustrated below:

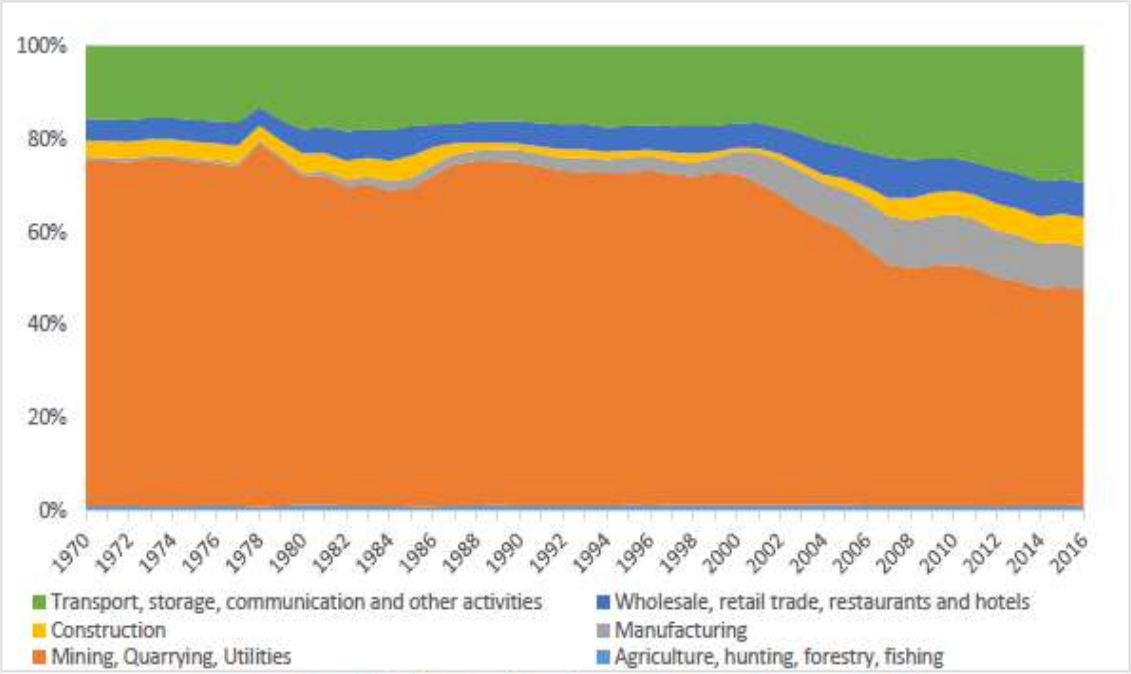




The average price of Oil for 2020 is USD 46/Barrel. We expect this to go up to USD 50/barrel in 2021 and USD 60/barrel in 2022.

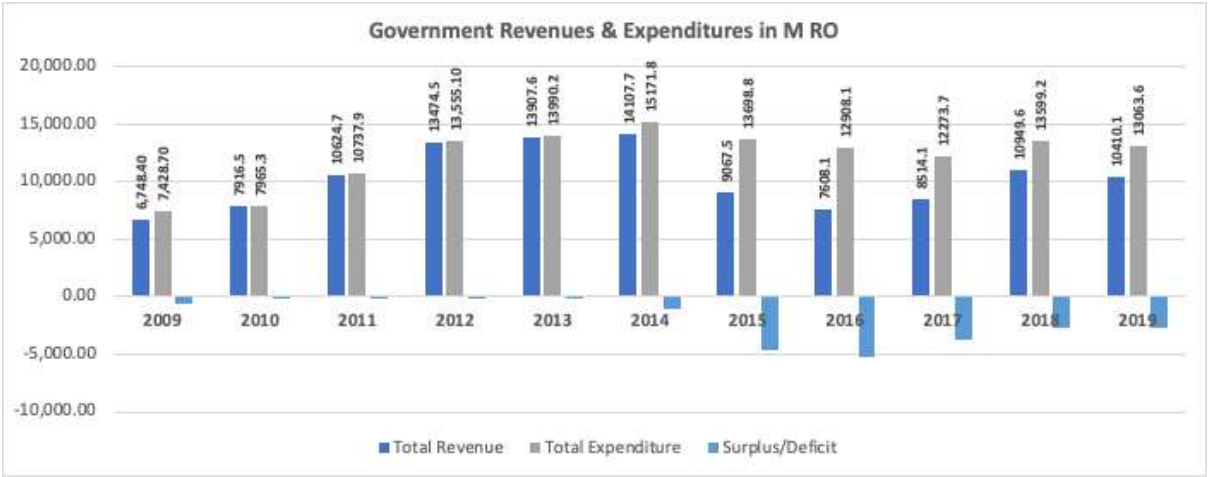
2.2. TREND IN ECONOMIC DIVERSIFICATION

Since the beginning of the millennium our economic activity has significantly moved away from oil as indicated below. The following graph gives data up to 2016. In 2019 Crude Petroleum contributed to 29.11% of GDP.



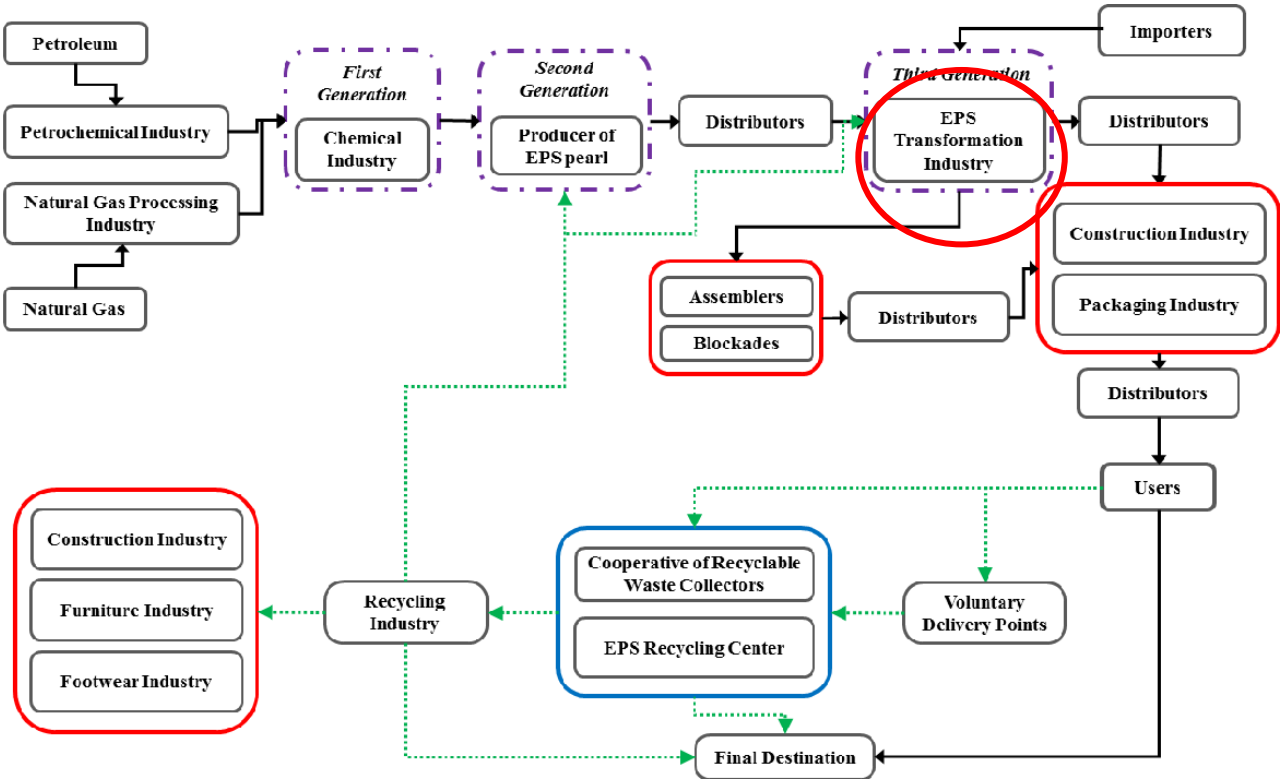
Source: UNIDO elaboration based on UN Statistics Division (2018)

However the Government income is still substantially dependent on Oil sector. The tightening of spending, introduction of VAT and increased revenues from Gas are expected to contain deficits to manageable levels by 2022.



2.3. VALUE CHAIN

A detailed value chain of the product is illustrated in the following chart.



The upstream projects includes the petrochemical industry, chemical industry, EPS pearl manufacturing plants, that supply to the EPS sheets and boxes making factories.

The downstream projects include various consumer goods manufacturing units including construction, automotive, furniture, footwear, recycling plants, etc.

2.4. REGIONAL (GCC) VALUE CHAIN

Styrene monomer and the following products in the value chain are produced in UAE as well as in Saudi Arabia. Iran, outside GCC, is another major supplier of these products. The EPS transformation or conversion factories are available in GCC.

2.5. VALUE CHAIN IN OMAN

In Oman the upstream products are not manufactured. The manufacturers import the raw material (polystyrene). However, the end use applications / product acceptance is on the rise in Oman resulting in increased demand. Being a product used in the construction sector, the product is being procured by the contractors, directly from the manufacturers.

2.6. MISSING VALUE CHAIN ACTIVITIES IN OMAN

As indicated above, the upstream value chain projects i.e., manufacture of EPS in primary forms are not available in Oman.

3.0 MARKET ANALYSIS

3.1. PRODUCT & ITS USES

The proposed project profile is to manufacture Epoxy Polystyrene products, also referred as Expanded Polystyrene (EPS) or commonly known as Thermocol. The products for this project will be EPS Boxes and Sheets.

3.1.1. Product Description

Expanded polystyrene (EPS) is a thermoplastic material and is commonly known as Styrofoam or thermocol. It is a rigid cellular plastic, which is found in a multitude of shapes and applications. It is usually white and made of pre-expanded polystyrene beads.

Manufacturers rely on EPS packaging because of its ability to prevent or minimize product damage during transit and its excellent insulation properties that make them preferred packing materials for food and medical shipments.

3.1.2. Products –Use

The proposed products to be manufactured are EPS Boxes for Packaging and EPS Sheets for Insulation & Constructions.

- ***Packing & Packaging***: EPS has shock absorbing properties making it ideal for storing and transporting fragile items such as wines, chemicals, electronic equipment, and pharmaceutical products. Its thermal insulation and moisture resistant properties are perfect for packaging cooked food as well as perishable items such as seafood, fruit, and vegetables. EPS packaging achieves significant transport savings compared to other packaging materials due to its light weight, resulting in lower fuel consumption. Its exceptional cushioning and thermal properties result in lower damage rates and maintain a secure cold chain for temperature sensitive products. The boxes are of different standard sizes (with storage capacity of 2kg to 25kg).

- ***Insulation & Construction:*** EPS is durable, strong as well as lightweight and can be used as insulated panel systems for facades, walls, roofs and floors in buildings, as flotation material in the construction of marinas and pontoons and as a lightweight fill in road and railway construction. EPS is one of the lightest of all construction materials allowing ease of handling and faster construction times. Its outstanding thermal insulation properties and durability ensure performance throughout the full life time of the building/construction application in which it is used. EPS is mostly used in wall insulation, Exterior wall insulation and ceiling heat prevention. The average standard sheet size is (0.5X0.5X0.02 m) at a density of 30 Kg/meter cube. Non-standard sheet sizes are available based on the end-user requirements.
- ***Other applications:*** EPS can be used in the manufacture of sliders, model planes, and even surfboards because of its positive strength to weight ratio. The strength of EPS along with its shock absorbing properties makes it effective for use in children's seats and cycling helmets. It is also compression resistant, meaning that EPS is ideal for stacking packaging goods. EPS also has applications in horticulture in seedling trays to promote aeration of the soil.

3.1.3. Product specification

- **EPS Sheets:** The optimum performance characteristics of EPS insulation sheets are not affected by changes between 17^0C and 43^0C temperature. The popular size and specification is:
  - Thickness: flexible from 10 mm- 1250 mm
  - Density (10-40 Kgs/m3)

- **EPS Boxes:**
  - The capacity of the fish boxes (available in local market) is 3kg to 60kg. The more popular ones are 5kg, 10kg, 15kg and 20kg boxes. It may be noted the above weight is the weight of fish packed and the actual packing capacity includes the weight of ice also.
  - The boxes to pack vegetable and fruits come in capacities of 2kg, 3kg, 5 kg & 10 kg.

3.1.4. Properties of EPS

The following properties make EPS a perfect packaging material:

- Shock absorption
- Light weight
- Resistance to humidity
- Hygienic nature
- Thermal insulation
- Compressive resistance
- Chemical resistance
- Ease of use

3.2. INDUSTRY OVERVIEW

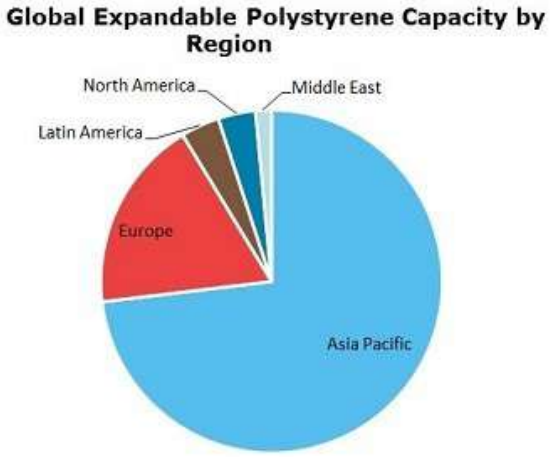
According to online market research reports, the global expanded polystyrene market is valued at $9.3 billion in 2019 and is projected to reach $22.8 billion by 2027.

Asia-Pacific was the highest revenue contributor in 2018. Asia-Pacific has risen as the central region and maker of EPS due to expanding interest from household front. Rapid rise of the packaging industry in emerging markets including Brazil, China, and India, as a result of increasing manufacturing output on a domestic level is expected to drive the growth.

Packaging dominated the EPS market, with a 39.00% volume share in 2019. Rising government spending on the development of FMCG and electronic equipment manufacturing sectors in emerging markets including China and India is expected to have a positive impact on the growth in the forthcoming years.

3.3. MAJOR PRODUCERS & CONSUMERS

APAC/Asia Pacific has emerged as the leading consumer and producer of EPS due to the increasing demand from the domestic front and rising income levels. APAC is followed by Europe, North America, Middle East & Africa and South America in terms of major producing countries.



3.4. KEY PLAYERS

The expanded polystyrene market is fragmented with different manufacturers namely Alpek, S.A.B. de C.V., Arkema S.A., BASF SE, Evonik Industries AG, Kaneka Corporation, LG Corporation (LG Corp), NOVA Chemical Corporation, SABIC, Styrochem, and TOTAL S.A.

Among these, BASF SE, Evonik Industries AG, Kaneka Corporation, LG Corporation (LG Corp), and NOVA Chemical Corporation occupy the highest market share in the expanded polystyrene market based on their focused strategies toward the market.

The market dominance of these companies is characterized by their vast product portfolio and high investment in R&D activities for expanded polystyrene, revenue, capital expenditure, employee strength, and geographical presence of companies.

3.5. DEMAND ANALYSIS – OMAN

3.5.1. Local Production

As there is no local production **of EPS polymer**, the entire requirement of EPS polymer, for the production of EPS products needs to be imported.

In other words, the import of EPS polymer is an indication of the local production of EPS products in Oman. Import of products under HS code 39031100: EPS in Primary form, for the last 5 years is illustrated below:

Details	2015	2016	2017	2018	2019
	Quantity in Tons				
Imports	4,150	2,244	1,520	1,554	1,560
Exports	194	61	82	3	26
Net Imports	3,956	2,183	1,438	1,551	1,534

The imports have substantially reduced over the years mainly due to the fall in the demand for EPS sheets from construction industry since 2016.

Therefore, it could be concluded that the total production of EPS boxes (including fish boxes and vegetable and fruit boxes) and EPS Sheets by local manufacturers (Oman) is around 2,200 tons (average of last 5 years).

3.5.2. Foreign Trade of EPS Products

3.5.2.1. HS Codes considered

HS codes considered are:

HS Code	Products
39031100	Expansible polystyrene, in primary forms into Oman.
39231090	Boxes, cases, crates & similar articles, of plastics for the conveyance or packing of goods, excluding those used for transportations of poultry or dairy products.

39211100	Plates, sheets, film, foil and strip, of cellular polymers of styrene, un-worked or merely surface-worked or merely cut into squares or rectangles

The analysis considers the imports through HS code 39231090 and 39211100 for the purpose of assessing the demand for EPS products (boxes & sheets), while analysis of imports of HS code 39031100 provides an idea of the import of EPS raw materials (for production of EPS products by local manufacturers).

3.5.2.2. HS Code 39231090 (Boxes, cases, crates & similar articles, of plastics)

- **Imports**

Imports of products under HS code 39231090 for the last 3 years are illustrated below. It may be noted that based on the discussions with the industry experts, 30% of the imports (by weight) is considered as the import of EPS boxes:

Details	2017	2018	2019
	Quantity in Tons		
Total Imports	3,114	2,860	3,230
Estimated import of EPS boxes (30% of the above)	**934**	**858**	**969**

- **Import Sources**

Import countries	% of the total
United Arab Emirates	45%
China	10%
Spain	10%
India	5%

(Top 5 importing countries in the last 3 years)

3.5.2.3. HS Code 39211100 (Plates, sheets, etc, of cellular polymers of styrene)

- **Imports**

Imports of products under HS code 39211100 for the last 3 years are considered to derive at the total consumption of EPS sheets in Oman:

Details	2017	2018	2019
	Quantity in Tons		
Imports	837	858	840

- **Import Sources**

Import countries	% of the total
United Arab Emirates	45%
China	40%
Others	15%

(Top 5 importing countries in the last 3 years)

3.5.3. Demand Estimates – EPS Boxes

- Estimated use of EPS in raw form to manufacture EPS boxes is 30% of total. Hence the same is estimated as local production of EPS boxes in Oman.

The demand estimates for the previous three years, estimated on the above lines, is illustrated in the table below:

Details	(All figures in tons)		
	2017	2018	2019
Import Polymers of styrene, in primary forms	1,438	1,551	1,534
EPS in primary form imported for manufacture of EPS boxes (30% of the above)	431	465	460
Local Production of EPS boxes	**431**	**465**	**460**
Import of Articles for the conveyance or packing of goods, of plastics, Boxes, cases, crates and similar articles	3,114	2,860	3,230
Estimated import of EPS boxes (30% of the above)	934	858	969
Total EPS box consumption	**1,366**	**1,323**	**1,429**

(Source: Foreign Trade Statistics – ROP Data 2019)

3.6. EPS BOXES - DEMAND SEGMENTATION

EPS boxes are primarily used in Oman, for packaging fish (fresh fish exports) as well as for fruits & vegetables (re-packing for retail sale). The following sections provide the detailed illustration of the segmentation of the above consumption of 1,400 tons of EPS boxes for the above two end use.

3.6.1. Demand for Vegetable & Fruit boxes

The demand for the vegetable and fruit boxes has been calculated based on:

- Identification of vegetables that are being re-packed in EPS boxes for retail sale
- Their local consumption (Imports & Local production)
- % of these vegetables and fruits that are packed in EPS boxes and hence the weight of vegetables re-packed in EPS boxes
- Establishing the box sizes, consumption and the weighted average weigh of EPS box required to pack 1 kg of the end product.
- Estimation of EPS box consumption in tons

3.6.1.1. Estimated weight of Vegetables packed in EPS Boxes

The detailed calculation of the estimated quantity of vegetables packed in EPS boxes is illustrated in the following table:

Detail	2016			2018			% re- packed in EPS boxes	Weight of vegetables packed in EPS boxes	
	Production	Imports	Total consumption	Production	Imports	Total consumption		2016	2018
Vegetables:									
Tomatoes	111,070	31,527	142,597	199,232	37,824	237,056	3%	4,278	7,112
Cucumbers	46,520	202	46,722	73,267	374	73,641	3%	1,402	2,209
Potatoes	13,230	80,331	93,561	15,613	99,729	115,342	3%	2,807	3,460
Pepper	11,010	1,000	12,010	64,663		64,663	3%	360	1,940
Eggplant	9,950	177	10,127	32,214		32,214	2%	203	644
Okra	6,420		6,420	16,675	37	16,712	2%	128	334
Carrots	3,080	8,076	11,156	18,109	9,635	27,744	10%	1,116	2,774
Sub-Total	**201,280**	**121,314**	**322,594**	**419,773**	**147,599**	**567,372**		**10,293**	**18,474**
Fruits:									
Dates	370,370		370,370	368,808		368,808	0.3%	926	1,106
Lemon	6,200		6,200	7,112		7,112	2%	124	142
Banana	16,580		16,580	18,265		18,265	5%	829	913
Sub-Total	**393,150**		**393,150**	**394,185**		**394,185**		**1,879**	**2,162**
Grand Total								**12,172**	**20,636**

As illustrated above, the weight of vegetables packed in EPS boxes is estimated to about 12,000 tons in 2016 and about 20,000 tons in 2018. For the study we consider a conservative demand of 12,000 tons.

3.6.1.2. Estimated Weight of EPS box per Kg. of Vegetable packed

The following table illustrates the estimation of the weight of the EPS box required to pack one kg of vegetable:

Weight of Vegetable packed	% of Consumption	EPS box weight (Kg)		
		Absolute weight per piece	Weight per kg. of vegetable packed	Weighted average weight
2	90%	0.025	0.013	0.0113
3	7%	0.055	0.018	0.0013
5	3%	0.100	0.020	0.0006
Weighted average weight / kg of vegetable packed				0.0131
Weighted average weight / ton of vegetable packed				13.13

As illustrated above, for repacking one ton of vegetable, we will need EPS boxes weighing about 13 kg.

3.6.1.3. Estimated EPS Box consumption for vegetables

The following table illustrates the EPS box consumption in Oman:

Detail	Tons
Total weight of vegetables and fruits packed in EPS boxes (tons)	12,172
Total weight of EPS boxes required (@ 13.13 Kg. of EPS boxes per ton of vegetables packed) (tons)	927

As illustrated above, the consumption of EPS boxes for packing vegetables and fruits is estimated at about 900 tons.

3.6.2. Demand for Fish Boxes

EPS boxes are used for packing fresh fish export. The following sections provide further details of estimating the demand for EPS boxes for packing fresh fish for exports.

- Estimated export of fresh fish
- Export destinations and the propensity to pack in EPS boxes
- Establishing the box sizes, consumption and the weighted average weigh of EPS box required to pack 1 kg of fish.
- Estimation of EPS box consumption in tons

3.6.2.1. Estimation of Fresh Fish Exports in EPS boxes

The following table illustrates the trend in fresh fish exports to different destinations. As illustrated 50% of the exports to GCC countries are in bulk containers and the rest is by using EPS boxes:

Detail		**2016**	**2017**	**2018**
		Fish Exports (Tons)		
GCC countries		62,215	68,680	85,334
Europe		424	563	2,803
America		78	17,010	20,217
Others		1,002	7,778	144,180
Total		**63,719**	**94,000**	**253,000**
	% packed in EPS boxes	**Quantity packed in EPS boxes (tons)**		
GCC countries	50%	31,108	34,340	42,667
Europe	100%	424	563	2,803
America	100%	78	17,010	20,217
Others	100%	1,002	7,778	144,180
Total		**32,612**	**59,691**	**209,867**

3.6.2.2. Estimated Weight of EPS box per ton of Fresh Fish packed for exports

The following estimate has been made based on detailed discussions with a fresh fish exporter for a typical export order to Europe:

Fish weight packed (Kg)	No. of boxes per order	Weight per box (Kg)	Weight of Box for the order (kg)	Total fish weight packed	EPS box weight / kg of fish
5	600	0.25	150	3,000	0.050
20	250	0.5	125	5,000	0.025
25	50	0.6	30	1,250	0.024
50	30	2.1	63	1,500	0.042
Total / Average	930		368	10,750	0.034
Weight of EPS box per kg of fish (Kg)					0.034
Weight of EPS box per ton of fish (Kg)					34.233

3.6.2.3. Estimated EPS Box consumption for Fresh Fish Exports

The following table illustrates the EPS box consumption in Oman for packing fresh fish for exports:

Detail	2017	2018	2019
Total weight of fresh fish packed in EPS boxes (tons)	32,612	59,691	209,867
Total weight of EPS boxes required (@ 34.23 Kg of EPS boxes per ton of fresh fish packed) (tons)	953	1,744	6,131

As the consumption for the EPS boxes is varied in last 3 years, the consultants after discussions with traders of fish and EPS boxes have concluded that the realistic consumption of the product is in the tune of 1,200 tons.

3.7. DEMAND PROJECTION – EPS BOXES

The expected demand for EPS boxes in Oman is expected to grow at about 3% which is in line with the growth in the fish landing / transportation by EPS boxes and the population growth (Omani nationals). This is true also during the 2020 Covid Pandemic situation as the product is used in the day to day food consumption. Details are illustrated below:

Type of EPS box	2019	Growth rate	2020	2021	2022	2023	2024	2025	2026
	Actual	%	Figures in tons						
Demand estimates for Fish box (Tons)	1,200	3%	1,236	1,273	1,311	1,351	1,391	1,433	1,476
Demand estimates for Vegetable & Fruits box (Tons)	900	3%	927	955	983	1,013	1,043	1,075	1,107
Total	**2,100**		**2,163**	**2,228**	**2,295**	**2,364**	**2,434**	**2,508**	**2,583**

3.8. DEMAND ESTIMATES – EPS SHEETS

Details	All figures in tons		
	2017	2018	2019
Import Polymers of styrene, in primary forms	1,438	1,551	1,534
EPS in primary form imported for manufacture of EPS Boxes (30% of the total)	431	465	460
EPS in primary form imported for manufacture of EPS Sheets (80% of the balance, ie: 2,183-1,630 for year 2016)	806	869	859
Local Production of EPS sheets	**806**	**869**	**859**
Total Import of Other plates, sheets, film, foil and strip, of polymers of styrene	837	858	840
Total import for producing EPS sheets (%)	70%	70%	70%
Total import for producing EPS Sheets	**586**	**601**	**588**
Total EPS Sheets consumption	**1,392**	**1,470**	**1,447**

3.9. DEMAND PROJECTIONS – EPS SHEETS

The following table provides the current demand and estimated future growth rates as the projected demand till 2026.

EPS Sheets	2020	2021	2022	2023	2024	2025	2026
Growth rate	Estimated						
	-5%	-5%	-5%	3%	3%	3%	3%
Demand estimates (Tons)	1,375	1,306	1,241	1,278	1,316	1,356	1,396

3.10. REGIONAL DEMAND ESTIMATES

Considering the fact that logistics costs would play a major role in the overall competitiveness of the unit, the target market is classified into primary and secondary markets.

- As per the primary survey, there is an EPS box and sheets factory coming up in Salalah, Dhofar region. Hence the proposed project can look at the Muscat & other markets. In these markets the unit can aspire for better realisations as well as higher market shares. These markets have been considered as primary market.
- Other potential markets, including Sharqiah and Dhakhilya are classified as secondary markets.

3.10.1. Fish Boxes

In Oman, EPS boxes are pre-dominantly used by the fishing industry for packing fresh fish for export.

- According to the primary survey, due to the proximity to the airport, most of the fresh fish exporters have their processing facility located in the Capital region.
- However, there are limited number of fresh fish exporters located in other parts of the country also.

- Hence the regional demand for EPS fish boxes has been eased on the overall volume of fresh fish exports from the various fish processing units in different locations in Oman

Following is the regional consumption percentage, estimated based on the above rationale:

- Primary Market:
  - Muscat (60 %).
  - As Sharqiyah (10 %)
- Secondary market
  - Dhofar (10 %)
  - Al Wusta (10 %)
- Others including Al Batinah (10%)

Based on the above segmentation, the demand for EPS Fish boxes in the various markets is illustrated in the table below.

Region	Segmented Demand	Fish Boxes – Projected Demand (Tons)						
		2020	2021	2022	2023	2024	2025	2026
Primary Market								
Muscat	60%	742	764	787	810	835	860	886
As Sharqiyah	10%	124	127	131	135	139	143	148
Demand in the primary market		865	891	918	945	974	1,003	1,033
Secondary market								
Dhofar	10%	124	127	131	135	139	143	148
Al Wusta	10%	124	127	131	135	139	143	148
Demand in the secondary market		247	255	262	270	278	287	295
Others	10%	124	127	131	135	139	143	148
Total	100%	**1,236**	**1,273**	**1,311**	**1,351**	**1,391**	**1,433**	**1,476**

3.10.2. EPS – Vegetables & Fruits boxes

While estimating the regional demand, the fact that EPS boxes are primarily used for re-packing into retail sales sizes (mostly 2 kg size), the maximum consumption is at the central vegetable market where the wholesalers do the re-packing of fruits and vegetables.

However, the practice of packing the produce in retails packs in EPS boxes is also prevalent in certain farms.

- Primary Market:
  - Muscat (50 %).
- Secondary market
  - Dhakhiyah (10 %)
  - Dhofar (15 %)
  - Batinah (15%)
  - Others (10%)

Considering the above the regional demand estimation is illustrated in the table below:

		Vegetable & Fruit Boxes – Projected Demand (Tons)						
Region	**Segmented Demand**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Muscat	50%	464	477	492	506	522	537	553
Demand in the primary market		**464**	**477**	**492**	**506**	**522**	**537**	**553**
Dhofar	15%	139	143	148	152	157	161	166
Batinah	15%	139	143	148	152	157	161	166
Dakhliyah	10%	93	95	98	101	104	107	111
Others	10%	93	95	98	101	104	107	111
Demand in secondary markets		**464**	**477**	**492**	**506**	**522**	**537**	**553**
Total	100%	**927**	**955**	**983**	**1,013**	**1,043**	**1,075**	**1,107**

3.10.3. EPS Sheets

The geographical demand for EPS sheets in Oman is segmented based on the building permits issued by the Government during the last three years and the share of each region in the total permits issued during the past three years. While the absolute share has been taken as the basis, the moderated share used for projections have been arrived at based on the nature of projects being executed / expected to be executed in the various regions.

Governorate	2016	2017	2018	Total 2016 to 2018	% of total	Moderated for Projection
Dhofar	1,494	743	1,910	4,147	4%	5%
Al Wusta	255	255	350	860	1%	3%
Ash Sharqiyah North	2,774	2,803	3,331	8,908	8%	15%
Ash Sharqiyah South	2,741	2,703	2,845	8,289	7%	
Muscat	11,025	10,594	9,153	30,772	27%	30%
Ad Dhakhliyah	4,967	4,387	4,289	13,643	12%	10%
Al Batinah North	6,285	6,110	6,944	19,339	17%	30%
Al Batinah South	4,940	5,537	5,435	15,912	14%	
Musandam	574	633	427	1,634	1%	7%
Al Buraymi	902	784	689	2,375	2%	
Adh Dhahirah	3,196	2,773	2,966	8,935	8%	
Total	**39,153**	**37322**	**38,339**	**114,814**	**100%**	100%

Following are the primary and secondary markets considered for EPS sheets

- Primary Market:
  - Muscat (30 %).
  - Dhakhiyah (10 %)
  - Sharqiah (15%)
- Secondary market
  - Dhofar (5 %)
  - Al Wusta (3%)
- Others
  - Batinah (30%)
  - Others (7%)

Based on the regional allocation of building permits which has been moderated and illustrated above, the regional demand for EPS sheets in the primary and secondary markets is provided in the table below.

Region	Segmented Demand	EPS sheets – Projected Demand (Tons)						
		2020	2021	2022	2023	2024	2025	2026
Muscat	30%	413	392	372	383	395	407	419
Dhakhilya	10%	138	131	124	128	132	136	140
Sharqiah	15%	206	196	186	192	197	203	209
Demand in the primary market		**756**	**718**	**683**	**703**	**724**	**746**	**768**
Dhofar	5%	69	65	62	64	66	68	70
Al Wusta	3%	41	39	37	38	39	41	42
Demand in the secondary market		**110**	**104**	**99**	**102**	**105**	**108**	**112**
Batinah	30%	413	392	372	383	395	407	419
Others	7%	96	91	87	89	92	95	98
Demand in the other market		**509**	**483**	**459**	**473**	**487**	**502**	**517**
	100%	**1,375**	**1,306**	**1,241**	**1,278**	**1,316**	**1,356**	**1,396**

3.11. COMPETITION ANALYSIS

The market for EPS products is catered to by both domestic manufacturing and imports.

3.11.1. Details of Domestic Manufacturers

Details of EPS Box/ Sheet manufacturers in Oman are given below:

3.11.1.1. Oriental Polystyrene Products

Oriental Polystyrene Products Co. LLC, Rusayl, is the key manufacturer of environmental CFC free EPS Products. Their major products are:

- ✓ Insulation boards for roof and wall
- ✓ Pipe insulation sections for various applications
- ✓ Fish / Vegetable Boxes
- ✓ Packing material
- ✓ Miscellaneous shapes of EPS blocks.

3.11.1.2.Mutrah Insofoam Co

Mutrah Insofoam Co. (S.A.O.G) is the leading manufacturer of Expanded Polystyrene (EPS) in the Sultanate of Oman. The company initially started production in 1983. Sheets from EPS blocks, pipe insulation sections, and environment friendly packing material were the initial activities of the company. Two years later, in 1985, the company acquired the latest European technology at that time and launched the 'injection moulded boards' for roof insulation.

Current business activities include the production of:

- ✓ Styrocell Expanded Polystyrene Beads
- ✓ Styrotop Polystyrene Moulded Board with Ventilation Channels.
- ✓ Insobox Moulded Polystyrene Fish boxes
- ✓ Insofoam Expanded Polystyrene Sheets
- ✓ Insopipe Expanded Polystyrene Pipe Sections

Computer aided cutting machines for speed and accuracy enabled the company to diversify into yet another area, namely the cutting of 'Troughs' and 'Void Formers' for the construction of bridges, parking decks etc.

In the packaging sphere too, Mutrah Insofoam has noteworthy achievements. Fish boxes of capacities ranging between 5 and 80 Kg and vegetable boxes of 7 and 10 Kg capacities are supplied to Government and private companies who export the goods packed in them to the international markets.

The company does not produce vegetable and fruit boxes.

3.11.1.3.Ritaj Hormuz

Ritaj Hormuz established in 2012 operating in Falaj al Awhi industrial area in Sohar which manufactures and provides EPS products such as:

- ✓ EPS Foams
- ✓ Thermo cool boxes/Sheets in different shapes.

The company does not produce fish and vegetable & fruit boxes.

3.11.1.4. Production Estimates

The production in Oman (for EPS) is estimated at around 2,200 tons based on information collected from the industry sources.

Players in Oman	Approx. Sales in OMR	Estimated production in Tons
Muttrah Insofoam Co. SAOC	RO 1 million	*1,000*
Oriental Polystyrene Products	RO 1.2 million	*1,150*
Ritaj Hormuz	RO 60,000	*50*
	Total tons produced	**2,200**

(2020 Data – through primary survey by ABC)

3.11.2. New Local Player

Based on primary survey, National Packaging Company has started a manufacturing unit in Dhofar region producing EPS sheets and boxes. Their production capacities are about 500 tons of EPS products. The plant has recently (2020) started their trial production. The company shall focus on the Dhofar and Duqm market.

3.11.3. Major Exporters from UAE

The construction boom in UAE has been a major cause for the rapid increase in demand for polystyrene products. The surge in demand has been met more by increased domestic manufacturing than imports. The demand of polystyrene products in construction is being boosted by government construction regulations in the UAE. The total production capacity for EPS in UAE is around **30,520 tons**. Major players in the UAE market are:

- National Polystyrene Packaging Factory
- STYRO Insulation Mat. Ind. (L.L.C)
- Styropack for Plastic Factory LLC
- Aspen Polystyrene Industry
- Styrene Insulation Industry

3.11.4. Market Share

The market is dominated by imports from UAE as illustrated below:

Domestic Players	**30%**
Oriental Polystyrene	*15%*
Muttrah Insofoam	*10%*
Ritaj	*5%*
Imports	**70%**
UAE	*60%*
Other	*10%*

3.12. MARKETING MIX STRATEGY OF THE COMPETITORS

Being industrial products the products are generally marketed by adhering to the customer's specifications as well as competitive pricing. The general marketing mix strategy of the competition is illustrated in the following sections.

3.12.1. Product Details & Pricing

There are different range and standard products which are available in the market at specific price ranges. However, in most cases, the prices of the products depend on the density of the box.

EPS manufacturers offer their products directly to the institutional buyers (like fish processing units / Block manufacturing units etc.

Also Vegetable & Fruits boxes are sold directly to users/retailers (including larger one like Lulu market) for the purpose of packing or re-packing.

As per primary survey, the producers in Oman and UAE do not deliver the goods to the end user. The price above is at gate price of the manufacturer. The transportation cost is borne by the end user.

3.12.1.1. Fish Boxes

The common box sizes available in the local market are:

Capacity	External Dimensions L X B X H (mm)	Thickness (mm)	Box weight (Kg)	Pricing
5 kg	478 X 304 X 155 mm	20 mm	0.250	0.600
20kg	700 X 357 X 230 mm	25 mm	0.500	1.000
25kg	620 X 420 X 310 mm	30 mm	0.600	1.500
50 kg	1400 X 500 X 310 mm	40 mm	2.100	4.000

It may be noted that the boxes are designed with the lid. The external dimensions and the box weigh include the lid also.

3.12.1.2. Vegetable & Fruit Boxes

The common box sizes available in the local market are:

Capacity	External Dimensions (mm)	Thickness (mm)	Box weight (Kg)	Price / Piece
2 Kg	245 x 165 x 85	8 mm	0.023	R.O 0.035/pc
3 Kg	260 x 165 x 90	10 mm	0.028	R.O 0.060/pc
5 Kg	325 x 210 x 100	12 mm	0.056	R.O 0.140/pc

The vegetable and fruit boxes do not have a lid. In addition they also have perforations to allow air circulation. The perforations also help in reduction of raw material usage.

3.12.1.3. EPS Sheets

- Thickness: 5 mm- 1250 mm
- Density (10-40 Kgs/m^3)

The following table illustrates the expected pricing to institutional buyers:

EPS sheets	
EPS sheet : 540 X 470 X 80 MM LD + Grade (Wall)	0.400 / Piece
EPS sheet 520 X 460 X 100 MM LD+ Grade (Slab)	0.450 / Piece

It may be noted that the above pricing is quoted as ex-factory pricing. The end users bear the transportation cost.

3.12.2. Distribution

Considering the fact that the product is a light weight product, transportation shall play a crucial role in the overall landed cost to the consumer. The products are distributed to the retailers by the manufacturer through outsourced transportation system and the end user bears the cost. It may be noted that the above prices (illustrated in the table above) are the landed cost (delivered prices) for the retailer / institutional buyer. As per primary survey, the producers in Oman and UAE do not provide delivery for Vegetable boxes. The price above is at gate price.

3.12.3. Promotion

The products are promoted through direct selling to the institutional buyers i.e., fish processing units and the insulated block / insulated pre-cast product manufacturers etc. Ensuring quality (specifications), competitive pricing and adhering to delivery schedules are the key factors that will ensure product promotion.

3.13. PROPOSED MARKETING MIX STRATEGY FOR THE PROJECT

3.13.1. Target Market

It is suggested that the plant is located Rusayl Industrial City. The company shall focus on the growing market in Muscat as well as that of the other markets of Sharqiyah (Sur) and Wusta (Duqm).

3.13.2. Product Details & Pricing

The project shall manufacture all the sizes that are popular in the market. This is essential as the end users will require a single point of purchase for all their requirements.

3.13.2.1. Fish Boxes

The table illustrates the price mix.

Packing Capacity	External Dimensions L X B X H (mm)	Thickness (mm)	Box weight (Kg)	% of production	Pricing	
					Primary market	Secondary market
5 kg	478 X 304 X 155	20 mm	0.250	65%	0.690	0.490
20 kg	700 X 357 X 230	25 mm	0.500	25%	1.180	0.780
25 kg	620 X 420 X 310	30 mm	0.600	5%	1.725	1.225
50 kg	1400 X 500 X 310	40 mm	2.100	5%	4.450	3.450

The following table illustrates the weighted average realisation per ton of EPS Fish boxes:

Packing capacity	Realization RO per piece in		Realization RO per ton in		Weighted average realization (RO / ton) in	
	Primary market	Secondary market	Primary market	Secondary market	Primary market	Secondary market
5 kg	0.690	0.490	2760	1960	1,794	1,274
20 kg	1.180	0.780	2360	1560	590	390
25 kg	1.725	1.225	2875	2042	144	102
50 kg	4.450	3.450	2119	1643	106	82
Weighted Average realization (RO / Ton)					**2,634**	**1,848**
Average price considered in the financial projections					**RO 2,400 per ton**	

3.13.2.2. Vegetable & Fruit Boxes

The unit shall manufacture two sizes of boxes as detailed below. The design of the boxes will be similar to the ones available in the market i.e., without lid and with perforations:

Capacity	External Dimensions (mm)	Thickness (mm)	Box weight (Kg)	% of production	Price / Piece	
					Primary market	Secondary market
2 Kg	245 x 165 x 85	8 mm	0.023	90%	0.049	0.019
5 Kg	325 x 210 x 100	12 mm	0.056	10%	0.167	0.107

The following table illustrates the weighted average realisation per ton of EPS Fruits and vegetable boxes:

Packing capacity	Realization RO per piece in		Realization RO per ton in		Weighted average realization (RO / ton) in	
	Primary market	Secondary market	Primary market	Secondary market	Primary market	Secondary market
2 Kg	0.049	0.019	2,109	804	1,898	724
5 Kg	0.167	0.107	2,982	1911	298	191
Weighted Average realization (RO / Ton)					**2,196**	**915**
Average price considered in the financial projections					**RO 2,400 per ton**	

3.13.2.3. EPS Sheets

The unit shall produce sheets of the following range for various applications:

- Thickness: 5 mm- 1250 mm
- Density (10-40 Kgs/m^3)

The following table illustrates the expected pricing to institutional buyers for one of the representative size:

Sheet Dimensions L X B X T (mm)	Sheet weight (Kg)	% of production	Pricing per sheet	
			Primary market	Secondary market
540 X 470 X 80 MM LD + Grade (Wall)	0.165	75%	0.405	0.395
520 X 460 X 100 MM LD+ Grade (Slab)	0.190	25%	0.455	0.445

The following table illustrates the weighted average realisation per ton of EPS sheets:

Product	Realization - RO per Sheet in		Realization RO per ton in		Weighted average realization (RO / ton) in	
	Primary market	Secondary market	Primary market	Secondary market	Primary market	Secondary market
540 X 470 X 80 MM LD + Grade (Wall)	0.405	0.395	2452	2391	1839	1793
520 X 460 X 100 MM LD+ Grade (Slab)	0.455	0.445	2392	2339	598	585
Weighted Average realization (RO / Ton)					**2,437**	**2,378**
Average price considered in the financial projections					**RO 2,200 per ton**	

3.13.3. Distribution

Considering the fact that the product is a light weight product, transportation shall play a crucial role in the overall landed cost to the consumer. The products shall be distributed to the end users through outsourced transportation system and the end user shall bear the cost.

3.13.4. Promotion

The products shall be promoted through direct selling to the institutional buyers i.e., fish processing units and the insulated block / insulated pre-cast product manufacturers etc. The unit shall ensure quality (products manufactured to specifications), provide competitive pricing and adhere to delivery schedules to ensure product promotion.

3.14. PROJECTED MARKET SHARE

Currently, the demand for EPS fish boxes and EPS sheets in the target market is met by imports and supply from 2 major players in Oman.

- Considering the fact that the product is bulky and transportation costs are expected to be high, conservatively, the project can aspire to take up to 35% of the market share in the primary market over five years.
- In the secondary market, the unit can get about 10% market share for EPS boxes over three years and sustain the same.
- With respect to the sheets, considering the fact that the impact of volume factor is less, and the demand is project based, in the secondary market the unit may aspire for market share of about 10% over three years and sustain it. However, this will be subject to a competitive pricing strategy.

The following table illustrates the expected market share of the various products in the primary and secondary market.

Market Details	2020	2021	2022	2023	2024	2025	2026
	Fish Boxes (Figures in Tons)						
Demand in the primary market	865	891	918	945	974	1,003	1,033
Estimated market share	20%	25%	30%	35%	35%	35%	35%
Estimated sales quantity	**173**	**223**	**275**	**331**	**341**	**351**	**362**
Demand in the secondary market	247	255	262	270	278	287	295
Estimated market share	5%	7%	10%	10%	10%	10%	10%
Estimated sales quantity	**12**	**18**	**26**	**27**	**28**	**29**	**30**
Sub Total of Fish Boxes	**185**	**241**	**302**	**358**	**369**	**380**	**391**
	Vegetable and Fruit Boxes (Figures in Tons)						
Demand in the primary market	**464**	**477**	**492**	**506**	**522**	**537**	**553**
Estimated market share	20%	25%	30%	35%	35%	35%	35%
Estimated sales quantity	**93**	**119**	**148**	**177**	**183**	**188**	**194**

Demand in the secondary market	**464**	**477**	**492**	**506**	**522**	**537**	**553**
Estimated market share	5%	7%	10%	10%	10%	10%	10%
Estimated sales quantity	**23**	**33**	**49**	**51**	**52**	**54**	**55**
Sub Total of vegetable and Fruit Boxes	**116**	**153**	**197**	**228**	**235**	**242**	**249**
Grand total of EPS Boxes	**301**	**393**	**498**	**585**	**604**	**621**	**640**
	EPS Sheets (Figures in Tons)						
Demand in the primary market	756	718	683	703	724	746	768
Estimated market share	5%	10%	12%	12%	12%	12%	12%
Estimated sales quantity	**38**	**72**	**82**	**84**	**87**	**89**	**92**
Demand in the secondary market	619	588	558	575	592	610	628
Estimated market share	5%	10%	10%	10%	10%	10%	10%
Estimated sales quantity	**31**	**59**	**56**	**58**	**59**	**61**	**63**
Total of EPS Sheets	**69**	**131**	**138**	**142**	**146**	**151**	**155**

3.15. MARKET POTENTIAL AND PROPOSED PRODUCTION CAPACITY

As per the above estimates, the consultants suggest that, subject to techno commercial viability:

- Consider an EPS Sheet line with capacity of 200 tons a year.
- Consider an EPS box line with capacity of - 450 tons a year for fish boxes and 300 tons per year for fruits and vegetable boxes.

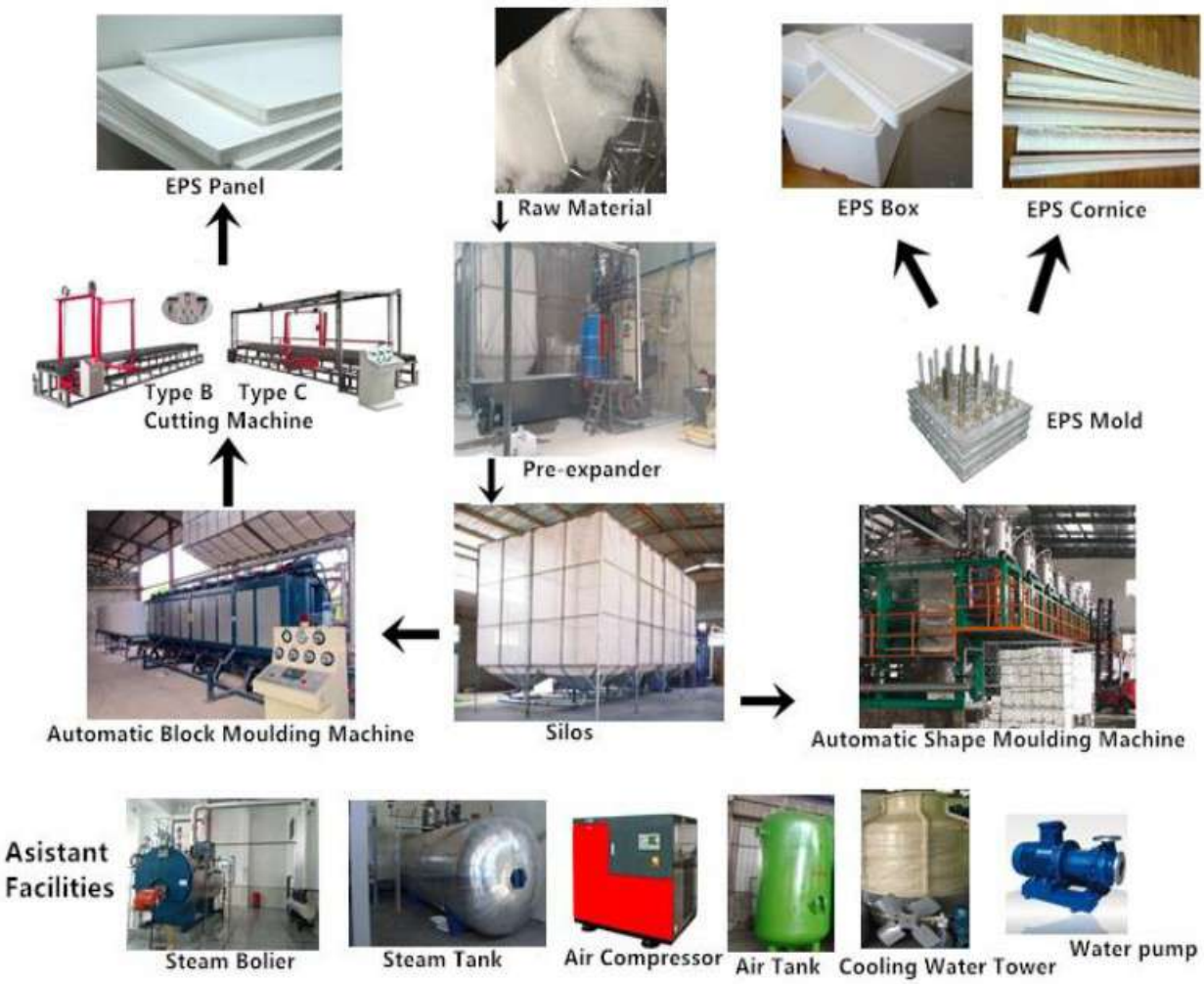
4.0 TECHNICAL ANALYSIS

4.1. LOCATION

It is suggested that the plant is located Rusayl Industrial City. The company shall focus on the growing market in Muscat as well as that of the other markets of Sharqiyah (Sur) and Wusta (Duqm).

4.2. PROCESS

The production process flow chart is presented below.



4.3. PRODUCTS

The products from the proposed project are

a) EPS sheets

b) EPS Fish boxes

c) EPS Fruits and Vegetable boxes

4.4. LAND

The total land area requirement is 5,000 M^2. The land shall be leased from MADAYN.

4.5. BUILDING & CIVIL WORKS

The area and type of built up spaces required are detailed in the following table. Details are in Annexure- 1.1.

S. No.	Item	Unit	Area
A	**PLANT MAIN BUILDING**		
1	Main Building	Sq. M	1,000
B	**RM & FG STORAGE**		
1	Raw Material Storage	Sq. M	300
2	Finished goods storage	Sq. M	500
C	**UTILITIES & MAINTENANCE**		
1	Compressor Room	Sq. M	50
2	Electrical Room	Sq. M	50
3	Quality Lab	Sq. M	50
D	**ADMIN & OTHER BUILDINGS**		
1	Office	Sq. M	150
2	Canteen	Sq. M	50
3	Change room	Sq. M	50
4	Security Room & Gate	Sq. M	50
	Sub Total		**2,250**

4.6. PLANT & MACHINERY

The proposed projects financial analysis is considered based on quotations from machinery supplier in **China – M/S Hangzhou Fuyang Longwell Industry Co., Ltd.** The supplier considered are the same as suppliers for the completion from Dhofar region.

Other potential machinery suppliers are:

Hangzhou Fangyuan Plastic Machinery Co., Ltd http://www.fang-yuan.com Mobile: +86-15868488709 Email : fangyuan@fang-yuan.com jessica@fang-yuan.com
DEYI GROUP (https://www.cndeyigroup.com/) TEL: 0086-535-8613088 ADDRESS: Xinjia Street, Longkou City, Shandong Province, China
HIRSCH Porozell GmbH Production Rheda Augsburger Straße 8-10 D-33378 Rheda-Wiedenbrück Germany Sales Office Fax: +49 (0) 5242 9608 69 / +49 (0) 5242 9608 45

4.6.1. Capacity & Capacity Utilisation

The capacity of the machinery and the expected utilization based on market research assessment is presented in the table below.

Products	Capacity per year (Tons)	Y1	Y2	Y3	Y4	Y5	Y6
Fish Boxes	450	54%	67%	80%	82%	84%	87%
Veg Boxes	300	51%	66%	76%	78%	81%	83%

4.7. VEHICLES

A total of 2 pickups and 2 cars are provided in the project at an estimated cost of RO 36,000. Details are provided in Annexure 1.3.

4.8. FURNITURE

The furniture and equipment for office, maintenance, production facilities and accommodation for the employees are provided in the estimate.

The total estimated cost of furniture, furnishing and equipment is RO 27,000. The details and the break-up of the estimates are given in Annexure - 1.4.

4.9. RAW MATERIALS AND CONSUMABLES

After detailed discussion with the industry experts the cost of raw material and consumables is estimated to be about 64% of the sales estimates.

4.10. UTILITIES

Based on the quotation considered for the analysis, the utility assessment is presented below.

No.	Utilities	Unit	Quantity
1	Water	KL	8,640
2	Electricity	kWh	337,200
3	Diesel for boiler	Liters	105,923

4.11. MANPOWER

The total manpower deployment for the envisaged level of operation is 31 of which 11 are Omanis. The rate of Omanization is 35%. The annual wages and salaries work out to be R.O. 196,000. The details are given in annexure 2.3.

4.12. PROJECT IMPLEMENTATION

The critical activities include civil construction, acquisition and the erection of the plant and machinery. Construction of building will take about 9 months. Placing of orders for machinery to be planned in such a way that the machinery arrives at the site as soon as the building is completed. The project can start production after 15 months from the time of financial closure.

5.0 FINANCIAL ANALYSIS

5.1. COST OF PROJECT

The total cost of the project is estimated at RO 1.095 million. Details are given in Annexure – 1. The break-up is given below:

PROJECT COST	TOTAL COST (RO)	REMARKS	REFERENCE
Land & Site Development	30,000	*The total extent of land of 5,000 M2is proposed to be taken on lease rental @ RO 1 per Square meter per annum (increased after 5 years)*	Annexure 1.1
Building & Civil works	288,000	*Building for the plant, warehouses and other administrative buildings.*	Annexure- 1.2
Plant & Machinery	157,000	*Based on machinery quote from China.*	Annexure- 1.3
Vehicles and Internal Transport	36,000	*Cars for managers and pickups for the product transport.*	Annexure- 1.4
Furniture & Office Equipment	27,000	*Estimated for the production plant and for the manpower.*	Annexure- 1.5
Pre- Operative Expenses	169,000	*Includes expenses for feasibility study, interest during project implementation, salaries and wages of project staff, travel and communication, legal fees, audit fees and other miscellaneous expenses.*	Annexure- 1.6
Contingency & Escalation	34,000	*A provision of 5 % of the estimated cost of items including building, plant & machinery, vehicles, technical know-how fee etc., is provided in the Project cost towards price escalation and any unforeseen expenses.*	Annexure- 1.7
Sub Total	**741,000**		
Working Capital	370,000	*Details in section 5.1.1*	Annexure- 1.8
TOTAL CAPITAL	**1,111,000**		

5.1.1. Working Capital

The following assumptions are made in the computation of working capital.

Particulars	Period
Accounts Receivable	3 Months
Raw Materials	1 month
Utilities	1 Month
Wages	1 Month
Administration Expenses	1 Month
Sales Expenses	1 Month
Work in Progress	1 Day
Finished Goods	15 Days
Finance Cost	1 Month

The working capital requirements for the first 4 years are given below. The working capital requirement in the first year comes to RO 370,000. Details are given in Annexure 1.8.

Particulars	Year 1	Year 2	Year 3	Year 4
Working Capital Requirement (RO '000)	370	431	482	494

5.2. MEANS OF FINANCE

It is proposed to finance the Project as indicated in the following table.

Details	Total Cost (In RO)
Equity Capital	444,000
Term Loan	445,000
Working capital Loan	222,000
TOTAL CAPITAL	**1,111,000**

It is proposed that the project cost of RO 1.111 million will be financed by owner's fund [equity] to the tune of RO 444,000 and Term Loan of RO 445,000 in addition to a working capital loan of RO 222,000. Interest rate is considered at 6% for the loans. Details are given in Annexure- 1.

5.3. COST OF SALES

The estimated cost of sale for first ten years of operation is given in Annexure-2 and those of first five years are summarized below:

Years of Operation	1	2	3	4	5
Details	*Figures are in R.O. '000*				
Raw Material & Consumables	790	961	1,100	1,133	1,168
Utilities	22	28	33	34	35
Factory Wages	98	101	104	107	111
PRIME COST	910	1,090	1,237	1,275	1,314
Rent for Industrial Land	5	5	5	5	5
Factory Overheads	7	10	12	12	12
Misc. Factory Exp.	23	28	31	32	33
FACTORY COST	946	1,132	1,286	1,324	1,364
Admin. Salaries	62	64	66	68	70
Admin. Expenses	18	18	18	18	18
Total Admin expenses	81	82	84	86	88
Sales Salaries	18	19	20	20	21
Distribution expenses	62	75	86	89	91
Advert.& Business Promotion	25	30	34	35	37
Total sales & distribution costs	105	124	140	144	149
OPERATING COST	1,131	1,339	1,510	1,555	1,601
Interest on Term Loan	27	26	23	19	16
Interest on Working Capital Loan	13	13	13	13	13
Total Finance Cost	40	39	36	33	29
Depreciation	61	61	61	61	61
Prelim Expenses written off	169	0	0	0	0
COST OF SALE	**1,401**	**1,439**	**1,607**	**1,648**	**1,691**

5.4. RAW MATERIALS

The cost of raw materials & consumables works out to RO 790,000 for the first year. Please refer Annexure 2.1 for details.

5.5. UTILITIES

The cost of utilities including diesel, electricity and water at a customary rates in the industrial city works out to R.O 41,555. The basis of estimate and the break up are given in Annexure–2.2.

5.6. SALARIES & WAGES

The cost of salaries and wages in the normal year of operation is RO 196,000. An increase of 3% is given in every following year. Details are given in Annexure 2.3.

5.7. FACTORY OVERHEADS

The annual expenses include repairs and maintenance, civil repairs, cost of spares, insurance and vehicle expense and the same is estimated at RO 7,340 for the first year, RO 9,630 for the second year and RO 11,920 for the third year. Details given in Annexure- 2.4.

5.8. ADMINISTRATIVE EXPENSES

The basis of estimates of administrative expenses inclusive of salaries & wages is given in Annexure 2.5. Administrative expenses excluding salaries and wages works out to RO 18,438 for the first year. It includes communication related expenses, stationery, postage, etc.

5.9. SALES EXPENSES

Total sales expenses are estimated at RO 18,480 for the first year. Details given in Annexure- 2.6

5.10. DEPRECIATION

Depreciation works out to RO 61,400 each for first ten years. In addition, a preliminary expense amount of RO 169,000 is written off in the first year of operation. Depreciation calculation is given in annexure- 2.7. The following are the rates considered for the calculation of depreciation.

Assets	Life (years)	% of depreciation
Buildings	25	4
Plant & Machinery	10	10
Vehicles	4	25
Furniture & Office Equipment	5	20

5.11. LOAN & INTEREST CALCULATION

Interest rate for the term loan and commercial loan from bank for working capital is taken at 6%. Details of interest calculations are given in Annexure-2.8.

5.12. INCOME TAX

No income tax is provided for the 1st 5 years as the new units are exempted from tax for the first five years. From the 6th year a tax of 15% is levied on the total profits.

5.13. SALES REALIZATION

The annual sales realization for the first five years of operation at installed capacity is provided below.

Year Unit	Year 1	Year 2	Year 3	Year 4	Year 5
RO '000	1,234	1,501	1,719	1,771	1,825

5.14. NET PROFIT AND PROFITABILITY ANALYSIS

As per the financial projection in Annexure 3, the venture is financially viable. The summary of the analysis is given under:

	Year of Operation	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
	Capacity Utilization	54%	67%	80%	82%	84%
No	**Item**	**Figures in RO 000**				
1	**Operating Cost**	1,131	1,339	1,510	1,555	1,601
2	Expected Sales	1,234	1,501	1,719	1,771	1,825
3	**Profit before Interest & depreciation**	**103**	**162**	**209**	**216**	**224**
4	Depreciation	61	61	61	61	61
5	Finance Cost	40	39	36	33	29
6	**Operating profit**	**1**	**62**	**112**	**122**	**134**
7	Other income if any					
8	Prelim Expenses written off	169	0	0	0	0
9	Profit/Loss before tax	-168	62	112	122	134
10	Income Tax*	0	0	0	0	0
11	**Profit after tax**	**-168**	**62**	**112**	**122**	**134**
12	Statutory reserve	0	6	11	12	13
13	Profit for appropriation	0	56	100	110	120
14	Dividend	0	0	0	0	0
15	General reserve	0	56	100	110	120
16	**Net cash accruals**	**63**	**123**	**173**	**184**	**195**

* : Income tax considered at 15% of net profit from year 6

5.15. COST RATIOS

The major cost indicators as a percentage of sales realization are given in Annexure- 8.

Years of Operation	1	2	3	4	5
Raw Material / Total Sales	64%	64%	64%	64%	64%
Utilities / Total Sales	2%	2%	2%	2%	2%
Factory wages / Total Sales	8%	7%	6%	6%	6%
Prime Cost / Total Sales	74%	73%	72%	72%	72%
Factory exp. / Total Sales	3%	3%	3%	3%	3%
Factory Cost / Total Sales	77%	75%	75%	75%	75%
Admin exp. / Total Sales	7%	5%	5%	5%	5%
Selling exp. / Total Sales	8%	8%	8%	8%	8%
Finance Cost / Total Sales	3%	3%	2%	2%	2%
Non-Cash exp. /Total Sales	19%	4%	4%	3%	3%
Total Cost / Sales	114%	96%	94%	93%	93%

5.16. KEY FINANCIAL INDICATORS

The viability of the project based on major appraisal criteria is given below.

Detail	Value
IRR on Total Investment	14.8%
IRR on Equity	23.5%
Payback period of Total Investment	6 years 11 months
Payback period on Equity	5 years 10 months
Break Even Point at % of plant capacity	70.7%
Cash Break Even Point at % of plant capacity	62.1%
DSCR	2.36

5.17. SENSITIVITY ANALYSIS

A sensitivity analysis has been carried out to determine the susceptibility of the project. The results are in the following table.

Particulars	Original	Volume Down by 10%	RM Cost up by 10%	Sales Realization Down by 10%
IRR on Investment (%)	14.29	9.60	5.39	0.22
IRR on equity (%)	22.32	14.11	7.31	-0.32

6.0 KEY SUCCESS AND PUSHBACK FACTORS

The following aspects are highlighted as the key success / pushback factors.

6.1. KEY SUCCESS FACTOR

- There is a local demand for EPS Boxes and sheets that the project can leverage.
- The project shall be able to effectively leverage on the government incentives including low cost well developed industrial land, utilities etc.
- The incentives in terms of price preference to local manufacturers in Government procurement could also be leveraged by the project.

6.2. KEY PUSHBACK FACTOR

The EPS boxes are bulky and the high transportation cost shall make the products non-competitive against producers who are locally available. Hence the project shall focus on the demand for the products in the nearby geographical area only.

7.0 CONCLUSION

The IRR on Total Investment of 14.29% and an IRR on Equity investment of 22.32% viewed along with the other relevant financial indicators show that the project is technically feasible and financially viable.

Annexures – Financial Projections

ANNEXURE- 1					
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES					
ESTIMATED PROJECT COST					
S. No.	**Item**	**Refer**	**Amount**		**Remarks**
		App.	**RO**		
A1	**PROJECT COST**				
1	Land development Cost	1.1	30,000		Estimates
2	Building & Other Civil Works	1.2	288,000		Estimates
3	Plant & Machinery	1.3	157,000		Budgetary Offer
4	Vehicles and Int. Transport	1.4	36,000		Estimates
5	Furniture & Office Equip.	1.5	27,000		Estimates
6	Pre- Operative Expenses	1.6	169,000		Estimates
7	Contingency & Escalation	1.7	34,000		Estimates
	Sub Total		741,000	**741,000**	
A2	**WORKING CAPITAL**		370,000	**370,000**	
A3	**TOTAL CAPITAL**			1,111,000	
	Say			**1,111,000**	
B	**MODE OF FINANCE**				
1	Total Equity			**444,000**	40% of Project Cost
2	Bank Term Loan			**445,000**	
	Sub-Total			**889,000**	
3	Commercial Borrowings for Working Capital			222,000	
	TOTAL CAPITAL			**1,111,000**	

ANNEXURE- 1.1						
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES						
ESTIMATED COST OF LAND & SITE DEVELOPMENT						
S.No.	**Item**	**Unit**	**Q'ty**	**Rate**	**Amount**	**Remarks**
				RO	**RO**	
A	**LAND**	Sq.M	5,000			On lease
B	**SITE DEVELOPMENT**					
1	Soil Testing and Leveling				5,000	Lumpsum
2	Fencing	M	283	35	9,899	Estimate
3	Paving /Roads	Sq. M	250	8	2,000	Estimate
4	Sewerage/Drainage				3,000	Lumpsum
5	Provision for Electric line				5,000	Lumpsum
6	Provision for Waterline from Main				5,000	Lumpsum
	Sub Total				**29,899**	Sum (B1 to B6)
C	**TOTAL**				**29,899**	
	Total Rounded off				**30,000**	

ANNEXURE- 1.2						
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES						
ESTIMATED COST OF BUILDING & CIVIL WORKS						
S. No	**Item**	**Unit**	**Area**	**Rate**	**Amount**	**Remarks**
				RO	***RO***	
A	**PLANT MAIN BUILDING**					
1	Main Building	Sq. M	1,000	100	100,000	Estimated
	Sub Total		**1,000**		100,000	
B	**RM & FG STORAGE**					
1	Raw Material Storage	Sq. M	300	100	30,000	Estimated
2	Finished goods storage	Sq. M	500	100	50,000	Estimated
	Sub Total		**800**		**80,000**	
C	**UTILITIES & MAINTENANCE**					
1	Compressor Room	Sq. M	50			Estimated
2	Electrical Room	Sq. M	50	120	18,000	Estimated
3	Quality Lab	Sq. M	50			Estimated
	Sub Total		**150**		**18,000**	
D	**ADMIN & OTHER BUILDINGS**					
1	Office	Sq. M	150	120	18,000	Estimated
2	Canteen	Sq. M	50	120	6,000	Estimated
3	Change room	Sq. M	50	120	6,000	Estimated
4	Security Room & Gate	Sq. M	50	100	5,000	Estimated
	Sub Total		**300**		**35,000**	
E	**OTHER CIVIL WORKS**					
1	Water Tank	Set	1	10,000	10,000	Estimated
2	Electro Mechanical Works	Sq. M	2,250	15	33,750	Estimated
	Sub Total				**43,750**	
	Total Cost of Building & other structures				**276,750**	
F	**ENGINEERING FEES**					
1	Design				5,535	At 2% on built up area cost
2	Supervision				5,535	At 2% on built up area cost
	Sub Total				**11,070**	
G	**TOTAL**	**Sq. M.**	**2,250**		287,820	
	Say				**288,000**	

ANNEXURE- 1.3							
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES							
ESTIMATED COST OF PLANT & MACHINERY							
S.No.	**Item**	**Quantity**	**Unit Rate**	**Total**	**Amount**	**Amount**	**Remarks**
	Quotation from - Hangzhou Fuyang Longwell Industry Co., Ltd - China			**In USD**	**In USD**	**RO**	
A	**LIST OF MAJOR EQUIPMENTS**			Conversion Rate		0.385	
1	Auto Batch Pre Expander	1	36,800	36,800			
2	Silos	14	1,100	15,400			
3	Auto shape moulding machine with	2	39,600	79,200			
4	Mould System						
a	Mould for Fish box	3	12,000	36,000			
b	Mould for Veg box	3	12,000	36,000			
c	Feeding guns	80	30	2,400			
d	Ejectors	120	10	1,200			
B	Recycling system	1	25,000	25,000			
C	**SUPPORT EQUIPMENTS**						
5	Steam boiler	1	63,000	63,000			
6	Steam tank / Piping st=ystem etc.	1	20,000	20,000			
7	Air compressor	1	7,600	7,600			
					322,600	**124,201**	Estimates
C	**MAINTENANCE TOOLS- LOCAL**					10,000	Lumpsum
D	**ELECTRIFICATION - LOCAL**						
1	HV Supply					15,000	Lumpsump Estimated
2	HV Panel						
3	Transformer						
4	MV Switchboard						
5	Switch Boards / Distribution Boards						
6	Lighting Fixtures						
7	Cables						
8	PF Correction						
9	Diesel Generator						
10	Lighting Conductors & Earthing						

ANNEXURE- 1.4						
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES						
ESTIMATED COST OF VEHICLES & INTERNAL TRANSPORT						
S. No.	**Item**		**Q'ty**	**Amount**	**Amount**	**Remarks**
			(Nos.)		**RO**	
A	**GENERAL PURPOSE VEHICLES**					
1	Car	Nos.	2	7,500	15,000	
2	Pick Up	Nos.	2	9,000	18,000	
			4		**33,000**	
B	**VEHICLES FOR PLANT OPERATION**					
1	Fork Lifts (3 Tons)	Nos.	0	12,000	-	
	Sub Total				**-**	
C	Registration, Painting, Spares etc				3,300	10% of the above
	Sub Total				**3,300**	Estimate
D	**TOTAL**				36,300	
	Say				**36,000**	

ANNEXURE- 1.5					
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES					
ESTIMATED COST OF FURNITURE & OFFICE EQUIPMENT					
S.No.	**Item**	**Q'ty**	**Rate**	**Amount**	**Remarks**
				RO	
A	**OFFICE**				
1	P.C with Printer	5	300	1,500	Lumpsum
2	Photo Copier	1	1,200	1,200	
3	Fax, Telephone	Set		500	Lumpsum
4	Other Office Equipment	Set		2,000	Lumpsum
5	Air Conditioners	12	300	3,600	Lumpsum
6	Office Furnitures	Set		5,000	Lumpsum
	Sub Total			**13,800**	
B	**ACCOMMODATION FURNITURE**				
1	Furniture / Fittings			4,000	Lumpsum
	Sub Total			**4,000**	
C	**FACTORY**				
1	Furniture / Fittings			9,300	Lumpsum
	Sub Total			**9,300**	
D	**TOTAL**			27,100	Sum A + B + C
				27,000	

ANNEXURE- 1.6

EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES

ESTIMATED COST OF PRE-OPERATIVE EXPENSES

S. No	Item		Amount	Remarks
		RO	RO	
1	Preliminary Expenses		5,000	
2	Project Management Expenses		27,775	2.5% of project cost
3	Feasibility Studies		6,000	Detailed Feasibility Report
4	Company Employees			
a	Salary & benefits - General Manager	5,880		3 Months
b	Salary & benefits - Works Manager	2,940		3 Months
c	Salary & benefits - Production Staff	5,150		2 Months (50% staff)
d	Salary & benefits - Admin. Staff	43,700		1 Month (50% staff)
e	Salary & benefits - Sales Staff	1,100		1 Month
	Visa, Passage etc.			For Expatriates
	Lower level employees	6,300		
	Middle level employees	13,200		
	Senior Level employees	2,500		
	Sub Total		80,770	
5	Financing Cost			
a	Institutional Loan Interest	13,350		At 6% for Bank Term loan for 6 months
b	Mortgage Expenses	4,450		At 1% on Institute: Loan
c	Other Bank Charges	1,000		Lumpsum
	Sub Total		18,800	
6	Communication		1,200	Lumpsum
7	Travel		3,000	Lumpsum
8	Recruitment Charges		6,200	At RO 200 per Person
9	Training		3,000	Lumpsum
10	Audit Fees, Legal Fees		1,500	Lumpsum
11	Insurance		628	At 0.4 % of Plant & Bldg.
13	Start Up Expenses		5,000	Estimate
14	Product Launching, Advt. etc.		5,000	Provision
15	Miscellaneous		5,000	Provision
	Total		168,873	
	Say..		**169,000**	

ANNEXURE- 1.7					
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES					
ESTIMATES OF CONTINGENCY AND ESCALATION					
S. No.	**Item**	**Cost**	**Rate**	**Provision**	**Remarks**
		RO	**(%)**	**RO**	
A	**FIXED ASSETS**				
1	Land for Plant Site	30,000	0.0	-	
2	Building etc.	288,000	5.0	14,400	
3	Plant & Machinery	157,000	5.0	7,850	
4	Technical Know-How	0	5.0	-	
5	Vehicles and Int. Transport	36,000	5.0	1,800	
6	Furniture & Office Equip.	27,000	5.0	1,350	
7	Pre- Operative Expenses	169,000	5.0	8,450	
	TOTAL			33,850	
				34,000	say

ANNEXURE- 1.8

EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES

ESTIMATES OF WORKING CAPITAL REQUIREMENTS

S. No.	Item	Req.	Tenure	Year 1	Year 2	Year 3	Year 4	Remarks
1	Account Receivables	3.0	Months	293	344	386	397	
2	Raw Materials	1	Months	66	80	92	94	
3	Utilities	1	Months	2	2	3	3	
4	Factory Wages	1	Months	8	8	9	9	
5	Admn. Expenses	1	Months	7	7	7	7	
6	Sales Expenses	1	Months	9	10	12	12	
7	Work in Progress	1	Day	3	3	4	4	
8	Finished Goods	0.5	Months	44	52	59	60	
9	Finance Cost	1	Months	3	3	3	3	
	Total			434	511	573	589	
10	Payables							
	Raw Materials	1	Month	66	80	92	94	
	Total			369	431	482	494	
	Say			**370**	**431**	**482**	**494**	

ANNEXURE- 2

EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES

COST OF SALE

	Year of Operation		1	2	3	4	5	6	7	8	9	10	
	Capacity Utilisation		54%	67%	80%	82%	84%	87%	87%	87%	87%	87%	
No	**Item**		**In RO '000**										**Remarks**
1	Raw Material & Consumables		790	961	1,100	1,133	1,168	1,168	1,168	1,168	1,168	1,168	Ref. Annexure 2.1
2	Utilities		22	28	33	34	35	36	36	36	36	36	Ref. Annexure 2.2
3	Factory Wages		98	101	104	107	111	114	117	121	124	128	Ref Annexure 2.3
5	**PRIME COST**		910	1,090	1,237	1,275	1,314	1,318	1,321	1,325	1,329	1,332	Sub total of 1 to 3
6	Rent for Industrial Land		5	5	5	5	5	6	6	6	6	6	At RO 1 per Sq.m / Yr increased by 15% from 6th year
7	Factory Overheads		7	10	12	12	12	12	12	12	12	12	Ref Annexure 2.4
8	Misc. Factory Exp.		23	28	31	32	33	33	33	34	34	34	At 2.5 % of (5) to (7)
9	**FACTORY COST**		946	1,132	1,286	1,324	1,364	1,369	1,373	1,376	1,380	1,384	Sub total of 5 to 8
10	Admin. Salaries		62	64	66	68	70	72	74	76	79	81	Ref Annexure 2.3 & 2.5
11	Admin. Expenses		18	18	18	18	18	18	18	18	18	18	Ref Annexure 2.5
12	Total Admin expenses		81	82	84	86	88	90	93	95	97	100	Sum (10) to (11)
13	Sales Salaries		18	19	20	20	21	21	22	23	23	24	Ref Annexure 2.3 & 2.6
14	Distribution expenses		62	75	86	89	91	91	91	91	91	91	Ref Annexure 2.6
15	Advert.& Business Promotion		25	30	34	35	37	37	37	37	37	37	2% of Sales
16	Total sales & dist: costs		105	124	140	144	149	149	150	150	151	152	Sum of (13 to 15)
17	**OPERATING COST**		1,131	1,339	1,510	1,555	1,601	1,609	1,615	1,622	1,628	1,635	Sum(9)+(12)+(16)
18	Int on Institutional finance		27	26	23	19	16	13	9	6	3	0	Ref Annexure 2.8
19	Int on working capital		13	13	13	13	13	13	13	13	13	13	Ref Annexure 2.8
20	Total finance cost		40	39	36	33	29	26	22	19	17	13	Sum (18)+(19)
21	Depreciation		61	61	61	61	61	61	61	61	61	61	Ref Annexure 2.7
22	Prelim Expenses written off		169	0	0	0	0	0	0	0	0	0	Ref Annexure 2.7
	COST OF SALE		**1,401**	**1,439**	**1,607**	**1,648**	**1,691**	**1,696**	**1,699**	**1,702**	**1,706**	**1,710**	Sum 17+20+21+22

ANNEXURE- 2.1										
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES										
ESTIMATED COST OF RAW MATERIALS										
S. No.		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
1	Total sales revenue ('000 RO)	1,234	1,501	1,719	1,771	1,825	1,825	1,825	1,825	1,825
2	Cost of RM	64%	64%	64%	64%	64%	64%	64%	64%	64%
3	Total cost of RM (RO'000)	790	961	1,100	1,133	1,168	1,168	1,168	1,168	1,168

ANNEXURE- 2.2						
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES						
ESTIMATED COST OF UTILITIES						
S. No.	**Item**	**Unit**	**Qty**	**Rate**	**Amount**	**Remarks**
					RO	
	UTILITIES					
1	Water	KL	8,640	0.770	6,653	
2	Electricity	kWh	337,200	0.030	10,116	
3	Diesel for boiler	Ltrs	105,923	0.234	24,786	
	TOTAL				**41,555**	

ANNEXURE- 2.3

EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES

ESTIMATES OF ANNUAL SALARIES AND WAGES

S.No.	Item	No of Personal		Salary in RO		Amount	Remarks
		Omani	Expat	Omani	Expat	RO	
A	**FACTORY/PRODUCTION**						
1	Plant & Quality Manager	0	1	0	700	8,400	
2	Engineers		1	0	500	6,000	
3	Technicians	0	1	0	400	4,800	
4	Machine operators	2	3	400	300	20,400	
5	Fork lift Operators	1	1	350	200	6,600	
6	Helpers	2	5	350	140	16,800	
7	Stores In Charge	1	1	400	200	7,200	
	Sub Total	**6**	**13**			**70,200**	
B	**MAINTENANCE / SAFETY**						
1	Maintenance Engineer	0	1	0	450	5,400	
2	Technicians (Mechanic/Electrician/Plumbers)	0	2	0	280	6,720	
	Sub Total	**0**	**3**			**12,120**	
C	**ADMINISTRATION & ACCOUNTS**						
1	General Manager		1		1400	16,800	
2	Accounts Manager		1		500	6,000	
3	PRO	1	0	500	0	6,000	
4	Driver	1	0	350	0	4,200	
6	Office Boy/ Messenger	0	1	0	150	1,800	
7	Security	2	0	400	0	9,600	
	Sub Total	**4**	**3**			**44,400**	
D	**SALES**						
1	Sales Team	1	1	600	500	13,200	
	Sub Total	**1**	**1**			**13,200**	
E	**Total Manpower Cost**						
1	Total Basic Salary					**139,920**	
2	Other Benefits					55,968	At 40% of Salary
E	**GRAND TOTAL**	**11**	**20**			**195,888**	
	Total	**31**					
	Omanisation Ratio	**35%**					
	Total rounded off					**196,000**	

ANNEXURE- 2.4					
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES					
ESTIMATES OF ANNUAL FACTORY EXPENSES					
S. No.	**Item**	**Year**	**Year**	**Year**	**Remarks**
		1	**2**	**3**	
1	Repairs & Maintenance	785	1,570	2,355	At 0.5%, 1.5% and 2% of erected cost of P & M
2	Civil Repairs	720	1,440	2,160	At 0.25%, 0.5% and 0.75% of erected cost of P & M
3	Spare Parts	785	1,570	2,355	At 0.5%, 1.5% and 2.0% of 'at-site' cost of P&M
4	Insurance	4,450	4,450	4,450	At 1 % of cost Building, Plant and Machinery
5	**Vehicle Expenses**				
a	Forklift	600	600	600	At RO 50 per Month
	TOTAL	**7,340**	**9,630**	**11,920**	

ANNEXURE- 2.5				
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES				
ESTIMATES OF ANNUAL ADMINISTRATIVE EXPENSES				
S. No.	**Item**		**Amount**	**Remarks**
		RO	**RO**	
	ADMINISTRATION			
1	Salaries & Benefits		62,160	
2	Rents and Rates		-	Included in COS
3	Vehicle Expenses & Petrol			
a	Cars (Nos)	2400		
	Sub Total		2,400	
4	Telephone, Fax etc.		3,000	At RO 250 /Month
5	Stationery, Postage etc.		1,200	At RO 100/Month
6	Medical Expenses		-	Incl. in Staff Benefits
7	Passage		-	Incl. in Staff Benefits
8	Travel & Recruitment		5,000	Lumpsum
9	Legal, Audit Fees		2,000	Lumpsum
10	Insurance		1,000	Lumpsum
11	Miscellaneous		3,838	At 5 % of above
	Total		**80,598**	

ANNEXURE- 2.6			
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES			
ESTIMATES OF ANNUAL SALES EXPENSES			
S.No.	**Item**	**Amount**	**Remarks**
		RO	
1	Salaries	18,480	See Annexure 2.3
2	Advertisement	-	Included in COS
3	Business Promotion	-	Included in COS
	Total	**18,480**	

ANNEXURE- 2.7						
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES						
DEPRECIATION CALCULATIONS						
S .No	**Item**	**Cost**	**Rate**	**S.V.**	**Amount**	**Renewals**
			(%)	**RO**	**RO**	
A	**FIXED ASSETS**					
1	Land for Plant Site	30,000	-	-	-	Nil
2	Building etc.	288,000	5	144,000	14,400	Nil
3	Plant & Machinery	157,000	10	-	15,700	Year 11
4	Technical Know-How	-	10	-	-	Nil
5	Vehicles and Int. Transp.	36,000	25	18,000	9,000	Years 5, 9
6	Furniture & Office Equip.	27,000	20	-	5,400	Years 6, 11
7	Contingency & Escalation	169,000	10	-	16,900	Nil
8	**Sub Total**	**707,000**		**162,000**	**61,400**	
B	**PRELIM &PRE OPE: EXP**	169,000	100	0	**169,000**	Nil
C	**WORKING CAPITAL**					
1	Working Capital	494,208	0	494,208	-	
D	**TOTAL**			**656,208**	**230,400**	
	Less Balance Loan			**-**		
E	**SALVAGE VALUE**			**656,208**		
	Note: S.V. = Salvage Value at the end of 10th year.					

ANNEXURE- 2.8

EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES

LOAN & INTEREST CALCULATIONS

Details - Institutional Loan																					
No. of period (No. of period equivalent to 6 month time horizon)	**18**																				
Moratorium (No. of period equivalent to 6 month time horizon)	**2**																				
Interest rate (%)	**6%**																				
Payment No.----->		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year----->		**1**		**2**		**3**		**4**		**5**		**6**		**7**		**8**		**9**		**10**	
Principal		445	445	445	417	389	362	334	306	278	250	223	195	167	139	111	83	56	28	0	0
Interest		13	13	13	13	12	11	10	9	8	8	7	6	5	4	3	3	2	1	0	0
Repayment		0	0	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28		
Details - Bank Loan - WC Requirement																					
No. of period (No. of period equ	**20**																				
Moratorium (No. of period equi	**2**																				
Interest rate (%)	**6%**																				
Payment No.----->		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year----->		**1**		**2**		**3**		**4**		**5**		**6**		**7**		**8**		**9**		**10**	
Principal		222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222	222
Interest		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Repayment		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ANNEXURE- 3												
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES												
ESTIMATED WORKING RESULTS												
	Year of Operation	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
	Capacity Utilisation	54%	67%	80%	82%	84%	87%	87%	87%	87%	87%	
No	**Item**	**In RO 000**										**Remarks**
1	**Operating Cost**	1,131	1,339	1,510	1,555	1,601	1,609	1,615	1,622	1,628	1,635	Ref Annexure 2
2	Total Sales Realisation	1,234	1,501	1,719	1,771	1,825	1,825	1,825	1,825	1,825	1,825	Sum of (2a+2b)
3	**Profit before Int & dep**	**103**	**162**	**209**	**216**	**224**	**216**	**210**	**203**	**197**	**190**	Sum of (2-1)
4	Depreciation	61	61	61	61	61	61	61	61	61	61	Ref Annexure 2.7
5	Finance Cost	40	39	36	33	29	26	22	19	17	13	Ref Annexure 2.8
6	**Operating profit**	**1**	**62**	**112**	**122**	**134**	**129**	**126**	**123**	**119**	**115**	Sum of (3 - 4 - 5)
7	Other income if any											
8	Prelim Expenses written off	169	0	0	0	0	0	0	0	0	0	Ref Annexure 2.7
9	Profit/Loss before tax	-168	62	112	122	134	129	126	123	119	115	Sum of (6 - 7 - 8)
10	Income Tax	0	0	0	0	0	19	19	18	18	17	15% of profit
11	**Profit after tax**	**-168**	**62**	**112**	**122**	**134**	**110**	**107**	**104**	**101**	**98**	
12	Statutory reserve	0	6	11	12	13	11	11	10	10	10	
13	Profit for appropriation	0	56	100	110	120	99	96	94	91	88	
14	Dividend	0	0	0	0	0	0	0	0	0	0	
15	General reserve	0	56	100	110	120	99	96	94	91	88	Difference (13) - (14)
16	**Net cash accruals**	**63**	**123**	**173**	**184**	**195**	**171**	**169**	**166**	**162**	**159**	

ANNEXURE- 3.1							
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES							
ESTIMATES OF SALES REALISATION							
		Total sales					
S. No	**Product**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	
1	**EPS Sheets**						
	Total sales (tons)	131	138	142	146	151	
	Realization/Ton (RO)	2,200	2,200	2,200	2,200	2,200	
	Sales in RO	288,200	303,600	312,400	321,200	332,200	
2	**Fish Box**						
	Total sales (tons)	241	302	358	369	380	

ANNEXURE- 4													
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES													
PROJECTED CASH FLOW STATEMENT													
	Year of Operation	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
No	**Item**	**In RO '000**											**Remarks**
A	**CASH INFLOW**												
1	Equity	444	0	0	0	0	0	0	0	0	0	0	Ref Annexure 1
2	Profit bef tax & int		-128	101	147	155	163	155	149	142	135	128	Ref Annexure 3
3	Depreciation	0	61	61	61	61	61	61	61	61	61	61	Ref Annexure 2.7
4	Prel exp written off		169	0	0	0	0	0	0	0	0	0	Ref Annexure 2.7
5	Increase in Other term loan	0	0	0	0	0	0	0	0	0	0	0	Ref Annexure 1
6	Increase in Bank Term Loan	445	0	0	0	0	0	0	0	0	0	0	Ref Annexure 1
7	Increase in W C loan	222	0	0	0	0	0	0	0	0	0	0	Ref Annexure 1
8	Other income	0											Ref Annexure 3
9	**Sub Total**	**1,111**	**103**	**162**	**209**	**216**	**224**	**216**	**210**	**203**	**197**	**190**	Sum of A1 to A8
B	**CASH OUTFLOW**												
1	Capital Project expenditure	572	0	0	0	0	36	27	0	0	36	0	Ref Annexure 1& 2.7
2	Other normal cap exp	169											Ref Annexure 1& 2.7
3	Increase in Working Cap:	370	61	51	0	0	0	0	0	0	0	0	Ref Annexure 1.7
4	Decrease in Bank Loan	0	0	56	56	56	56	56	56	56	56	0	Ref Annexure 2.8
7	Interest on term loans		27	26	23	19	16	13	9	6	3	0	Ref Annexure 2.8
8	Interest on work cap loan		13	13	13	13	13	13	13	13	13	13	Ref Annexure 2.8
9	Dividend	0	0	0	0	0	0	0	0	0	0	0	Provision
10	**Sub Total**	**1,111**	**101**	**145**	**91**	**88**	**121**	**128**	**97**	**93**	**126**	**31**	Sum of B1 to B10
	OPENING BALANCE	0	0	2	19	136	264	368	456	569	679	750	
C	**SURPLUS**	**0**	**2**	**17**	**117**	**128**	**103**	**88**	**113**	**110**	**71**	**159**	Difference(A9)-(B10)
D	**CLOSING BALANCE**	**0**	**2**	**19**	**136**	**264**	**368**	**456**	**569**	**679**	**750**	**909**	

ANNEXURE- 5													
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES													
INTERNAL RATE OF RETURN ON TOTAL CAPITAL													
	Year of Operation		1	2	3	4	5	6	7	8	9	10	
No	Item	In RO '000											Remarks
A	CASH INFLOW												
1	Net Profit bef. Tax		-168	62	112	122	134	129	126	123	119	115	Refer Annexure - 3
2	Depreciation	0	61	61	61	61	61	61	61	61	61	61	Ref Annexure 2.7
3	Prelim Exp written off		169	0	0	0	0	0	0	0	0	0	Ref Annexure 2.7
4	Finance Cost	0	40	39	36	33	29	26	22	19	17	13	Ref Annexure 2.8
5	Terminal value	0	0	0	0	0	0	0	0	0	0	1,226	Ref Annexure 2.7
	Sub Total	0	103	162	209	216	224	216	210	203	197	1,416	Sum of A1 to A5
B	CASH OUTFLOW												
1	Capital Project expenditure	572	0	0	0	0	36	27	0	0	36	0	Refer Annexure - 1
2	Other normal cap exp	169	0	0	0	0	0	0	0	0	0	0	Refer Annexure - 1
3	Working Capital	370	61	51	0	0	0	0	0	0	0	0	Refer Annexure - 1
4	Income Tax		0	0	0	0	0	19	19	18	18	17	Refer Annexure - 3.2
	Sub Total	1,111	61	51	0	0	36	46	19	18	54	17	Sum of B1 to B4
C	**NET CASHFLOW (AT)**	**-1,111**	**42**	**112**	**209**	**216**	**188**	**170**	**191**	**185**	**143**	**1,398**	
D	**NETCASH FLOW(PT)**	**-1,111**	**42**	**112**	**209**	**216**	**188**	**189**	**210**	**203**	**161**	**1,416**	
E	**INTERNAL RATE OF RETURN ON TOTAL INVESTMENT**										**14.29%**		

ANNEXURE- 6													
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES													
INTERNAL RATE OF RETURN ON EQUITY CAPITAL (AFTER TAX)													
	Year of Operation	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
No	**Item**	**In RO '000**											**Remarks**
A	**CASH INFLOW**												
1	Net Profit before Tax	0	-168	62	112	122	134	129	126	123	119	115	Refer Annexure- 3
2	Depreciation	0	61	61	61	61	61	61	61	61	61	61	Refer Annexure - 2.7
3	Prelim Exp written off	0	169	0	0	0	0	0	0	0	0	0	Refer Annexure - 2.7
4	Terminal value	0	0	0	0	0	0	0	0	0	0	1226	Refer Annexure - 2.7
5	Sub Total	0	63	123	173	184	195	190	187	184	180	1402	Sum of A1 to A4
B	**CASH OUTFLOW**												
1	Equity	444	0	0	0	0	0	0	0	0	0	0	Refer Annexure - 1
2	Fixed Assets	0	0	0	0	0	36	27	0	0	36	0	Refer Annexure - 1
3	Working Capital	0	61	51	0	0	0	0	0	0	0	0	Refer Annexure - 1
4	Loan Instalment	0	0	56	56	56	56	56	56	56	56	0	Refer Annexure - 2.8
5	Income Tax	0	0	0	0	0	0	19	19	18	18	17	Refer Annexure - 3.1
6	Sub Total	444	61	106	56	56	92	102	75	74	109	17	Sum of A1 to A5
C	**NET CASHFLOW**	**-444**	**2**	**17**	**117**	**128**	**103**	**88**	**113**	**110**	**71**	**1385**	
D	**INTERNAL RATE OF RETURN ON EQUITY INVESTMENT**								**22.32%**				

ANNEXURE- 7

EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES

PROJECTED BALANCE SHEET

	Year of Operation		1	2	3	4	5	6	7	8	9	10	
No	**Item**	**In RO '000**											**Remarks**
A	**ASSETS EMPLOYED**												
1	Fixed Assets												
a	Gross Fixed Assets	572	572	572	572	572	608	635	635	635	671	671	Refer Annexure - 2.7
b	Preliminary expenses	169	0	0	0	0	0	0	0	0	0	0	Refer Annexure- 2.7
c	Acc. Depreciation	0	61	123	184	246	307	368	430	491	553	614	Refer Annexure - 2.7
d	Net Fixed Assets	741	511	449	388	326	301	267	205	144	118	57	
2	Current Assets												
a	Cash	0	2	19	136	264	368	456	569	679	750	909	Refer Annexure - 4
b	Other Cur. Assets	370	431	482	482	482	482	482	482	482	482	482	Refer Annexure - 1.7
c	Total Cur. Assets	370	433	500	618	746	849	938	1,051	1,161	1,232	1,391	
3	Less: Cur. Liabilities	0	0	0	0	0	0	0	0	0	0	0	
		1,111	**943**	**950**	**1,006**	**1,072**	**1,150**	**1,204**	**1,256**	**1,305**	**1,350**	**1,448**	
B	**FINANCED BY**												
1	Equity	444	444	444	444	444	444	444	444	444	444	444	Refer Annexure - 1
2	Statutory reserve		0	6	17	30	43	54	65	75	85	95	
3	General reserves	0	-168	-112	-11	99	219	318	414	508	599	687	Cu.NP-Cu.Dividend
4	Other term loan	0	0	0	0	0	0	0	0	0	0	0	Refer Annexure - 2.8
5	Bank Finance	445	445	389	334	278	223	167	111	56	0	0	Refer Annexure - 2.8
6	Bank Borrowings (WC	222	222	222	222	222	222	222	222	222	222	222	Refer Annexure - 2.8
		1,111	**943**	**950**	**1,006**	**1,072**	**1,150**	**1,204**	**1,256**	**1,305**	**1,350**	**1,448**	

ANNEXURE- 8											
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES											
RATIO ANALYSIS											
	Years of Operation	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A	**COST RATIOS**										
1	Raw Material / Total Sales	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%
2	Utilities / Total Sales	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
3	Factory wages / Total Sales	8%	7%	6%	6%	6%	6%	6%	7%	7%	7%
4	**Prime Cost / Total Sales**	74%	73%	72%	72%	72%	72%	72%	73%	73%	73%
5	Factory exp. / Total Sales	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
6	**Factory Cost / Total Sales**	77%	75%	75%	75%	75%	75%	75%	75%	76%	76%
7	Administrative exp. / Total Sales	7%	5%	5%	5%	5%	5%	5%	5%	5%	5%
8	Selling exp. / Total Sales	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
9	Finance Cost / Total Sales	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%
10	Non-Cash exp. /Total Sales	19%	4%	4%	3%	3%	3%	3%	3%	3%	3%
11	**Total Cost / Sales**	114%	96%	94%	93%	93%	93%	93%	93%	93%	94%
B	**PROFITABILITY RATIOS**										
1	PBDIT / Sales	8%	11%	12%	12%	12%	12%	12%	11%	11%	10%
2	Operating profit / Sales	0%	4%	6%	7%	7%	7%	7%	7%	7%	6%

ANNEXURE- 9				
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES				
BREAK EVEN ANALYSIS				
S.No.	**Item**	**Year 1**	**Year 6**	**Remarks**
		In RO '000		
A	**FIXED COST**			
1	Production Wages	98	114	Refer Annexure - 2
2	Factory Overhads	7	12	Refer Annexure - 2
3	Misc. Factory Exp.	23	33	Refer Annexure - 2
4	Admin. Expenses	81	90	Refer Annexure - 2
5	Sales Expenses	105	149	Refer Annexure - 2
6	Depreciation	61	61	Refer Annexure - 2
7	Prelim. Expenses written off	169	0	Refer Annexure - 2
8	Financing Cost	40	26	Refer Annexure - 2
9	Income Tax	0	19	Refer Annexure - 2
10	Sub Total	585	506	
B	**VARIABLE COST**			
1	Raw materials	790	1168	Refer Annexure - 2
2	Utilities	22	36	Refer Annexure - 2
3	Misc. Expenses	0	0	
4	Sub Total	812	1204	
C	**SALES**	1234	1825	Refer Annexure - 3
D	**CONTRIBUTION**	422	621	Difference C - B
		138.5	81.4	As % of Production (A/D)
E	**BREAK EVEN POINT**	74.2	70.7	As % of Plant Capacity (E/Cap. Util for Year 6)
		83.9	71.5	As % of Production (A-A6-A7)/D)
F	**CASH BEP**	45.0	62.1	As % of Plant Capacity (F/Cap. Util for Year 6)

ANNEXURE- 10					
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES					
SENSITIVITY ANALYSIS (IRR FOR 10 YEARS)					
S. No.	**Item**	**Projection**	**Change in One**		
		No Change	**Variable at a Time**		
A	**VARIABLE**		***Volume***	***R. M***	***Sales***
			in Nos.	***Cost***	***Value***
B	**PESSIMISTIC**				
	Change		**-10%**	**10%**	**-10%**
C	**I R R - PESSIMISTIC PROJECTION**				
1	**I R R on Investment (%)**	14.29	9.60	5.39	0.22
2	**I R R on Equity (%)**	22.32	14.11	7.31	-0.32

ANNEXURE 11												
EPS SHEETS, FISH BOXES & VEGETABLE & FRUIT BOXES												
Years of Operation		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Remarks**
Item	**In RO '000**											
Profit after tax		-168	62	112	122	134	110	107	104	101	98	
Depreciation		61	61	61	61	61	61	61	61	61	61	
Prelimnery exp. Written off		169	0	0	0	0	0	0	0	0	0	
Interest		40	39	36	33	29	26	22	19	17	13	
Total		103	162	209	216	224	197	191	185	179	173	
Annual repayment		0	56	56	56	56	56	56	56	56	0	
Interest		40	39	36	33	29	26	22	19	17	13	
Total		40	95	91	88	85	81	78	75	72	13	
D.S.C.R		2.6	1.7	2.3	2.5	2.6	2.4	2.4	2.5	2.5	13.0	
WT. AVERAGE D.S.C.R	**2.36**											