

Manpower

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

The Omanisation percentage will be a minimum of 50% given the laborers account for 22 employees of the total 42 workforce.

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

DIRECT COST MANPWER REQUIREMENTS						
Si.No	Position	Numbers	Salary Per Month	Salary Per Year	Welfare Expenses @15%	Grand Total
1	Plant Manager	2	1,400.00	33,600.00	5,040.00	38,640.00
2	Manufacturing area for Processing line	12	200.00	28,800.00	4,320.00	33,120.00
3	Manufacturing area for Modifying System	4	200.00	9,600.00	1,440.00	11,040.00
4	Manufacturing area for Water Cooling and Thermal Oil System	2	200.00	4,800.00	720.00	5,520.00
5	Storage Area	4	200.00	9,600.00	1,440.00	11,040.00
6	Maintenance Area	4	450.00	21,600.00	3,240.00	24,840.00
7	Quality Control laboratory	4	450.00	21,600.00	3,240.00	24,840.00
	**number of employees for (2 shift suggested)			-	-	-
Total		32	3,100.00	72,000.00	10,800.00	149,040.00

INDIRECT COST MANPWER REQUIREMENTS						
Si.No	Position	Numbers	Salary Per Month	Salary Per Year	Welfare Expenses @15%	Grand Total
1	Admin Supervisor	2	600.00	14,400.00	2,160.00	16,560.00
2	Purchase& sales Departments	3	450.00	16,200.00	2,430.00	18,630.00
3	Drivers Pick Up	4	400.00	19,200.00	2,880.00	22,080.00
4	PRO	1	400.00	4,800.00	720.00	5,520.00
Total		10	1,850.00	49,800.00	7,470.00	62,790.00

4.3. Profit & Loss

Particulars	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Filling Capacity	50%	55%	60%	65%	70%	75%	80%	85%	90%	90%
Grand Total Revenue OMR	1,820,003	2,002,004	2,184,004	2,366,004	2,548,005	2,730,005	2,912,005	3,094,006	3,276,006	3,276,006
Cost of Revenue (Direct Cost)										
Raw Material	1,149,052	1,263,957	1,378,863	1,493,768	1,608,673	1,723,578	1,838,483	1,953,389	2,068,294	2,068,294
Manpower	149,040	153,511	158,117	162,860	167,746	172,778	177,962	183,300	188,799	194,463
Utilities	27,889	30,678	33,563	36,555	39,664	42,901	46,280	49,814	53,519	57,413
Maintenance Vehicles	18,200	20,020	21,840	23,660	25,480	27,300	29,120	30,940	32,760	32,760
Transportation	20,100	20,502	20,912	21,330	21,757	22,192	22,636	23,089	23,550	24,021
Waste	182,000	200,200	218,400	236,600	254,800	273,000	291,201	309,401	327,601	327,601
Total Direct Cost	1,546,281	1,688,869	1,831,695	1,974,773	2,118,120	2,261,750	2,405,681	2,549,932	2,694,523	2,704,552
Gross Profit	273,722	313,135	352,309	391,231	429,885	468,255	506,324	544,074	581,483	571,454
Indirect Expenses										
Depreciation	(183,701)	(183,701)	(183,701)	(183,701)	(183,701)	(142,501)	(142,501)	(141,383)	(141,383)	(141,383)
Manpower Indirect	(62,790)	(64,674)	(66,614)	(68,612)	(70,671)	(72,791)	(74,975)	(77,224)	(79,540)	(81,927)
Marketing, Advertising & Promotion	(25,000)	(26,250)	(27,500)	(28,750)	(30,000)	(31,250)	(32,500)	(33,750)	(35,000)	(36,250)
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	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)
Audit Charges	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)
Insurance	(750)	(788)	(827)	(868)	(912)	(957)	(1,005)	(1,055)	(1,108)	(1,163)
Pre-Operating Expenses	(38,200)									
Total Expenses	(316,091)	(281,062)	(284,291)	(287,581)	(290,933)	(253,869)	(257,350)	(259,782)	(263,402)	(267,093)
PBIT/PBT										
PBIT	(42,368)	32,073	68,018	103,650	138,952	214,387	248,974	284,292	318,081	304,361
Finance Interest Main Loan	(51,884)	(41,507)	(31,130)	(20,753)	(10,377)	-	-	-	-	-
Finance Interest O/Draft W.Capital	(15,748)	(12,598)	(9,449)	(6,299)	(3,150)	-	-	-	-	-
PBT	(110,000)	(9,434)	36,888	82,896	128,575	214,387	248,974	284,292	318,081	304,361
Income Tax @ 15%	-	-	(5,533)	(12,434)	(19,286)	(32,158)	(37,346)	(42,644)	(47,712)	(45,654)
PAT	(110,000)	(9,434)	31,355	70,462	109,289	182,229	211,628	241,648	270,369	258,707

The projections reveal the project will incur a net loss of 110,000 /RO in the first year of operation and a loss of 9,434 OMR in the 2nd year with a capacity utilisation of 50% in year 1 and 55% in year 2. The profitability improves in the 3rd year of operation with a net profit of 31,555 RO and a gradual increase in

capacities to 60%. The net profit is predicted to increase in excess of 70,000/RO in the 4th year and reaching in excess of 200,000 /RO in the 7th year and in the 7th year and onwards the net profit will average in the region of 250,000 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 %	50%	55%	60%	65%	70%	75%	80%	85%	90%	90%
Total Production Output Qty sqm	3,500,006	3,850,007	4,200,008	4,550,008	4,900,009	5,250,010	5,600,010	5,950,011	6,300,012	6,300,012
a) High End	20% of Production Capacity									
Production output sq/m	700,001	770,001	840,002	910,002	980,002	1,050,002	1,120,002	1,190,002	1,260,002	1,260,002
Total No. of rolls	70,000	77,000	84,000	91,000	98,000	105,000	112,000	119,000	126,000	126,000
Revenue OMR	700,001	770,001	840,002	910,002	980,002	1,050,002	1,120,002	1,190,002	1,260,002	1,260,002
b) Low End	80% of Production Capacity									
Production Output Kg	2,800,005.1 2	3,080,005.6 3	3,360,006.1 4	3,640,006.6 6	3,920,007.1 7	4,200,007.6 8	4,480,008.1 9	4,760,008.7 0	5,040,009.2 2	5,040,009.2 2
Total No. of rolls	280,001	308,001	336,001	364,001	392,001	420,001	448,001	476,001	504,001	504,001
Revenue OMR	1,120,002	1,232,002	1,344,002	1,456,003	1,568,003	1,680,003	1,792,003	1,904,003	2,016,004	2,016,004
Grand Total Revenue OMR	1,820,003	2,002,004	2,184,004	2,366,004	2,548,005	2,730,005	2,912,005	3,094,006	3,276,006	3,276,006

The capacity utilisation will start with 50% in 1ST year of operation and is forecasted to increase gradually by 10% y-o-Y, 1st year output amounts to a total of 3.5 million sq/m and reaching a capacity of 6.3 million sq/m in the 9th year of operation. A CAGR of 10% is assumed in line with CAGR of construction sector of Oman which was 10.4%

The high end bitumen rolls account for 20% of the total production output; this production output in year 1 will amount to 700,000 sq/m with 70,000 rolls and due to capacity increase no of rolls reach 126,000 rolls in year 9.

The low end bitumen rolls account for 80% of the total production output; this production output in year 1 will amount to 2.8 million sq/m with 280,000 rolls and due to capacity increase no of rolls reach 504,000 rolls in year 9.

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		(110,000)	(9,434)	36,888	82,896	128,575	214,387	248,974	284,292	318,081	304,361
Depreciation		183,701	183,701	183,701	183,701	183,701	142,501	142,501	141,383	141,383	141,383
Interest on Loan ODB		51,884	41,507	31,130	20,753	10,377	-	-	-	-	-
W. Capital Interest O/draft		15,748	12,598	9,449	6,299	3,150	-	-	-	-	-
Cash Flow Operating Activity	-	141,332	228,372	261,167	293,649	325,802	356,887	391,475	425,675	459,464	445,744
Investing Activity											
Purchasing of Fixed Assets	(920,365)										
Finance Activity											
Owners Contribution	494,129										
Debt Loan	741,194										
ODB Loan Payment											
Loan Payment		(148,239)	(148,239)	(148,239)	(148,239)	(148,239)	-	-	-	-	-
Interest		(51,884)	(41,507)	(31,130)	(20,753)	(10,377)	-	-	-	-	-
Commercial Loan WC											
Loan Payment		(62,992)	(62,992)	(62,992)	(62,992)	(62,992)	-	-	-	-	-
Interest		(15,748)	(12,598)	(9,449)	(6,299)	(3,150)	-	-	-	-	-
Tax paid		-	-	-	(5,533)	(12,434)	(19,286)	(32,158)	(37,346)	(42,644)	(47,712)
Sub Total	1,235,323	(278,862)	(265,335)	(251,809)	(243,816)	(237,191)	(19,286)	(32,158)	(37,346)	(42,644)	(47,712)
Net Cash Flow	314,958	(137,530)	(36,963)	9,358	49,833	88,611	337,601	359,317	388,328	416,820	398,031
Open Cash equivelants	-	314,958	177,428	140,465	149,823	199,656	288,267	625,868	985,185	1,373,513	1,790,334
Closing Cash Equivelants	314,958	177,428	140,465	149,823	199,656	288,267	625,868	985,185	1,373,513	1,790,334	2,188,365

The cash flow is showing a positive of 314,958 /RO in year 1 and cash flow reduces to 177,428 OMR; year 2, cash flow increase significantly in year 7 in excess of more than 625,000 RO and reaching more than 1.7 million RO in year 10.

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 Equivalents		177,428	140,465	149,823	199,656	288,267	625,868	985,185	1,373,513	1,790,334	2,188,365
Working capital		314,958	314,958	314,958	314,958	314,958	314,958	314,958	314,958	314,958	314,958
Sub Total		492,386	455,422	464,781	514,614	603,225	940,826	1,300,143	1,688,471	2,105,291	2,503,323
Non-Current Assets											
Fixed Assets		736,665	552,964	369,264	185,563	1,863	(140,638)	(283,139)	(424,522)	(565,905)	(707,288)
Sub Total		736,665	552,964	369,264	185,563	1,863	(140,638)	(283,139)	(424,522)	(565,905)	(707,288)
Total Assets		1,229,050	1,008,386	834,044	700,177	605,088	800,188	1,017,004	1,263,950	1,539,387	1,796,035
Liabilities											
Current liabilities											
Loan (Short Term) ODB		148,239	148,239	148,239	148,239				-	-	-
Loan Short Term WC ODB		62,992	62,992	62,992	62,992				-	-	-
Provision for taxation		-	-	5,533	12,434	19,286	32,158	37,346	42,644	47,712	45,654
Total current liabilities		211,230	211,230	216,763	223,665	19,286	32,158	37,346	42,644	47,712	45,654
Loan Long Term ODB		444,716	296,477	148,239	-	-	-	-	-	-	-
Long term ODB w.c.loan		188,975	125,983	62,992	-	-	-	-	-	-	-
Total current liabilities		633,691	422,461	211,230	-	-	-	-	-	-	-
Shareholders											
Shareholders Capital	494,129	494,129	494,129	494,129	494,129	494,129	494,129	494,129	494,129	494,129	494,129
Legal Reserve											
Profit & Loss Account		(110,000)	(119,433)	(88,079)	(17,617)	91,672	273,901	485,529	727,177	997,546	1,256,252
Total equity		384,129	374,696	406,050	476,512	585,801	768,030	979,658	1,221,306	1,491,675	1,750,381
Total Liabilities		1,229,050	1,008,386	834,044	700,177	605,088	800,188	1,017,004	1,263,950	1,539,387	1,796,035

The initial 4 years' current ratio is adverse due to short term loan and the 5th year onwards it recovers and becomes positive.

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)	(179,171)	(137,530)	(36,963)	9,358	49,833	88,611	337,601	359,317	388,328	416,820	398,031
IRR	28.80%										
NPV @ EQUITY	327,689										
Pay Back period											

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)	(1,235,323)	62,593	152,782	188,727	218,826	247,227	337,601	359,317	388,328	416,820	398,031
IRR	13.86%										
NPV @ WACC	238,213										
Pay Back period	6	Years	1	Months							

Cost		
Owners' Equity		15
Finance		7%
Total		22%
Weighted Average Cost	7.00%	

The IRR on total investment is resulting in **13.86%**,

NPV results in 238,213 /RO & payback period is 6 years and 1 month.

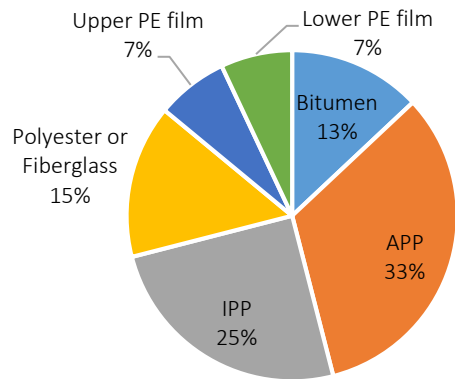
4.8. Depreciation

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	253,715	5.00	20%	50,743	50,743	50,743	50,743	50,743	50,743	50,743	50,743	50,743	50,743
1b	building	453,200	20.00	20%	90,640	90,640	90,640	90,640	90,640	90,640	90,640	90,640	90,640	90,640
1c	Vehicles	206,000	5	20%	41,200	41,200	41,200	41,200	41,200					
1d	Office Furniture & Equipment	7,450	6.67	15%	1,118	1,118	1,118	1,118	1,118	1,118	1,118			
Total		920,365	Total Depreciation		183,701	183,701	183,701	183,701	183,701	142,501	142,501	141,383	141,383	141,383
De-Valuation					736,665	552,964	369,264	185,563	1,863	(140,638)	(283,139)	(424,522)	(565,905)	(707,288)

4.9. Raw Material Cost

The raw material cost is distributed between APP at 33% of total cost followed by IPP accounting for 25% and the remaining is distributed between Bitumen, Polyester or Fiberglass, Upper PE film & Lower PE film.

Modified Bitumen Waterproofing Membrane Production Line with 7,000,000 M2/year (2 Shifts)														
Si. No	Description	Distribution %	Cost per M2/USD	Cost per M2/OMR	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Bitumen	%13	0.35	0.2695	120,050	132,055	144,060	156,065	168,070	180,075	192,080	204,085	216,090	216,090
2	APP	%33	0.9	0.693	793,801	873,182	952,562	1,031,942	1,111,322	1,190,702	1,270,082	1,349,462	1,428,843	1,428,843
3	IPP	%25	0.7	0.539	-	-	-	-	-	-	-	-	-	-
5	Polyester or Fiberglass	%15	0.4	0.308	156,800	172,480	188,160	203,840	219,520	235,200	250,880	266,560	282,241	282,241
6	Upper PE film	%7	0.2	0.154	39,200	43,120	47,040	50,960	54,880	58,800	62,720	66,640	70,560	70,560
7	Lower PE film	%7	0.2	0.154	39,200	43,120	47,040	50,960	54,880	58,800	62,720	66,640	70,560	70,560
		100%		2.1175	1,149,052	1,263,957	1,378,863	1,493,768	1,608,673	1,723,578	1,838,483	1,953,389	2,068,294	2,068,294



4.10. Pre-Operating Expenses

Si.No	Particulars	Amount
1a	Financial Feasibility Study	10,000.00
1b	License	7,000.00
1c	Legal	20,000.00
1d	Consultancy HSE	1,200.00
Total		38,200.00

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 229,810 RO and salaries at 2 months amounting to 15,698 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	287,263.03
1b	Drivers Direct	3	15,697.50
1d	Utilities	3	6,972.21
1e	Fuel Diesel	3	5,025.00
Total			314,957.74

Working Capital Loan

Sl.No	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
1a	Loan Opening Balance	314,958	251,966	188,975	125,983	62,992
1b	Interest @ 5%	15,748	12,598	9,449	6,299	3,150
1c	Installments	62,992	62,992	62,992	62,992	62,992
1d	Closing Balance	251,966	188,975	125,983	62,992	-

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%	494,129.09
1b	Loan	60%	741,193.64
Total		100%	1,235,322.74

4.13. Loan Schedule

Sl.No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
1a	loan Opening Balance	741,194	592,955	444,716	296,477	148,239
1b	Interest @ 7%	51,884	41,507	31,130	20,753	10,377
1c	Installments	148,239	148,239	148,239	148,239	148,239
1d	Closing Balance	592,955	444,716	296,477	148,239	-

4.14. Utility Costs

Description	Cost Per Unit OMR	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	18,228	20,051	21,874	23,696	25,519	27,342	29,165	30,988	32,810	34,633
Water Cost per M3	0.003	547	602	662	728	801	881	969	1,066	1,172	1,289
Natural Gas	0.010	9,114	10,025	11,028	12,131	13,344	14,678	16,146	17,761	19,537	21,490
Total Utility Cost		27,889	30,678	33,563	36,555	39,664	42,901	46,280	49,814	53,519	57,413

Type	Unit	Omani Riyal/Bz
Electricity	KW/hour	0.016
Water	Gallon	0.003
Natural Gas	M3	0.01

Soap Plant Demand p/hour	Unit	P/Hour Unit Usage	P/Hour Cost
Electricity	KW/hour	379.75	6.08
Water	M3	60.76	0.18
Natural Gas	M3	303.8	3.04

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	Office & Warehouse	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/M2	No of Hrs/Per Shift	No of Shifts Per Day	Working Day's Per Month	Working Months Per Year	Total Raw Material Per Year M2
1519.1	8	2	24	12	7,000,012.80

Products	Product Name	Size M2	Grade	Percentage of Grade Distribution	Selling Price OMR
A	Torched - High End	10	Standard	20%	10.000
B	Torched - Low end	10	Standard	80%	4.000
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/vehicle	Transportation Fuel Cost per day OMR	Cost Per Year
1	Wheel Loader	1	300	7	7	2,100.00
2	Car Pick Up	5	300	10	50	15,000.00
	Company Vehicle	2	300	5	10	3,000.00

4.16. Conclusion

- The production capacity in the 1st year is 50% and increases to a capacity of 55% in the 2nd year , thereafter the capacity utilization increases y-o-y to reach 90% capacity utilization in the 9th year; these capacity utilizations results in the following revenues:
- 1st year revenue amounts to **1.8 million OMR**
- 2st year revenue amounts to **2.0 million OMR**
- 3rd year revenue amounts to a total of **2.1 Million OMR**
Reaching **3.2 Million OMR** in the 10th year.

The above revenue stream reveals the following net profit results:

- The 1st year net profit amounts to **(110,000) OMR**.
- 2nd year net-profit amounts to **(9,434) OMR**.
- 3rd year net-profit amounts to **31,355 OMR**.
- 4th year net-profit amounts to **70,462 OMR**.
- 5th year net profit will be in region of **109,289 OMR**.
- 10th year net profit will be in region of **258,707 OMR**

Internal Rate of Return (IRR) =**13.86 %**.

NPV = **238,213 OMR**.

Pay Back Period = **6 years 1 month**.

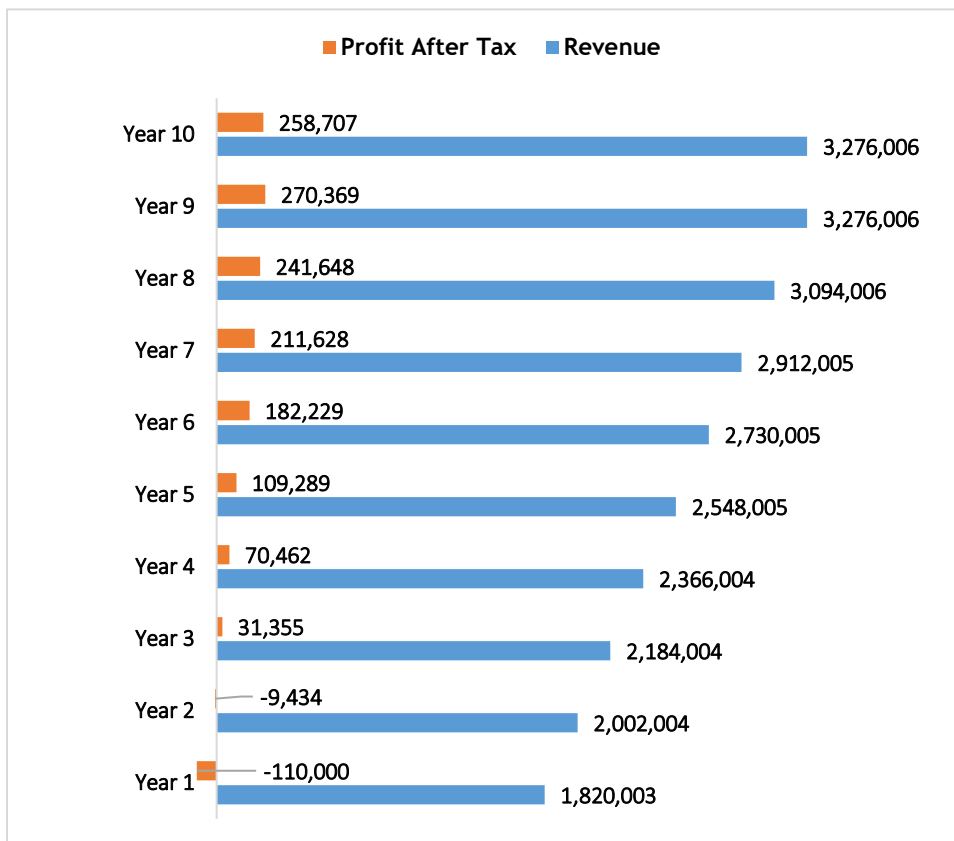


Figure 4-1: Projections Main Scenario - Revenue & Profit After Tax

Normal Case Analysis											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	13.86%	238,213	6 Years & 1 Month
Capacity	50%	55%	60%	65%	70%	75%	80%	85%	90%	90%			
Revenue	1,820,003	2,002,004	2,184,004	2,366,004	2,548,005	2,730,005	2,912,005	3,094,006	3,276,006	3,276,006			
Profit After Tax	(110,000)	(9,434)	31,355	70,462	109,289	182,229	211,628	241,648	270,369	258,707			

- The project has a medium to high viability due to mainly the raw material availability
- Bitumen (Water Proofing Membrane) has a good product range and is a necessity in terms demand quantity in the constructions industry 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 Bitumen (water proofing membrane) products to be researched & introduced.
- The local competition is none existent in Oman and provides an opportunity for this new entrant to be the first to establish.
- The net profit is negative in year 1 & year 2 but increases at relatively good levels as it reaches 1.45% in year 3, 3% in year 4, 4.3% in year 5 and reaching a maximum of 8.25% net profit in year 9.
- IRR is attractive @ 13.86% and payback is acceptable within 6 year & 1 month.

Annexure - Quotation

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**Specification and Commercial Terms of
 Modified Bitumen Waterproofing Membrane
 Production Line**

(HIM-BWM-7, 7,000,000 m²/year)



HiSuccess International
 2018-11-27

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Declaration

To:
 Attn.:

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1. Project General Introduction

1.1 Manufacturing capacity:

Annually manufacturing 7,000,000 m² of various types of modified bitumen waterproofing membrane, two shifts per day, 8 hours per shift, 300 days per year, calculated on basis of 3mm of products.

1.2 Reinforcement: Polyester mat, fiberglass tissue, jute tissue.

1.3 Polymer: SBS, APP.

1.4 Product type:

- a. PE film / PE film
- b. PE film / Embossing PE film
- c. Sand or Slate / Aluminum Foil
- d. Sand or Slate / PE Film

1.5 Thickness: 2 ~ 5mm

1.6 Linear speed: 0 ~ 40m/min

1.7 Fuel consumption: 1,100,000kcal/h, thermal efficiency ≥73%.

1.8 Compressed air: 1.5m³/min (0.7MPa)

1.9 Water consumption: 500kg per day

1.10 Installed power: 420kw

1.11 Power source: AC 380V, 3 phase, 50Hz / AC 220V

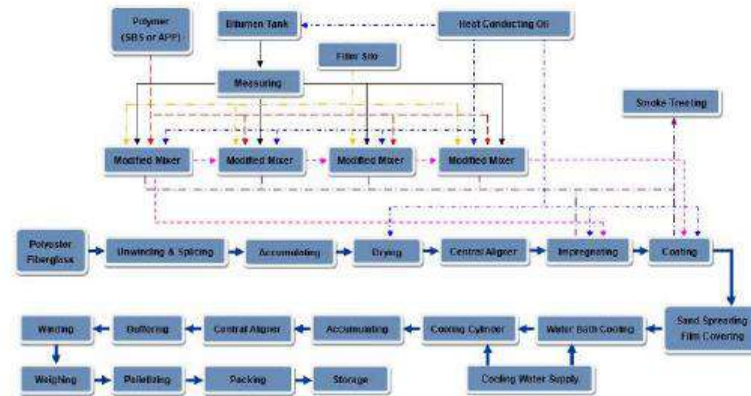
1.12 Required area: L 60 × W 8 × H 10m

1.13 Outside area: 1000m²



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2. Layout





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3. Specification

3.1 Waterproofing Membrane Processing System

3.1.1 Reinforcement unwinding device

It adopts double working position structure with pneumatic lifting of reinforcement.

a. Frame	1 set
b. Air cylinder	2 units
c. Air expansion shaft	2 sets
d. Pneumatic brake	1 set
e. Manual central aligner	1 set

3.1.2 Splicing device

It adopts thermal oil heating mode. The upper pressing plate is controlled by manual.

a. Frame	1 set
b. Upper pressing plate	1 set
c. Lower pressing plate	1 set
d. Air cylinder	2 units
e. Guiding roller (Φ125)	3 sets
f. Air pipe and metal hose	1 set

3.1.3 Reinforcement accumulator

Capacity is 65m. The frame adopts 200×150mm square tube.

a. Guiding roller (Φ125)	15 sets
b. Transition guiding rollers (Φ125)	2 sets
c. Lift frame	1 set
d. Weight box for balance	1 unit
e. Protection mesh	1 set
f. Electric control box	1 set

3.1.4 Reinforcement drying device

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a. Drum-type heater	2 sets
b. Intension roller	1 set
c. Guiding roller (Φ125)	2 units
d. Haul-off roller (Φ190)	1 unit

3.1.5 Tension control device 1 set

3.1.6 Central aligner for reinforcement

a. Frame	1 set
b. Automatic photoelectric control	1 set
c. Locating squeezing roller	1 set
d. Permanent magnet motor	1 unit
e. Electric box	1 set

3.1.7 Impregnating device

The impregnating device is warmed by thermal oil in the jacket.

a. Impregnating roller (Φ130)	1 set
b. Haul-off roller (Φ600)	1 set
c. Squeezing rollers (Φ190)	3 sets
d. Smoke collecting cover	1 set

3.1.8 Coating device

The coating device is warmed by heat conducting oil in the jacket. The compound temperature in the coating device and the membrane thickness can be shown on the screen.

a. Squeezing roller (chroming treated, Φ190)	2 units
b. Swing roller (Φ60)	1 set
c. Bitumen scraper	1 set
d. Impregnating roller (Φ130)	2 sets
e. Coating roller (Φ485)	1 set
f. Top smoke cover	1 set

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3.1.9 Sand spreading and recycling device

a. Sand storage hopper	1 unit
b. Sand spreading hopper	1 unit
c. Sand spreading roller (Φ156)	1 unit
d. Sand quantity adjusting device	1 set
e. Bucket elevator	1 unit
f. Screw conveyor	1 unit

3.1.10 Film covering device

a. Film unwinding device	2 sets
b. Manual central aligner	2 sets
c. Up film covering device	1 unit
d. Down film covering device	1 unit
e. Down film sending trolley	1 unit
f. Overlap film device	1 set
g. Electric hoister (0.5ton)	1 unit
h. Water spraying device	1 set

3.1.11 Suspension cooling device

Cooling bath is 10m. The material of water bath is stainless steel.

a. Stainless cooling roller (Φ76)	17 sets
b. Water level adjusting plate	1 set

3.1.12 Embossing device

a. Flat roller	1 unit
b. Embossing roller	1 unit
c. Pneumatic adjusting device	1 set

3.1.13 Air blowing device

a. Blower	1 unit
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b. Pipeline	1 set
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3.1.14 Cylinder cooling device

a. Stainless steel cooling roller (Φ800)	19 sets
b. Cooling roller (Φ295)	1 set
c. Water receiving bath (20m)	1 set

3.1.15 Online thickness detecting device

a. Straight sensor	1 set
b. Straight bearing	1 set
c. Photoelectric signal feedback device	2 sets
d. Pneumatic pressing roller (Φ130)	1 unit

3.1.16 Finished product accumulator

Capacity is 65m. The frame adopts 200×150mm square tube.

a. Guiding roller (Φ190)	17 sets
b. Lift frame	1 set
c. Weight box for balance	1 set
d. Protection mesh	1 set
e. Electric control box	1 set

3.1.17 Central aligner for finished product

a. Frame	1 set
b. Automatic photoelectric control	1 set
c. Locating squeezing roller	1 set
d. Permanent magnet motor	1 unit
e. Electric box	1 set

3.1.18 3-roller haul-off device

The frame adopts 200×150mm square tube.

a. Initiative roller (Φ240)	2 sets
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b. Passive roller (Φ190)	1 set
3.1.19 Jumping device	
a. Jumping roller (Φ190)	2 set
b. Movable frame	1 set
c. Photoelectric control	1 set
3.1.20 Automatic winding machine	
Capacity: 4 rolls/min.	
a. Haul-off roller (Φ240)	2 sets
b. Cylinder-type pressing roller device	1 set
c. Support roller	1 set
d. Length-measuring device	1 set
e. Automatic locating device	1 set
f. Automatic tape-wrapping device	3 sets
g. Roller stand conveyor with scale	1 set
h. PLC system with HMI	1 set
3.1.21 Transmission system	1 set
3.1.22 Electric control system	1 set
a. PLC system with HMI	1 set
b. Power cable with cable tray	1 set
c. Other components	1 set
3.1.23 Others	
a. Ladder and railing	1 set
b. Operating table	1 set
c. Walkway	1 set
d. Aluminum isolation frame	1 set

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3.2 Bitumen Modifying System

3.2.1 Gear pump 3 sets

3.2.2 Modified bitumen mixer 4 sets

Capacity: 10m³. The diameter of mix is Φ2150. It adopts paddle-type mixing with Φ127mm main mixing shaft. Tank body δ=8mm. Coil pipe δ=4mm.

3.2.3 Colloid mill 1 set

Capacity: 2318m³/h. Power: 75Kw.

3.2.4 Filter 1 set

3.2.5 Weighing device

a. Alloy steel weighing sensor 12 sets

b. Weighing modular base 12 sets

c. Metal hose 4 sets

d. Anti-dust cover 12 sets

3.2.6 Pipeline, valve and platform 1 set

3.2.7 Steel structure, ladder and railing 1 set

3.2.8 Electric control system 1 set

3.3 Filler Feeding System

3.3.1 Filler storage silo 1 set

Capacity: 60m³. It consists of discharger and maintenance platform.

3.3.2 Screw conveyor 2 sets

3.3.3 Manual discharging valve 1 unit

3.3.4 Pneumatic discharging valve 4 units

3.3.5 Electric control system 1 set

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3.4 Water Cooling System

3.4.1	Chilling machine	1 set
Capacity: 200,000kcal/h.		
3.4.2	Cooling tower	1 set
3.4.3	Heat exchanger	1 set
3.4.4	Water pump	4 sets
3.4.5	Water tank	1 set
Size: at least 15m ³ , prepare by buyer.		
3.4.6	Underground water pool	1 set
Size: at least 100m ³ , prepare by buyer.		
3.4.7	Pipeline and valve	1 set
3.4.8	Electric control system	1 set

3.5 Thermal Oil System

3.5.1	Thermal oil boiler	1 set
Capacity: 1,100,000kcal		
3.5.2	Burner (Italian Riello)	1 set
3.5.3	Thermal oil cycling pump	2 sets
3.5.4	Thermal oil storage tank	1 set
Capacity: 4m ³ .		
3.5.5	Pipeline and valve	1 set
3.5.6	Electric control system	1 set

3.6 Bitumen Storage System

3.6.1	Bitumen storage tank (200m ³)	2 sets
3.6.2	Bitumen unloading groove	1 set

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3.6.3	Screw pump	2 sets
3.6.4	Leveling device	2 sets
3.6.5	Pipeline and valve	1 set
3.6.6	Ladder and railing	1 set

Note:

- a) Insulation for bitumen storage tanks, valves, mixers and pipelines are not included, which should be prepared by the buyer.
- b) Compressed air system is not included, which should be prepared by the buyer.
- c) All terms will be explained by HiSuccess International Machinery Limited.
- d) The updating of the specification is not necessary to mention before.

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4. Technical Service

- 4.1 This quotation does not include fundamental construction, carriage charges, in addition the worksite construction cost and staff travel costs are also not included in this quotation.
- 4.2 After the contract is signed, the Seller would instruct the Buyer all the detail requirement of the base, water and electrical installation instruction, and so on. And the Seller would supply related installation drawings and parameters.
- 4.3 The Seller should immediately dispatch technical personnel to the Buyer's factory to instruct installation and commissioning after the production line arrives in the Buyer's factory and got the Buyer's confirmation of the preparation. Meanwhile, the subsidy for persons dispatched by the Seller during the installation and commissioning, and should be transferred by T/T before the dispatching of persons under the standard of USD100.00 per calendar day per person.
- 4.4 The Buyer will bear the expense of round-trip tickets, lodging, boarding and insurance.
- 4.5 The quality of above mentioned products meet the relative standard of P.R. CHINA.
- 4.6 The warranty period is 12 months from the commissioning finished. The damage from the incorrect operation is out of the warranty scope.

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5. Commercial Terms

5.1 Terms of Price

The total price of Modified Bitumen Waterproofing Membrane Production Line with the specification mentioned above is **USD 634,000.00 FOB Shanghai** (Say SIX HUNDRED THIRTY-FOUR THOUSAND US DOLLARS Only), according to <INCOTERMS 2010>.

No.	Item	Price (USD)
1)	Waterproofing Membrane Processing System	225,000.00
2)	Bitumen Modifying System	180,000.00
3)	Filler Feeding System	28,000.00
4)	Water Cooling System	50,000.00
5)	Thermal Oil System	58,000.00
6)	Smoke Treating System	70,000.00
7)	Installation, Commissioning, Training, Know-how	25,000.00
Total Amount		634,000.00

5.2 Delivery Time

100 days after receipt of down payment.

5.3 Terms of Payment

Deposit 30% by T/T as down payment, 65% by T/T or L/C at sight before shipment. 5% should be paid by T/T after installation and commissioning.

5.4 Quotation Period of Validity

It is valid till December 31st, 2018.

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