



Detailed Project Report ***on*** ***Egg Processing (Egg Powder)***

Under MKUY

Name of the Entrepreneur/Entity:

Address:



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1. Project Summary

1	Name of the Enterprise (as per the Illustrative List of Enterprises)	Egg processing (Egg Powder)
2	Sector (as per the Illustrative List of Enterprises)	AH&VS
3	Project Capacity ¹	20,000 eggs/day
4	Key components of the project	Processing, packaging and sales
5	Project Address (Village/Ward, Gram Pranchayat/Municipality, Block, District)	
6	Products/Output from the project	Whole egg powder
7	Total Project Cost	Rs. 1,81,95,600
8	Fixed Capital Cost	Rs. 1,54,25,600
9	Working/Recurring capital	Rs. 27,70,000
10	Bank Finance/ Self Finance	Bank Loan
11	Bank Loan Amount	Rs. 1,55,45,040
12	Promoter Contribution (min 10% in case of bank loan)	Rs. 26,50,560
13	Assumed Rate of Interest	11%
14	Subsidy Eligibility (40%, 50%)	
15	Repayment Terms (Tenure, Moratorium, Frequency, Mode of Repayment: equal principal/equal instalment)	Equal Monthly Instalment
16	Key Financial Indicators:	
	1. Average Annual Net Profit	Rs. 65,00,688
	2. Debt Service Coverage Ratio (DSCR)	2.5
	3. Internal Rate of Return	23.63%
	4. Break Even Point (BEP)/Year	3 Year 1 Month
17	Estimated employment to be generated (nos.)	25

Note: The price quoted in the DPR is indicative. Final CIS will be calculated as per the Rate in MKUY guideline.

¹ Capacity can be in terms of area or quantity



2. Project Profile

2.1 Entrepreneur/Entity Profile

1	Name of the Entrepreneur/Entity	
2	Legal status (Individual/ Group/ FPO/ FPC/ Proprietorship/ Partnership firm/ Company/ Cooperative/ Federation/ Society/ Trust)	
3	Name of Representative ² in Ease of entity	
4	Gender (Male/ Female/ Third Gender/ Not Applicable)	
5	Date of Birth of Individual/Representative of Entity	
6	Date of Incorporation/Registration of Entity	
7	Category opted for (Women/ ST/ SC/ Differently Abled/ Third gender/ Agri & Allied Graduate)	
8	Educational Qualification of Individual/Representative of Entity	
9	Passport size photograph of the Individual/ Representative of entity	
10	Local Address for Correspondence of the Individual/ Representative of entity	
11	Registered Address of Entity	
12	Main Office/Branch Address of Entity	
13	Phone no. of Individual/Representative of Entity	
14	Email Id of Individual/Representative of Entity	
15	AADHAR No. of Individual/Representative	
16	PAN of Individual/Representative of Entity, if available	
17	Farmer Id of Individual, if available	
18	Details of other Partner/Director/ President/Secretary	
19	Registration No./ CIN of the Entity ³	
20	PAN/TAN of Entity	
21	GSTIN of Entity, if available	
22	Details of experience and exposure relevant to the proposed enterprise/project (family business, work experience, e- learning/certificate courses, trainings undertaken etc.)	

² Representative should be authorized by the board/governing body of the entity.

³ Registration document:

Groups (SHG/PG/): FPO: Proprietorship firm: Registration Certificate under Shops & Establishment Act, Partnership firm: Registration Certificate from IGR of state, Company (Pvt. Ltd., Public Ltd., LLP, OPC, FPC): Certification of Incorporation, Cooperative/ Federation: Certificate of Registration from Registrar of Cooperative Societies, Society/Trust: Darpan Unique Id



2.2. Project Consultant Details

DPR prepared by:

Please provide further details of the consultant:





2.3. Concept and Scope of the Project

The egg is the most nutritious natural product. Eggs are rich in protein, vitamins and minerals. During last three decades, the poultry industry in the country has made remarkable progress and grown into an organized and highly productive industry. Dried egg powder can be stored and transported at room temperatures. It is quite stable and has long shelf life. The manufacture of egg powder is an important segment of egg consumption. There is enough scope of an egg powder manufacturing plant, with a suitable capacity. Whole egg powder is consumed in hotels, hospitals, restaurants, and military establishment etc. It is also used in bakeries and cake mix manufacture. Dried albumen is used in cake mix manufacture, maringue powder manufacture and in candy making.

Egg powder is one of the most common products in poultry industry in the country. Attempts have been made to prepare egg pudding also, but this product has not yet been accepted by the consumers, whereas demand for egg powder is increasing year after year.

Manufacturing process

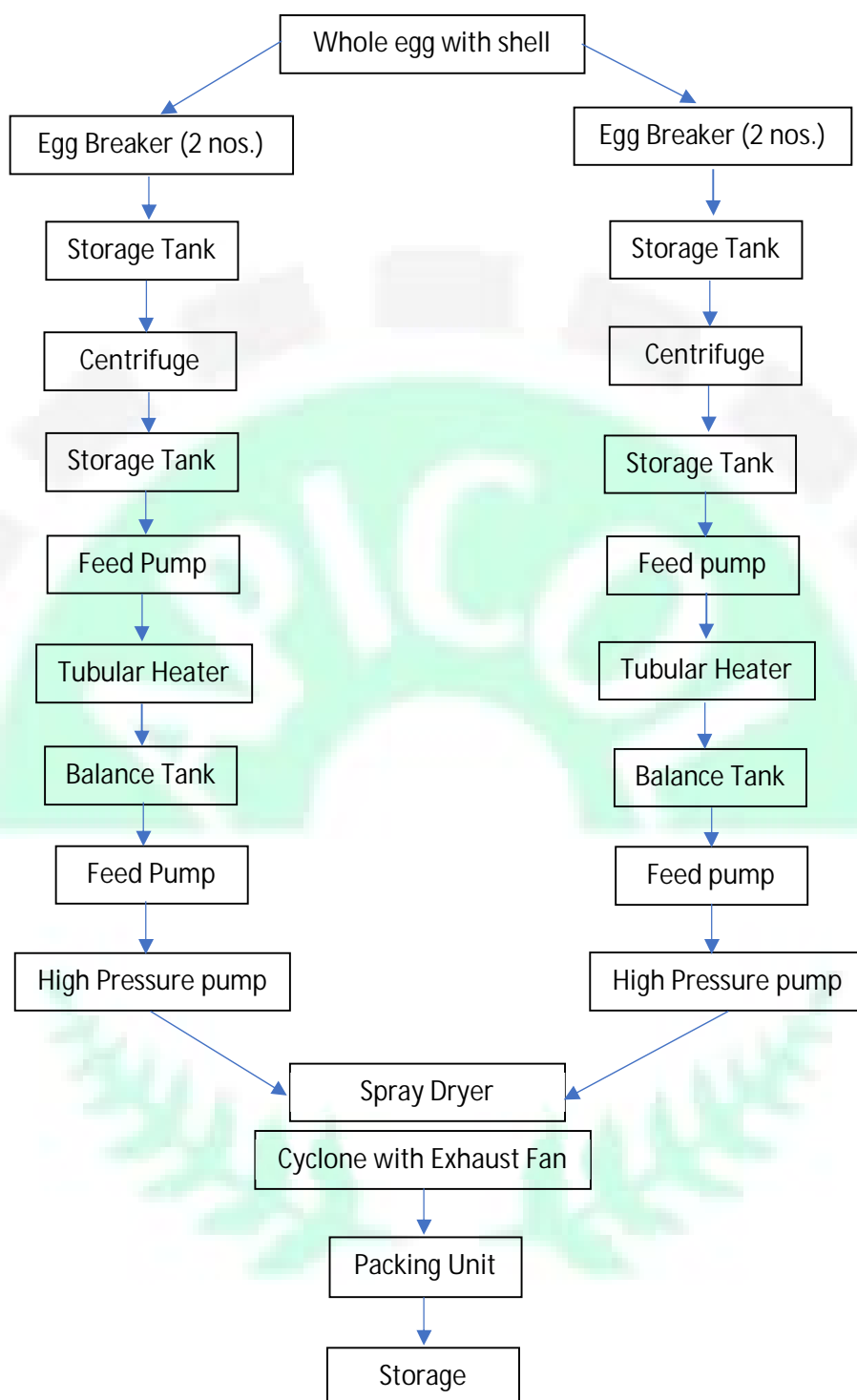
Spray drying is the most commonly used method for drying whole eggs, egg yolks, or egg whites. The eggs are preheated to 60°C, then sprayed into a drying chamber through which air between 121 and 149°C is passing. The powder separates from the air and is continuously removed from the drying chamber.

The eggs are fed to a convectional egg breaking system. After breaking and separation of the egg and shell the whole egg is discharged into the filtration system of the process. The shells are deposited into a centrifuge where the residual liquid egg and shell are separated. After the special filtration process, the egg is fed to the storage tank where it is cooled down to 4°C by means of the chilled water jackets. Slow speed agitation is provided with these storage vessels.

From the storage tanks the egg is fed by a positive displacement pump to the tubular heater. This tubular heater is heated by hot water. The egg temperature is raised to 65°C. after heating the product is held at 65°C for 6 minutes gives sufficient pasteurization of the product for most situations and errs on the side of safety. Shorter holding times at 65°C are acceptable if the incoming egg quality allows this.

The warm egg from the holding tube is fed to one of the two dryer balance tanks and then to the high-pressure pump by a centrifugal feeding pump. From the high pressure pump the egg is fed to the atomizing nozzles via a high-pressure line. The spray dryer is cylindrical with a conical outlet for air and powder. The filtered drying air is heated by steam and then introduced to the drying chamber by a specially designed venturi. Placed in this venturei are the atomizing nozzole lances. The product is finally atomized into the hot inlet air. Due to flash drying the hot air rapidly reduces in temperature, thus giving minimum product damage. The dry powder and drying air leave the chamber at the bottom of the cone and are transported to a cyclone where the power is separated from the air. The powder is then cooled and filled into a container.

Process Flow





Conversion Factors Fluid/Dried for Egg Products

Start With	Factor	Convert to
Whole egg, fluid	0.276	Dried whole egg
Egg yolk, fluid	0.518	Dried egg yolk
Egg whites, fluid	0.140	Dried egg whites
Dried whole egg	3.62	Fluid whole egg
Dried egg yolk	1.93	Fluid egg yolk
Dried egg whites	7.16	Fluid egg whites

Suggestions for the reconstitution of dried egg products into fluid.

Whole egg powder

- 13 g of whole egg powder plus 39 g of water is equivalent to 1 shell egg.
- For separate rehydration pre-blend a small quantity of other powders (sugar, starch, flour) from the recipe into the whole egg powder prior to adding water in order to avoid lumpiness
- Otherwise, the pre-blending of all powder ingredients of a recipe is recommended before water addition for preventing lumps

Egg white powder

- 4 g of egg white powder plus 29 g of water is equivalent to 1 shell egg white.
- For separate rehydration pre-blend a small quantity of other powders (sugar, starch) from the recipe into the whole egg powder prior to adding water in order to avoid lumping
- Otherwise, the pre-blending of all powder ingredients of a recipe is recommended before water addition for preventing lumps

Egg yolk powder

- 9 g of egg yolk powder plus 11 g of water is equivalent to 1 shell egg yolk
- For separate rehydration pre-blend a small quantity of other powders (sugar, starch, flour) from the recipe into the whole egg powder prior to adding water in order to avoid lumping
- Otherwise, the pre-blending of all powder ingredients of a recipe is recommended before water addition for preventing lumps

Legal Requirements

The entrepreneur shall get the clearance from pollution control board



Market Potential

Eggs are full of nutrients and minerals and are consumed in different forms since centuries. There was misconception that they are from non-vegetarian food category but now people at large have accepted them as a vegetarian item and their consumption is increasing year after year. Transportation of eggs is difficult as chances of breakage during transportation are higher and it is costly also. Egg powder is comparatively easier to transport and there is no question of any breakage during the transit.

Dried egg products have a number of advantages, as listed below

1. They can be handled and stored with ease and at low cost.
2. They are ready to use immediately with no thawing.
3. They are easy to handle in a hygienic way.
4. They are easy to remove from the container without scraping.
5. No bacterial growth can occur in powder at room temperature, provided it is kept dry.
6. There is good uniformity.
7. There is precise control over the amount of water used in formulation.
8. There is no loss when used because the dried egg is usually added directly to the batch.
9. No special transfer or storage equipment is needed.

3. Techno-commercial Assumptions

Sl. No.	Parameter	Value	Unit
1	Increase in Rate of Product	5	%
2	Increase in Electricity consumption	5	%
3	Collection from Debtors (First Year)	15	Days
4	Collection from Debtors	15	Days
5	Payable to Creditors	20	Days
6	Drawing By Promoter	40	%
7	Increase in Staff Salary	5	%
8	Rate of Interest on TL	11	%
9	Rate of Interest on WC	9	%
10	Loan Repayment (in year)	7	Years
11	Raw Material in Stock (on sales)	10	Days
12	Finished Goods in stock (on sales)	10	Days
13	Promoter's Contribution (Term Loan)	10	%
14	Promoter's Contribution (Working Capital)	40	%
15	Working Capital Requirement	1	Months
16	Working Capital Utilisation	100	%
17	Conversion factor (Whole egg fluid to whole egg powder)	0.276	
18	Weight of 1 egg	0.052	kg
19	No. of Working Days	295	Days



1. Financial Details

4.1. Project Fixed Capital

Sl. No.	Particulars	Unit	Qty.	Cost per unit (Rs)	Total (Rs)
A	Land				
1	Land Development	sq. ft	25000	LS	17,500
2	Fencing (Barbed wire/Green Fencing)	ft	635	60.00	38,100
	Sub Total				55,600
B	Civil Construction				
1	Production area	sq. ft	5000	950	47,50,000
2	RM and FG Store	sq. ft	3000	400	12,00,000
3	Office	sq. ft	600	950	5,70,000
	Sub Total				65,20,000
C	Water Supply				
1	Water Supply with overhead tank and pump				2,50,000
D	Electrification				
1	Electrical Installation with transformer and DG				10,00,000

E	Plant & Machinery				
Sl. No.	Particulars	Specification	Qty	Unit Price (Rs)	Total (Rs)
1	Egg Breaker		4	50000	2,00,000
2	Centrifuge		2	300000	6,00,000
3	Filter		2	100000	2,00,000
4	Storage tank		4	75000	3,00,000
5	Feed pump		2	300000	6,00,000
6	Tubuler Heater		1	800000	8,00,000
7	Balance tank		4	75000	3,00,000
8	Feed pump		2	350000	7,00,000
9	High pressure pump		2	4,00,000	8,00,000
10	High pressure spray dryer		1	750000	7,50,000
11	Cyclone with exhaust and fan		1	3,50,000	3,50,000
12	Packaging Unit		1	5,00,000	5,00,000
13	Electrical Pannels	LS	1	4,00,000	4,00,000
14	Quality Testing Lab	LS	1	2,00,000	2,00,000
15	Installation and commissioning Charges	LS	1	5,00,000	5,00,000
16	Effluent treatment plant	LS	1	5,00,000	5,00,000
	Total				75,00,000
F	Miscellaneous Expenditure				
1	Insurance premium of assets	LS			1,00,000



4.2. Project Variable Expenses

Details of raw material						
Sl. No.	Items	Unit	Rate/Unit (in Rs)	Qty/day (nos.)	Qty/annum (nos.)	Total (Rs)
1	Egg	No	4.00	20000	59,00,000	2,36,00,000
2	Packing material (PP liner and OCB)	No	15.00	43	12,702	1,90,523
	Total			20,043	59,12,702	2,37,90,523

Details of salary and other benefits				
Sl. No.	Type of workers	No. of Worker	Salary Per Month/head (Rs)	Total Salary per annum (Rs)
1	Factory Manager	1	40,000	4,80,000
2	Machine Operator	2	15,000	3,60,000
3	Skilled Worker	6	12,000	8,64,000
4	Semi-skilled worker	4	9,000	4,32,000
5	Unskilled worker	7	8,000	6,72,000
6	Purchase and Store	1	15,000	1,80,000
7	Sales	1	18,000	2,16,000
8	Security	3	10000	360000
	Grand Total	25		35,64,000

4.3. Details of Sales

G Details of sales (Per annum @100% capacity)						
Sl. No.	Type of products	Unit	Rate per kg (Rs)	Quantity per day (kg)	Quantity per annum (kg)	Total (Rs)
1	Whole egg powder	Kg	750	215	63,508	4,76,30,700
	Total					4,76,30,700



4.4. Project Balance Sheet

Liabilities	I	II	III	IV	V	VI	VII
Opening Capital	-	42,98,997	51,52,224	62,84,594	77,26,375	94,01,642	1,12,70,596
Add: Introduced	26,50,560						
Add: Profit	27,48,437	42,89,227	53,22,370	65,92,781	79,43,268	93,83,954	92,24,076
Less: Drawing	11,00,000	34,36,000	41,90,000	51,51,000	62,68,000	75,15,000	81,98,000
Closing Capital	42,98,997	51,52,224	62,84,594	77,26,375	94,01,642	1,12,70,596	1,22,96,673
Term Loan from Bank	1,24,88,730	1,09,33,072	91,97,395	72,60,867	51,00,247	26,89,602	-
Current Liabilities							
Cash Credit from Bank	16,62,000	16,62,000	16,62,000	16,62,000	16,62,000	16,62,000	16,62,000
Sundry Creditors	9,51,621	12,49,067	13,99,000	15,60,800	17,35,267	19,23,267	19,13,200
Expenses Payable	7,10,200	8,52,000	9,31,900	10,17,500	11,09,400	12,08,000	12,23,100
Current Provisions	9,10,044	15,70,383	20,13,159	25,57,620	31,36,401	37,53,837	36,85,318
Total Current Liabilities	42,33,865	53,33,450	60,06,059	67,97,920	76,43,067	85,47,104	84,83,618
Total Liabilities	2,10,21,592	2,14,18,745	2,14,88,047	2,17,85,162	2,21,44,956	2,25,07,302	2,07,80,291
Assets							
Fixed Assets	1,54,25,600	1,54,25,600	1,54,25,600	1,54,25,600	1,54,25,600	1,54,25,600	1,54,25,600
Less Depreciation	19,52,000	36,45,050	51,14,608	63,91,150	75,00,888	84,66,374	93,07,025
Net Fixed Assets	1,34,73,600	1,17,80,550	1,03,10,993	90,34,450	79,24,712	69,59,226	61,18,575
Current Assets							
Sundry Debtors	14,29,000	18,75,500	21,00,600	23,43,500	26,05,500	28,87,800	28,72,600
Inventories	14,36,514	15,87,814	19,61,733	21,94,100	24,44,733	27,14,967	28,98,067
Cash and Bank Balance	2,85,800	3,75,100	4,20,200	4,68,700	5,21,100	5,77,600	5,74,600
Other Current Assets	43,96,678	57,99,781	66,94,521	77,44,412	86,48,910	93,67,709	83,16,449
Total Current Assets	75,47,992	96,38,195	1,11,77,055	1,27,50,712	1,42,20,244	1,55,48,076	1,46,61,716
Total Assets	2,10,21,592	2,14,18,745	2,14,88,047	2,17,85,162	2,21,44,956	2,25,07,302	2,07,80,291



4.5. Calculation of Depreciation

Rates of Depreciation		10%	15%	Total depreciation for the year
Year	1	6,77,000.00	12,75,000	19,52,000
	2	6,09,300.00	10,83,750	16,93,050
	3	5,48,370.00	9,21,188	14,69,558
	4	4,93,533.00	7,83,009	12,76,542
	5	4,44,179.70	6,65,558	11,09,738
	6	3,99,761.73	5,65,724	9,65,486
	7	3,59,785.56	4,80,866	8,40,651

4.6. Projected P&L

Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	50	70	75	80	85	90	90
Revenue							
Sales	2,85,78,420	3,75,10,000	4,20,12,000	4,68,70,000	5,21,09,000	5,77,55,000	5,74,52,000
Opening Stock of Finished Goods	-	(9,52,614)	(12,50,333)	(14,00,400)	(15,62,333)	(17,36,967)	(19,25,167)
Closing Stock of Finished Goods	9,52,614	12,50,333	14,00,400	15,62,333	17,36,967	19,25,167	19,15,067
Total Income (A)	2,95,31,034	3,78,07,719	4,21,62,067	4,70,31,933	5,22,83,633	5,79,43,200	5,74,41,900
Expenditure							
Opening stock of Raw Material	-	4,83,900	6,35,200	7,11,400	7,93,700	8,82,400	9,78,000
Purchase (Net) of Material	1,42,74,314	1,87,36,000	2,09,85,000	2,34,12,000	2,60,29,000	2,88,49,000	2,86,98,000
Closing Stock of Raw material	4,83,900	6,35,200	7,11,400	7,93,700	8,82,400	9,78,000	9,72,900
Raw Material Consumption	1,37,90,414	1,85,84,700	2,09,08,800	2,33,29,700	2,59,40,300	2,87,53,400	2,87,03,100
Repair & Maintenance- Machinery (@5% of Sales)	14,28,921	18,75,500	21,00,600	23,43,500	26,05,450	28,87,750	28,72,600
Electricity expense	28,57,842	37,51,000	42,01,200	46,87,000	52,10,900	57,75,500	57,44,200
Insurance cost	1,00,000	1,05,000	1,10,300	1,15,900	1,21,700	1,27,800	1,34,200
Administrative salaries and wages	35,64,000	37,42,200	39,29,400	41,25,900	43,32,200	45,48,900	47,76,400
Other Misc Expenses [@2% of sales]	5,71,568	7,50,200	8,40,240	9,37,400	10,42,180	11,55,100	11,48,838
Total Cost	2,23,12,745	2,88,08,600	3,20,90,540	3,55,39,400	3,92,52,730	4,32,48,450	4,33,79,338



Description	Year ending March 31st						
	I	II	III	IV	V	VI	VII
Capacity Utilisation	50	70	75	80	85	90	90
Profit Before Depreciation, Interest and Tax	72,18,289	89,99,119	1,00,71,527	1,14,92,533	1,30,30,903	1,46,94,750	1,40,62,562
Depreciation	19,52,000	16,93,050	14,69,558	12,76,542	11,09,738	9,65,486	8,40,651
Profit Before Interest and Tax	52,66,289	73,06,069	86,01,969	1,02,15,991	1,19,21,166	1,37,29,264	1,32,21,911
Interest on Term Loan	14,58,227	12,96,880	11,16,861	9,16,010	6,91,917	4,41,893	1,62,936
Interest on Working Capital Loan	1,49,580	1,49,580	1,49,580	1,49,580	1,49,580	1,49,580	1,49,580
Total Interest Paid	16,07,807	14,46,460	12,66,441	10,65,590	8,41,497	5,91,473	3,12,516
Profit Before Tax	36,58,481	58,59,610	73,35,529	91,50,401	1,10,79,668	1,31,37,791	1,29,09,395
Income Tax	9,10,044	15,70,383	20,13,159	25,57,620	31,36,401	37,53,837	36,85,318
Profit after Tax	27,48,437	42,89,227	53,22,370	65,92,781	79,43,268	93,83,954	92,24,076

4.7. Projected Cash Flow

Period Ending:	I	II	III	IV	V	VI	VII
Cash & Bank Balance at Beginning	-	2,85,800	3,75,100	4,20,200	4,68,700	5,21,100	5,77,600
Cash Inflow during the Period	2,29,73,592	70,81,861	74,64,536	86,61,185	98,98,152	1,12,53,477	1,11,31,187
Cash Outflow during the Period	2,26,87,792	69,92,561	74,19,436	86,12,685	98,45,752	1,11,96,977	1,11,34,187
Closing Cash & Bank Balance	2,85,800	3,75,100	4,20,200	4,68,700	5,21,100	5,77,600	5,74,600

4.8. Projected Loan Repayment

Year	Interest	EMI	Principal
1	14,58,227.45	28,52,537.64	13,94,310.18
2	12,96,879.50	28,52,537.64	15,55,658.14
3	11,16,860.55	28,52,537.64	17,35,677.09
4	9,16,010.02	28,52,537.64	19,36,527.62
5	6,91,917.30	28,52,537.64	21,60,620.34
6	4,41,892.83	28,52,537.64	24,10,644.81
7	1,62,935.82	28,52,537.64	26,89,601.82
Total	60,84,723.47	1,99,67,763.47	1,38,83,040.00



4.9. Calculation of DSCR, IRR and BEP

Calculation of DSCR							
Year	I	II	III	IV	V	VI	VII
Net Sales	2,85,78,420	3,75,10,000	4,20,12,000	4,68,70,000	5,21,09,000	5,77,55,000	5,74,52,000
Net Profit	27,48,437	42,89,227	53,22,370	65,92,781	79,43,268	93,83,954	92,24,076
Interest Paid	16,07,807	14,46,460	12,66,441	10,65,590	8,41,497	5,91,473	3,12,516
Cash Accruals (a)	43,56,244	57,35,686	65,88,811	76,58,371	87,84,765	99,75,427	95,36,592
Principal	13,94,310	15,55,658	17,35,677	19,36,528	21,60,620	24,10,645	26,89,602
Interest	16,07,807	14,46,460	12,66,441	10,65,590	8,41,497	5,91,473	3,12,516
Total (b)	30,02,118	30,02,118	30,02,118	30,02,118	30,02,118	30,02,118	30,02,118
DSCR	1.45	1.91	2.19	2.55	2.93	3.32	3.18
Average DSCR	2.50						

Calculation of Internal Rate of Return (IRR)				
Sl. No.	Year	PAT	Depreciation	Cash Accrual
	Cash outflow at beginning			-1,81,95,600
1	31-03-2023	27,48,437	19,52,000	47,00,437
2	31-03-2024	42,89,227	16,93,050	59,82,277
3	31-03-2025	53,22,370	14,69,558	67,91,928
4	31-03-2026	65,92,781	12,76,542	78,69,323
5	31-03-2027	79,43,268	11,09,738	90,53,006
6	31-03-2028	93,83,954	9,65,486	1,03,49,440
7	31-03-2029	92,24,076	8,40,651	1,00,64,728
IRR			32.00%	
Payback Period			3 Years 1 Months	

Calculation of Break-Even Point (BEP)							
Sales	2,95,31,034	3,78,07,719	4,21,62,067	4,70,31,933	5,22,83,633	5,79,43,200	5,74,41,900
Variable Cost	1,43,61,982	1,93,34,900	2,17,49,040	2,42,67,100	2,69,82,480	2,99,08,500	2,98,51,938
Contribution	1,51,69,052	1,84,72,819	2,04,13,027	2,27,64,833	2,53,01,153	2,80,34,700	2,75,89,962
Fixed Cost	1,15,10,570	1,26,13,210	1,30,77,498	1,36,14,432	1,42,21,485	1,48,96,909	1,46,80,567
BEP Sales	2,24,08,721	2,58,15,046	2,70,10,906	2,81,27,290	2,93,88,024	3,07,89,506	3,05,64,727
Average BEP sales	2,77,29,174						



4.10. Summary of Project Cost

Sl. No.	Name of Assets	Amount
1	Land Development	55,600
2	Civil Construction	65,20,000
3	Irrigation/Water Supply	2,50,000
4	Electrification	10,00,000
5	Plant & Machinery	75,00,000
6	Livestock	-
7	Insurance	1,00,000
8	DPR Cost	-
9	Other Misc. Exp.	-
	Total Fixed Cost	1,54,25,600
	Recurring	27,70,000
	Total Cost of Project	1,81,95,600