

PROJECT PROFILE

ON

COLD STORAGE

Month & Year

Aug 2010

**PREPARED BY
TANSTIA-FNF SERVICE CENTRE
B-22, INDUSTRIAL ESTATE
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Supported by

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STIFTUNG **FÜR DIE FREIHEIT**

COLD STORAGE

1. Introduction

Fruits and vegetables have a very short shelf life after harvest. In order to prevent post harvest losses, they have to be processed immediately or stored under refrigerated conditions. Immediately after harvest, precooling to about 10 degrees centigrade is advantageous. Further cooling and storage at minus 8 to minus 10 degrees centigrade enhances the shelf life of the product.

2. Market

Cold storage is a facility normally held by an individual to be provided to users to store their raw materials. The market is therefore specific to users and not wide as a consumer market.

3. Packaging

Material stored in the cold store is normally in crates.

4. Storage capacity

- The material to be kept under cold storage is received from the farms. It is stacked and cooled to a temperature of 8 degrees centigrade. The plant will be in continuous operation for three shifts a day with each shift of 8 hours duration. The storage capacity of the unit is 500 tons.
- The time period required for achieving full capacity utilization is one year.

5. Rental revenue

- At a rental value of Rs. 120 per ton per day the total sales revenue per annum would be Rs. 219.00 lakhs on full capacity utilisation.

6. Storage process outline.

The material received from the farms will be weighed and placed in crates with a customer and material code tag. The gross and net weights of the crate will also be recorded. Stacking will be in pallets with a supporting frame.

7. Pollution control measures

Not necessary as there are no pollutants or effluents.

8. Energy conservation measures

Common measures will do.

10. Land and construction cost for the proposed unit

Land 1.0 acres - Rs. 2.0 lakhs.

Storage area is 11000 square feet as detailed below.

SI	Description	Sq. feet
1	Cold store for fruits and vegetables	8000
2	Administrative office	500
3	Machinery spares store	200
4	Refrigeration room	2000
5	Toilet space	200
6	Miscellaneous space	100
7	Total	11000

Construction cost – Rs. 900 per square foot

Total value of civil works – Rs. 99.00 lakhs

Total cost of land and civil works is Rs. 101.00 lakhs.

11. Costing of machinery and equipment

SI	Description	Rs. lakhs
1	Refrigeration equipment for cooling 250 tons of fruits and 250 tons of vegetables stored in 5500 square feet each and to provide a temperature of 2 to 8 degrees centigrade	30.000
2	Ducting and wall paneling	10.00
3	Stand by equipment	7.000
4	Total	47.000
5	Cost of pallets and stacking trays	3.000
6	Fork lift vehicle	10.000
7	Grand total machinery and equipment	60.000

12. Project cost

SI	Description	Rs. lakhs
1	Land	2.000
2	Civil works	99.000
3	Plant machinery	60.000
4	Laboratory equipment	0.000
5	Transport vehicle	0.000
6	Pollution control equipment	0.000
7	Energy conservation equipment	0.000
8	Cost of power connection	1.500
9	Cost of electrification	2.000
10	Erection and commissioning	4.700
11	Cost of machinery spares	2.000
12	Cost of office equipment	1.000
13	Deposits if any	0.000
14	Company formation expenses	0.100
15	Gestation period expenses	1.000
16	Sales tax registration expenses	0.100
17	Initial advertisement and publicity	5.000
18	Contingencies	1.000
19	Working capital margin money	5.048
20	Total	184.448

13. Working capital requirements per month

a. Salaries and wages

SI	Description	No of persons	Total salary / month (Rs. lakhs)
1	Refrigeration Engineer	1	0.300
2	Refrigeration mechanics	3	0.450
3	Plant mechanics	3	0.300
4	Skilled workers	3	0.240
5	Unskilled workers	30	1.200
6	Administrative staff	2	0.400
7	Security staff	4	0.200
8	Total	46	3.090

b. Utilities per month

SI	Description	Rs. lakhs
1	Power 111500 kwh @ Rs. 5.50 per unit	6.133
2	Water	0.100
3	Refrigeration gas	1.000
4	Total utilities	7.233

c. Contingent expenses per month

SI	Description	Rs. lakhs
1	Rent for processing shed	0.000
2	Postage and stationery	0.020
3	Telephones, fax etc.	0.050
4	Consumable stores	0.050
5	Repairs and maintenance	0.392
6	Local transports, loading and unloading	0.100
7	Advertisement and publicity @ 5% of sales	0.913
8	Insurance	0.039
9	Sales expenses @ 1% of sales	0.183
10	Miscellaneous expenses @ 1% of sales	0.183
11	Trade incentives @ 2% of sales	0.366
12	Taxes	0.000
13	Total contingent expenses	2.296

d. Total working capital requirement per month

SI	Description	Rs. lakhs
1	Salaries and wages	3.090
2	Raw material and packaging material	0.000
3	Utilities	7.233
4	Contingent expenses	2.296
5	Total	12.619

14. Means of finance

SI	Description	Rs. lakhs
1	Total Project Cost	184.448
2	Equity	60.867
3	Debt	123.581
4	Working capital margin money	5.048

15. Financial analysis

SI	Description	Rs. lakhs
1	Total recurring cost per year	151.428
2	Depreciation on land and building	10.100
3	Depreciation on machinery	6.000
4	Depreciation on furnaces	0.000
5	Depreciation on moulds and fixtures	3.000
6	Depreciation on office equipment	1.000
7	Interest on long term loan @ 13.5%	16.683
8	Interest on short term borrowings@ 13.5%	1.022
9	Total cost of production	189.233

16. Turnover per year

SI	Item	Qty	Rate/unit (Rs)	Total Rs. lakhs
1	Cold store	500 MT	120 / MT/day	219.00

17. Viability analysis

SI	Description	Value
1	Net profit before income tax (Rs. lakhs)	29.767
2	Net profit ratio	13.5%
3	Internal rate of return	15.8%
4	Break even percentage	44%
5	Debt service coverage ratio	2.124

List of machinery suppliers for cold storage

1. Blue Star Limited, Commercial Equipment Division, 13, Community Centre, New Friends Colony, New Delhi. 110065. ; Tel: 011 - 6834262; Fax: 011 - 6841845
2. Carrier Refrigeration Private Limited, C-7, Golden Enclave, Airport Road, Bangalore. 560017.; Tel: 080 - 5272688; Fax: 080 - 5262788
3. Freezeking Industries Private Limited, 7/17, Industrial Area, Kirti Nagar, New Delhi. 110015.; Tel: 011 - 5930681; Fax: 011 - 5447509
4. Frick India Limited, 7 / 15, Kirti Nagar Industrial Area, New Delhi. 110015; Tel: 011 - 5463706; Fax: 011 – 5275695
5. Frick India Limited, 243, Anna Salai, Chennai. 600006. Tel: 044-28524010
6. Voltas India Limited, Air Conditioning and Refrigeration Division, 19, J.N.Heredia Marg, Ballard Estate, Mumbai. 400001.; Tel: 022 - 2618131; Fax: 022 - 2615220