

# **PROJECT PROFILE**

ON

## **EXTRUDED ENERGY FOOD**

Month & Year

Aug 2010

**PREPARED BY  
TANSTIA-FNF SERVICE CENTRE  
B-22, INDUSTRIAL ESTATE  
CHENNAI-600032**

Supported by

Friedrich Naumann  
STIFTUNG **FÜR DIE FREIHEIT**

## **EXTRUDED ENERGY FOOD**

### **1. Introduction**

Energy food is a commonly consumed commodity in all households both in urban and rural areas. Traditionally the energy food is prepared by germination and roasting of cereals and pulses. The product is cooked and served with a little addition of milk and sugar. With the development of extrusion technology, energy food in a cooked form can be produced which can be served as a pap to infants, or as porridge or as a beverage. The product being already cooked needs no further terminal processing. Further, it is already sweetened and therefore ready to use by the addition of hot milk.

### **2. Market**

The product finds placement in all “A”, and “B” class outlets, self service, departmental stores and supermarkets. The product has a lot of market potential because it is very hygienically processed, reasonably priced and that it has a very good nutritive value without any loss of nutrients during the process of extrusion cooking.

### **3. Packaging**

Extruded energy food is best packed in polyethylene or polypropylene or BOPP pouches as primary packing. The pouch is placed in a paperboard carton, which is the secondary packing. The product is packed in weights of 500 gms and 1000 gms.

### **4. Production capacity**

- The plant operates to three shifts a day with each shift of eight hours duration.
- The plant will operate to a capacity of raw material input of 150 kilograms per hour or 3000 kilograms per day. The raw collet output will be 3000 kilograms per day.
- After pulverization, the product would be mixed with sugar thus yielding 4 M.T. of the finished product per day.

- The estimated production per month would be 100 M.T and that per annum of 300 working days would be 1200 M.T.
- The time period required for achieving full capacity utilization is one year.

#### **5. Sales revenue**

- The ex-factory selling price of the product shall be Rs. 80 per kilogram thereby yielding sales revenue of Rs. 960 lakhs on full capacity utilization. The MRP is fixed at Rs. 100 per kilogram

#### **6. Production process outline.**

The ingredients comprising corn grits, wheat semolina, defatted soya flour, and skimmed milk powder are moistened with water and extruded. The extruded collets obtained are dried to a moisture content of less than 6 percent in a continuous drier and pulverized to a particle size of around 150 microns. Sugar is also ground separately in the micropulveriser. The extruded product and sugar are mixed in definite proportions and packed. A general formulation comprises corn grits - 70%; wheat semolina - 10%; defatted soya flour - 10%; and skimmed milk powder - 10%.

#### **7. Quality specifications**

- Moisture - maximum 10 %.
- Protein - minimum 15%
- Fat - maximum 2%
- Crude fibre - maximum 5%
- Ash - maximum 1%
- Acid insoluble ash - maximum 0.1 %.
- Acidity of extracted fat as oleic acid - maximum 1.5 percent.
- The product should be free from coliforms, salmonella and streptococci bacteria. The total plate count should not exceed 30,000 per gram.
- The product should be free from rodent excreta, human hair, and insect infestation It should also not contain any added coal tar food colours, preservatives, emulsifiers, stabilizers, and artificial flavouring agents.

#### **8. Pollution control measures**

Not necessary as there are no pollutants or effluents.

**9. Energy conservation measures**

Common measures will do.

**10. Land and construction cost for the proposed unit**

Land required – 1.00 acre

Cost of land – Rs. 2.00 lakhs.

Total space required – 9200 square feet

SI	Description	Sq. feet
1	Processing area	6000
2	Raw material store	1000
3	Other ingredients store room	500
4	Finished goods store room	200
5	Laboratory	300
6	Packing area	200
7	Office space	500
8	Machinery spares room	100
9	Toilet space	200
10	Miscellaneous space	200
<b>11</b>	<b>Total</b>	<b>9200</b>

Cost of construction – Rs. 800 per square foot

Total cost of construction – Rs. 73.60 lakhs

Total cost of land and civil works – Rs. 75.60 lakhs

**11. Costing of machinery and equipment**

SI	Description	Rs. lakhs
1	Flour sifter	1.350
2	Vertical screw mixer	2.500
3	Extruder and accessories	10.700
4	Continuous drier	8.000
5	Micropulveriser with all contact parts in SS	2.500
6	Stainless steel ribbon blender	1.500
7	Packing machine	7.450
8	Weighing scales bulk and fine – 2 nos	0.850
9	Machine spares	1.000
<b>10</b>	<b>Total</b>	<b>35.850</b>

11	Laboratory equipment	1.000
12	<b>Grand total machinery and equipment</b>	<b>36.850</b>

**12. Project cost**

<b>SI</b>	<b>Description</b>	<b>Rs. lakhs</b>
1	Land	2.000
2	Civil works	73.600
3	Plant machinery	35.850
4	Laboratory equipment	1.000
5	Transport vehicle (1 LCV)	7.500
6	Pollution control equipment	0.000
7	Energy conservation equipment	0.000
8	Cost of power connection	1.000
9	Cost of electrification	1.500
10	Erection and commissioning	3.850
11	Cost of machinery spares	0.500
12	Cost of office equipment	1.000
13	Deposits if any	0.500
14	Company formation expenses	0.100
15	Gestation period expenses	1.500
16	Sales tax registration expenses	0.100
17	Initial advertisement and publicity	10.000
18	Contingencies	1.500
19	Working capital margin money	27.454
<b>20</b>	<b>Total</b>	<b>168.954</b>

**13. Working capital requirements per month**

**a. Salaries and wages**

SI	Description	No of persons	Total salary / month (Rs. lakhs)
1	Production Manager	1	0.400
2	Production Supervisor	3	0.900
3	Maintenance Mechanic	1	0.300
4	Laboratory chemists	3	0.750
5	Skilled workers	6	0.600
6	Sales staff	3	0.450
7	Unskilled workers	15	0.600
8	Administrative staff	2	0.500
9	Driver	1	0.100
10	Security staff	3	0.180
<b>11</b>	<b>Total</b>	<b>38</b>	<b>4.780</b>

**b. Raw material requirement per month**

SI	Description	Qty (kgs)	Rate / kg (Rs)	Value (Rs. lakhs)
1	Corn grits	55125	22.00	12.128
2	Wheat semolina	7875	24.00	1.890
3	Defatted soya flour	7875	22.00	1.733
4	Skimmed milk powder	7875	180.00	14.175
5	Sugar	26250	24.00	6.300
6	<b>Total raw material</b>	<b>105000</b>		<b>36.226</b>

**c. Packaging material requirement per month**

SI	Description	Qty	Rate / unit (Rs)	Value (Rs. lakhs)
1	Primary packaging material – metallized polyester – poly film	1000 kgs	250	2.500
2	Primary cartons			4.000
3	Cartons and straps	6000 nos	40	2.400
4	<b>Total</b>			<b>8.900</b>

**Total raw material + packaging material per month – Rs. 45.126 lakhs**

**d. Utilities per month**

SI	Description	Rs. lakhs
1	Power 60000 kwh @ Rs. 5.50 per unit	3.300
2	Water	0.100
3	Boiler fuel	0.000
4	<b>Total utilities</b>	<b>3.400</b>

**e. Contingent expenses per month**

SI	Description	Rs. lakhs
1	Rent for processing shed	0.000
2	Postage and stationery	0.050
3	Telephones, fax etc.	0.050
4	Consumable stores	0.100
5	Repairs and maintenance	0.378
6	Local transports, loading and unloading	0.300
7	Advertisement and publicity @ 10% of sales	8.000
8	Insurance	0.055
9	Sales expenses @ 1% of sales	0.800
10	Miscellaneous expenses @ 1% of sales	0.800
11	Trade incentives @ 2% of sales	1.600
12	Taxes @ 4%	3.200
13	<b>Total contingent expenses</b>	<b>15.333</b>

**f. Total working capital requirement per month**

SI	Description	Rs. lakhs
1	Salaries and wages	4.780
2	Raw material and packaging material	45.126
3	Utilities	3.400
4	Contingent expenses	15.333
5	<b>Total</b>	<b>68.636</b>

**14. Means of finance**

SI	Description	Rs. lakhs
1	Total Project Cost	168.954
2	Equity	55.754
3	Debt	113.200



4	Working capital margin money	27.454
---	------------------------------	--------

### 15. Financial analysis

SI	Description	Rs. lakhs
1	Total recurring cost per year	823.632
2	Depreciation on land and building	7.560
3	Depreciation on machinery	4.430
4	Depreciation on furnaces	0.000
5	Depreciation on moulds and fixtures	0.100
6	Depreciation on office equipment	0.100
7	Interest on long term loan @ 13.5%	15.282
8	Interest on short term borrowings@ 13.5%	5.560
<b>9</b>	<b>Total cost of production</b>	<b>856.664</b>

### 16. Turnover per year

SI	Item	Qty	Rate/unit (Rs)	Total Rs. lakhs
1	Extruded Energy Food	1200 MT	80.00	960.00

### 17. Viability analysis

SI	Description	Value
1	Net profit before income tax (Rs. lakhs)	103.336
2	Net profit ratio	10.7%
3	Internal rate of return	23.5%
4	Break even percentage	48%
5	Debt service coverage ratio	2.212

#### List of machinery suppliers for Extruded Energy Food

1. F.M.C. Hongkong Limited, 2, Bhuvaneshwari Housing Society, Pashan Road, Pune 411008, Maharashtra. ; Tel: 020 - 25893700; Fax: 020 - 25983701
2. Spectoms Engineering Private Limited, Purshottam Estate, Bahucharji Road, Vadodra 390018, Gujarat.; Tel: 0265 - 2426920; Fax: 0265 - 2644592