

Investment Office ANRS

**PROJECT PROFILE ON THE ESTABLISHMENT
OF ALUMINIUM FRAMES PRODUCING PLANT**

Development Studies Associates (DSA)

**October 2008
Addis Ababa**

Table of Contents

1. Executive Summary	1
2. Product Description and Application	1
3. Market Study, Plant Capacity and Production Program	1
3.1 Market Study	1
3.1.1 Present Demand and Supply	1
3.1.2 Projected Demand.....	3
3.1.3 Pricing and Distribution	4
3.2 Plant Capacity	5
3.3 Production Program	5
4. Raw Materials and Utilities	5
4.1 Availability and Source of Raw materials	5
4.2 Annual Requirement and Cost of Raw Materials and Utilities	5
5. Location and Site	5
6. Technology and Engineering	6
6.1 Production Process	6
6.2 Machinery and Equipment.....	6
6.3 Civil Engineering Cost.....	7
7. Human Resource and Training Requirement	8
7.1 Human Resource	8
7.2 Training Requirement.....	8
8. Financial Analysis	9
8.1 Underlying Assumption	9
8.2 Investment.....	10
8.3 Production Costs.....	10
8.4 Financial Evaluation	11
9. Economic and Social Benefit and Justification	12
ANNEXES	14

1. Executive Summary

This profile envisages the establishment of a plant for the production of 200 tons of aluminum frames per year.

The present demand for aluminum frames is estimated at 902 tons per annum. The demand is expected to grow from 992 tons in 2001 to 2340 tons in 2010.

The total investment requirement is estimated at Birr 6.65 million out of which Birr 1.5 million is for building construction.

The plant will create employment opportunities for 20 persons.

The project is financially viable with an internal rate of return (IRR) of 28.4% and a net present value (NPV) of Birr 1.5 million discounted at 18%

2. Product Description and Application

Aluminum frames and profiles are building material products made from aluminum. The products are used for doors, windows for making water tanks, for show cases etc. aluminum products are popular because they are light, strong and they do not rust. They are commonly used for modern commercial buildings.

3. Market Study, Plant Capacity and Production Program

3.1 Market Study

3.1.1 Present Demand and Supply

The major end user of aluminum profiles and frames is the building construction sector. The reason is the product is a structure which is to be fitted to windows and doors. Although various types of profiles and frames are manufactured locally the source of aluminum profiles and

frames is mainly from import. The quantity and value of aluminum doors and windows and structure that have been imported during 1991-2000¹ are given in Table 1.

As shown in Table 1 the country has been importing about 576 tons of ready made aluminum doors, windows and frames with CIF value of Birr 14.2 million as well about 326 tons of aluminum structures with CIF value of about Birr 12.7 million on the average for the last ten years.

The supply from import is not consistent, which could be due to foreign exchange shortage. For example the supply during 1995 was small in both ready made doors and windows and structure from prior and subsequent years' imports. However, the import of ready made doors and windows is declining from 2008 on wards while import of aluminum structure has been increasing. The latter situation indicates the increase in local production of aluminum doors and windows.

For this reason, the present (2000) effective demand is estimated based on the sum of average level of imports of aluminum doors and windows and structure during the period considered, which is about 902,420 kg or 902 tons.

Though we don't have statistical evidence, it is apparent that a certain portion of this imported ready made aluminum doors and windows and raw aluminum structure has been consumed by buildings made in Amhara region.

¹ Years in this document are in Ethiopian calendar.

Table 1

Imports of Aluminum Doors and Windows and Structures*(Quantity in kg, and Value in CIF '000' Birr)*

Year	Doors & windows & their frames	value	Structure & parts	Value
1991	223,838	13,167	19,598	370
1992	34,362	12,745	81,851	4,094
1993	368,220	8,796	193,606	7,000
1994	2,831,230	16,242	402,064	15,759
1995	147,791	9,035	49,854	2,901
1996	479,616	17,708	479,616	17,709
1997	214,910	9,820	318,601	15,194
1998	663,264	26,536	488,631	16,444
1999	414,147	14,129	596,687	21,428
2000	382,244	14,600	634,072	26,299
Total	5,759,622	142,778	3,264,580	127,198
Average	575,962	14,278	326,458	12,720

Source: - Customs Authority, 1991-2000

3.1.2 Projected Demand

The demand for aluminum frames and profiles is related with the expansion of the building industry. As stated in other relevant project ideas, there has been a huge expansion in the building industry during the last 10-14 years in almost all parts of the country. Along with it, the uses of aluminum frames and profiles have been also expanding. Today, it is common to see many residential houses, and multistory buildings being fitted with aluminum frames and profiles. As a result of increased demand for these products, many enterprises which produce the frames and profiles are established in Addis Ababa.

Having more than a quarter of the country's population and similar size of the economy as well as increase in building construction, there is enough demand for aluminum profiles and frames which can justify the establishment of aluminum profiles and frames making plant in Amhara region.

As in indicated above, the demand for aluminum frames and profiles is directly related to the construction activities. The national plan has forecasted that construction sector will grow at annual average growth rate of 14.9%. To arrive at a conservative estimate a 10% annual growth rate is adopted for aluminum frames and profiles (See Table 2)

As shown in Table 2 the national projected demand ranges from 992 tons in the year 2001 to 2,340 tons in the year 2010.

Table 2
Projected Demand for Aluminum Frames and Profiles

Year	Projected Demand(Tons)
2001	992
2002	1091
2003	1200
2004	1320
2005	1452
2006	1598
2007	1758
2008	1933
2009	2127
2010	2340

3.1.3 Pricing and Distribution

The aluminum plant is assumed to sell its product at a 15 % plus to its total production cost per ton (about 57,600), which is Birr 66,200 per ton. The products of the plant will be directly marketed to the end users through its own channel.

3.2 Plant Capacity

The aluminum plant is assumed to produce 200 tons of aluminum doors and windows at full capacity utilization operating 275 days per year and 8 hours per day in two shift operation.

3.3 Production Program

Considering the gradual growth of demand and the time required to develop the required skill the rate of capacity utilization during the first, second and third year of production will be 70%, 80% and 90% respectively. Full capacity utilization will be reached during the fourth year of operation.

4. Raw Materials and Utilities

4.1 Availability and Source of Raw materials

Aluminum structure and bars, keys and hinges are the required materials to produce aluminum doors and windows. All materials are to be imported.

4.2 Annual Requirement and Cost of Raw Materials and Utilities

The average CIF price per kilogram of aluminum profiles and frames in the past 10 years has been estimated to be Birr 39.00 per kg. Assuming that duty and other expenses to be about 40% of the CIF value, the landed cost of structure aluminum is estimated to be Birr 53.00 per kg. In this regard, to purchase 200 tons of aluminum the plant will require about Birr 10,600,000.00 per annum, 75% is in foreign currency.

The annual electricity requirement is estimated to be 33,000 kwh, and the corresponding annual cost is Birr 18,150. Annual water requirement is estimated at 1,000 cubic meters whose annual cost would be Birr 2,650.

5. Location and Site

The location of the plant should be in big towns where real estates, hotels, commercial buildings, residential houses, government buildings etc are to be built. In this regard, Bahir Dar could be the most preferred location. Bahir Dar is also an ideal location to collect the plant's raw materials from Addis and distribute its out put to the rest of zonal towns of the region.

6. Technology and Engineering

6.1 *Production Process*

The main process is similar to any metal fabrication operations. It involves cutting, bending, jointing, folding, grinding etc. of aluminum sheets and bars.

Alternatively, the production technology could be more labor intensive.

6.2 *Machinery and Equipment*

The main machines required include shearing machine, bending machine, welding machine, grinding machine and some auxiliary tools, which are all available locally.

The machinery and equipment required and cost estimates are shown in Table 3. The project will require about Birr 250,000 and Birr 20,000 to purchase a pick up vehicle and office furniture and Equipment, respectively.

Table 3
Machinery and Equipment

Description	Qty	Cost('000 Birr)		
		F.C	L.C	Total
Shearing machine/cutting	5	-	20,000	20,000
Bending machine	2	-	4,000	4,000
Welding machine	2	-	10,000	10,000
Grinding Machine	5	-	11,000	11,000
Drilling Machine	5	-	12,500	12,500
Vice	5	-	4,000	4,000
Assembly Table	4	-	8,000	8,000
Measuring & hand tools	Set	-	2,000	2,000
Total		-		71,500

The machinery and Equipment of the plant can be bought from the following Company.

Pingguo Asia Aluminum Co., Ltd.

Sales Company

Tel: 86-757-8522 3888 Fax: 86-757-8522 8658

Add: Lixi Industrial Zone, Dali Town, Nanhai, Foshan, GuangDong, China.

P.C.: 528231

Manufactory Company

Tel: 86-776-5608888 Fax: 86-776-5608666

Add: Pingguo Industrial Zone, Baise, Guangxi, China.

PC.: 531400

Email: sales@goldapple.com.cn

The technology of Machinery and Equipment of the plant could be selected from companies of Italy and Germany.

6.3 Civil Engineering Cost

The plant will require a total land area of 2000 square meters, of which the total built-up area of the factory is estimated to be about 1,000 square meters. The building cost is estimated at Birr 1.5 million.

7. Human Resource and Training Requirement

7.1 Human Resource

The total manpower required for the plant will be 20 persons. The manpower list and the corresponding labor cost are shown in Table 4.

Table 4

MACHINERY AND EQUIPMENT

No	Description	NO	Monthly Salary/person (Birr)	Annual Salary (Birr)
A.	<u>Administration</u>			
1	Plant Manger	1	3500	42,000
2	Secretary	1	800	9,600
3	Personnel	1	900	10,800
4	Accountant	1	1000	12,000
5	Store Keeper	1	8000	9,000
6	Cleaner(Messenger)	1	400	4,800
7	Guard	2	400	9,600
	Sub-total	8		97,800
B.	<u>Production</u>			
1	Mechanic	1	1000	12,000
2	Supervisor	1	1,500	18,000
3	Operators & helpers	10	800	96,000
	Sub-Total	20		126,000
	Sub total			223,800
	Benefits (20%)			44,760
	Total			268,560

7.2 Training Requirement

The production employees of the plant need to have basic metal work experience and skill. In addition training could be given to the mechanic and to the supervisor for about 15 days in any one existing similar plants in Addis Ababa at marginal cost.

8. Financial Analysis

8.1 Underlying Assumption

The financial analysis of Aluminum Frames producing plant is based on the data provided in the preceding Sections and the following assumptions.

A. Construction and Finance

Construction period	2 years
Source of finance	40% equity and 60% loan
Tax holidays	2 years
Bank interest rate	12%
Discount for cash flow	18%
Value of land	Based on lease rate of ANRS
Spare Parts, Repair & Maintenance	3% of fixed investment

B. Depreciation

Building	5%
Machinery and equipment	10%
Office furniture	10%
Vehicles	20%
Pre-production (amortization)	20%

C. Working Capital (Minimum Days of Coverage)

Raw Material-Local	30 days
Raw Material-Foreign	120 days
Factory Supplies in Stock	30 days
Spare Parts in Stock and Maintenance	30 days
Work in Progress	10 days
Finished Products	15 days
Accounts Receivable	30 days
Cash in Hand	30 days
Accounts Payable	30 days

8.2 Investment

The total investment cost of the project including working capital is estimated at Birr 6.7 million as shown in table 5 below. The Owner shall contribute 40% of the finance in the form of equity while the remaining 60% is to be financed by bank loan.

The foreign component of the project accounts for Birr 3.5 million or 52.1% of the total investment cost.

Table 5: Total initial investment

	LC	FC	Total
Land	6,000		6,000
Building	1,500,000		1,500,000
Office equipment	20,000		20,000
Vehicles	250,000		250,000
machinery & equipment	71,500		71,500
Total Fixed Investment	1,847,500	0	1,847,500
Pre production	92,375		92,375
Total Initial Investment	1,939,875	0	1,939,875
Working capital	1,246,780	3,469,091	4,715,871
Total	3,186,655	3,469,091	6,655,746

**Pre-production capital expenditure includes - all expenses for pre-investment studies, consultancy fee during construction and expenses for company's establishment, project administration expenses, commission expenses, preproduction marketing and interest expenses during construction.*

8.3 Production Costs

The total production cost at full capacity operation is estimated at about Birr 11.5 million (see Table 6). Raw materials account for 92.2%.

Table 6

Total Production Cost at full Capacity	
Items	Cost
1. Raw materials	10,600,000
2. Utilities	20,800
3. Wages and Salaries	268,560
4. Spares and Maintenance	55,425
Factory costs	10,944,785
5. Depreciation	152,625
6. Financial costs	399,345
Total Production Cost	11,496,755

8.4 Financial Evaluation

I. Profitability

According to the income statement of the project, the aluminum frame production plant will generate profit starting from the first year of operation. The project will give 27.0% return on investment and 16.0% return on equity capital.

II. Breakeven Analysis

The break even point of the project is estimated by using income statement projection. The plant breaks evens at 12.0% of capacity utilization

III. Payback Period

The project will pay back fully the initial investment in two year's time.

IV. Simple Rate of Return

The simple rate of return of the project at its full capacity utilization is 22.80%.

V. *Internal Rate of Return and Net Present Value*

Based on the cash flow statement, the calculated IRR of the project is 28.40% and the NPV at 18% discount rate is over Birr 1.5 million.

VI. *Sensitivity Analysis*

The project will absorb shocks if prices increased by 10%.

9. Economic and Social Benefit and Justification

Based on the foregoing presentation and analysis, we can learn that the proposed project possesses wide range of benefits that complement the financial feasibility obtained earlier. In general the envisaged project promotes the construction sector and the socio-economic goals and objectives stated in the strategic plan of the Amhara National Regional State. These benefits are listed as follows.

A. Profit Generation

The project is found to be financially viable and earns on average a profit of birr 1.3 million per year and birr 12.8 million within the project life. Such result induces the project promoters to reinvest the profit which, therefore, increases the investment magnitude in the region.

B. Tax Revenue

In the project life under consideration, the region will collect about birr 4.2 million from corporate tax payment alone (i.e. excluding income tax, sales tax and VAT). Such result create additional fund for the regional government that will be used in expanding social and other basic services in the region

C. Import Substitution and Foreign Exchange Saving

The commencement of this project relieves a portion of the import burden. That is, based on the projected figure we learn that in the project life an estimated amount of US Dollar 13.8 million will be saved as a result of the proposed project. This will create room for the saved hard currency to be allocated to other vital and strategic sectors.

D. Employment and Income Generation

The proposed project is expected to create employment opportunity for 20 professionals as well as support staff. Consequently the project creates income of birr 269 thousands per year. This would be one of the commendable accomplishments of the project.

E. Pro Environment Project

The proposed production process will not affect the environment.

ANNEXES

Annex 1: Total Net Working Capital Requirements (in Birr)

	CONSTRUCTION		PRODUCTION			
	Year 1	Year 2	1	2	3	4
Capacity Utilization (%)	0.00	0.00	70%	80%	90%	100%
1. Total Inventory	0.00	0.00	5909740.32	6753988.94	7598237.56	8442486.17
Raw Materials in Stock- Total	0.00	0.00	2630727.27	3006545.45	3382363.64	3758181.82
Raw Material-Local	0.00	0.00	202363.64	231272.73	260181.82	289090.91
Raw Material-Foreign	0.00	0.00	2428363.64	2775272.73	3122181.82	3469090.91
Factory Supplies in Stock	0.00	0.00	8474.39	9685.01	10895.64	12106.27
Spare Parts in Stock and Maintenance	0.00	0.00	4232.45	4837.09	5441.73	6046.36
Work in Progress	0.00	0.00	211859.65	242125.31	272390.97	302656.64
Finished Products	0.00	0.00	423719.29	484250.62	544781.95	605313.27
2. Accounts Receivable	0.00	0.00	1011054.55	1155490.91	1299927.27	1444363.64
3. Cash in Hand	0.00	0.00	22096.58	25253.24	28409.89	31566.55
CURRENT ASSETS	0.00	0.00	4312164.18	4928187.63	5544211.08	6160234.54
4. Current Liabilities	0.00	0.00	1011054.55	1155490.91	1299927.27	1444363.64
Accounts Payable	0.00	0.00	1011054.55	1155490.91	1299927.27	1444363.64
TOTAL NET WORKING CAPITAL REQUIRMENTS	0.00	0.00	3301109.63	3772696.72	4244283.81	4715870.90
INCREASE IN NET WORKING CAPITAL	0.00	0.00	3301109.63	471587.09	471587.09	471587.09

Annex 1: Total Net Working Capital Requirements (in Birr) (continued)

	PRODUCTION					
	5	6	7	8	9	10
Capacity Utilization (%)	100%	100%	100%	100%	100%	100%
1. Total Inventory	8442486.17	8442486.17	8442486.17	8442486.17	8442486.17	8442486.17
Raw Materials in Stock-Total	3758181.82	3758181.82	3758181.82	3758181.82	3758181.82	3758181.82
Raw Material-Local	289090.91	289090.91	289090.91	289090.91	289090.91	289090.91
Raw Material-Foreign	3469090.91	3469090.91	3469090.91	3469090.91	3469090.91	3469090.91
Factory Supplies in Stock	12106.27	12106.27	12106.27	12106.27	12106.27	12106.27
Spare Parts in Stock and Maintenance	6046.36	6046.36	6046.36	6046.36	6046.36	6046.36
Work in Progress	302656.64	302656.64	302656.64	302656.64	302656.64	302656.64
Finished Products	605313.27	605313.27	605313.27	605313.27	605313.27	605313.27
2. Accounts Receivable	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64
3. Cash in Hand	31566.55	31566.55	31566.55	31566.55	31566.55	31566.55
CURRENT ASSETS	6160234.54	6160234.54	6160234.54	6160234.54	6160234.54	6160234.54
4. Current Liabilities	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64
Accounts Payable	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64
TOTAL NET WORKING CAPITAL REQUIRMENTS	4715870.90	4715870.90	4715870.90	4715870.90	4715870.90	4715870.90
INCREASE IN NET WORKING CAPITAL	0.00	0.00	0.00	0.00	0.00	0.00

Annex 2: Cash Flow Statement (in Birr)						
	CONSTRUCTION		PRODUCTION			
	Year 1	Year 2	1	2	3	4
TOTAL CASH INFLOW	969937.50	5685808.40	10279054.55	10736436.36	12060436.36	13384436.36
1. Inflow Funds	969937.50	5685808.40	1011054.55	144436.36	144436.36	144436.36
Total Equity	387975.00	2274323.36	0.00	0.00	0.00	0.00
Total Long Term Loan	581962.50	3411485.04	0.00	0.00	0.00	0.00
Total Short Term Finances	0.00	0.00	1011054.55	144436.36	144436.36	144436.36
2. Inflow Operation	0.00	0.00	9268000.00	10592000.00	11916000.00	13240000.00
Sales Revenue	0.00	0.00	9268000.00	10592000.00	11916000.00	13240000.00
Interest on Securities	0.00	0.00	0.00	0.00	0.00	0.00
3. Other Income	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CASH OUTFLOW	969937.50	969937.50	12988725.42	10582404.03	11603768.49	13146604.98
4. Increase In Fixed Assets	969937.50	969937.50	0.00	0.00	0.00	0.00
Fixed Investments	923750.00	923750.00	0.00	0.00	0.00	0.00
Pre-production Expenditures	46187.50	46187.50	0.00	0.00	0.00	0.00
5. Increase in Current Assets	0.00	0.00	4312164.18	616023.45	616023.45	616023.45
6. Operating Costs	0.00	0.00	7721558.87	8821592.28	9921625.69	11021659.10
7. Corporate Tax Paid	0.00	0.00	0.00	0.00	1200.00	523872.03
8. Interest Paid	0.00	0.00	955002.38	479213.70	399344.75	319475.80
9. Loan Repayments	0.00	0.00	0.00	665574.59	665574.59	665574.59
10. Dividends Paid	0.00	0.00	0.00	0.00	0.00	0.00
Surplus(Deficit)	0.00	4715870.90	-2709670.88	154032.33	456667.88	237831.39
Cumulative Cash Balance	0.00	4715870.90	2006200.02	2160232.36	2616900.23	2854731.62

Annex 2: Cash Flow Statement (in Birr): Continued						
	PRODUCTION					
	5	6	7	8	9	10
TOTAL CASH INFLOW	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00
1. Inflow Funds	0.00	0.00	0.00	0.00	0.00	0.00
Total Equity	0.00	0.00	0.00	0.00	0.00	0.00
Total Long Term Loan	0.00	0.00	0.00	0.00	0.00	0.00
Total Short Term Finances	0.00	0.00	0.00	0.00	0.00	0.00
2. Inflow Operation	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00
Sales Revenue	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00
Interest on Securities	0.00	0.00	0.00	0.00	0.00	0.00
3. Other Income	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CASH OUTFLOW	12474673.26	12439307.49	12383399.23	11661916.37	11661916.37	11661916.37
4. Increase In Fixed Assets	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Investments	0.00	0.00	0.00	0.00	0.00	0.00
Pre-production Expenditures	0.00	0.00	0.00	0.00	0.00	0.00
5. Increase in Current Assets	0.00	0.00	0.00	0.00	0.00	0.00
6. Operating Costs	11021659.10	11021659.10	11021659.10	11021659.10	11021659.10	11021659.10
7. Corporate Tax Paid	547832.71	592335.90	616296.58	640257.27	640257.27	640257.27
8. Interest Paid	239606.85	159737.90	79868.95	0.00	0.00	0.00
9. Loan Repayments	665574.59	665574.59	665574.59	0.00	0.00	0.00
10. Dividends Paid	0.00	0.00	0.00	0.00	0.00	0.00
Surplus(Deficit)	765326.74	800692.51	856600.77	1578083.63	1578083.63	1578083.63
Cumulative Cash Balance	3620058.36	4420750.87	5277351.65	6855435.28	8433518.91	10011602.54

Annex 3: DISCOUNTED CASH FLOW-TOTAL CAPITAL INVESTED

	CONSTRUCTION		PRODUCTION			
	Year 1	Year 2	1	2	3	4
TOTAL CASH INFLOW	0.00	0.00	9268000.00	10592000.00	11916000.00	13240000.00
1. Inflow Operation	0.00	0.00	9268000.00	10592000.00	11916000.00	13240000.00
Sales Revenue	0.00	0.00	9268000.00	10592000.00	11916000.00	13240000.00
Interest on Securities	0.00	0.00	0.00	0.00	0.00	0.00
2. Other Income	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CASH OUTFLOW	969937.50	969937.50	11022668.50	9293179.37	10394412.78	12017118.22
3. Increase in Fixed Assets	969937.50	969937.50	0.00	0.00	0.00	0.00
Fixed Investments	923750.00	923750.00	0.00	0.00	0.00	0.00
Pre-production Expenditures	46187.50	46187.50	0.00	0.00	0.00	0.00
4. Increase in Net Working Capital	0.00	0.00	3301109.63	471587.09	471587.09	471587.09
5. Operating Costs	0.00	0.00	7721558.87	8821592.28	9921625.69	11021659.10
6. Corporate Tax Paid	0.00	0.00	0.00	0.00	1200.00	523872.03
NET CASH FLOW	-969937.50	-969937.50	-1754668.50	1298820.63	1521587.22	1222881.78
CUMMULATIVE NET CASH FLOW	-969937.50	-1939875.00	-3694543.50	-2395722.87	-874135.65	348746.13
Net Present Value (at 18%)	-969937.50	-821980.93	-1260175.60	790502.33	784817.76	534532.90
Cumulative Net present Value	-969937.50	-1791918.43	-3052094.03	-2261591.70	-1476773.94	-942241.04

Annex 3: DISCOUNTED CASH FLOW-TOTAL CAPITAL INVESTED (Continued)						
	PRODUCTION					
	5	6	7	8	9	10
TOTAL CASH INFLOW	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00
1. Inflow Operation	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00
Sales Revenue	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00
Interest on Securities	0.00	0.00	0.00	0.00	0.00	0.00
2. Other Income	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CASH OUTFLOW	11569491.81	11613995.00	11637955.68	11661916.37	11661916.37	11661916.37
3. Increase in Fixed Assets	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Investments	0.00	0.00	0.00	0.00	0.00	0.00
Pre-production Expenditures	0.00	0.00	0.00	0.00	0.00	0.00
4. Increase in Net Working Capital	0.00	0.00	0.00	0.00	0.00	0.00
5. Operating Costs	11021659.10	11021659.10	11021659.10	11021659.10	11021659.10	11021659.10
6. Corporate Tax Paid	547832.71	592335.90	616296.58	640257.27	640257.27	640257.27
NET CASH FLOW	1670508.19	1626005.00	1602044.32	1578083.63	1578083.63	1578083.63
CUMMULATIVE NET CASH FLOW	2019254.31	3645259.32	5247303.63	6825387.26	8403470.89	9981554.52
Net Present Value (at 18%)	618808.92	510443.67	426204.93	355788.53	301515.71	255521.79
Cumulative Net present Value	-323432.12	187011.55	613216.48	969005.02	1270520.72	1526042.51
Net Present Value (at 18%)	1,526,042.51					
Internal Rate of Return	28.4%					

Annex 4: NET INCOME STATEMENT (in Birr)					
	PRODUCTION				
	1	2	3	4	5
Capacity Utilization (%)	70%	80%	90%	100%	100%
1. Total Income	9268000.00	10592000.00	11916000.00	13240000.00	13240000.00
Sales Revenue	9268000.00	10592000.00	11916000.00	13240000.00	13240000.00
Other Income	0.00	0.00	0.00	0.00	0.00
2. Less Variable Cost	7625037.07	8714328.08	9803619.09	10892910.10	10892910.10
VARIABLE MARGIN	1642962.93	1877671.92	2112380.91	2347089.90	2347089.90
(In % of Total Income)	17.73	17.73	17.73	17.73	17.73
3. Less Fixed Costs	249146.80	259889.20	270631.60	281374.00	281374.00
OPERATIONAL MARGIN	1393816.13	1617782.72	1841749.31	2065715.90	2065715.90
(In % of Total Income)	15	15	15	16	16
4. Less Cost of Finance	955002.38	479213.70	399344.75	319475.80	239606.85
5. GROSS PROFIT	438813.75	1138569.02	1442404.56	1746240.10	1826109.05
6. Income (Corporate) Tax	0.00	0.00	1200.00	523872.03	547832.71
7. NET PROFIT	438813.75	1138569.02	1441204.56	1222368.07	1278276.33
RATIOS (%)					
Gross Profit/Sales	5%	11%	12%	13%	14%
Net Profit After Tax/Sales	5%	11%	12%	9%	10%
Return on Investment	27%	28%	30%	23%	23%
Return on Equity	16%	43%	54%	46%	48%

Annex 4: NET INCOME STATEMENT (in Birr):Continued					
	PRODUCTION				
	6	7	8	9	10
Capacity Utilization (%)	100%	100%	100%	100%	100%
1. Total Income	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00
Sales Revenue	13240000.00	13240000.00	13240000.00	13240000.00	13240000.00
Other Income	0.00	0.00	0.00	0.00	0.00
2. Less Variable Cost	10892910.10	10892910.10	10892910.10	10892910.10	10892910.10
VARIABLE MARGIN	2347089.90	2347089.90	2347089.90	2347089.90	2347089.90
(In % of Total Income)	18	18	18	18	18
3. Less Fixed Costs	212899.00	212899.00	212899.00	212899.00	212899.00
OPERATIONAL MARGIN	2134190.90	2134190.90	2134190.90	2134190.90	2134190.90
(In % of Total Income)	16	16	16	16	16
4. Less Cost of Finance	159737.90	79868.95	0.00	0.00	0.00
5. GROSS PROFIT	1974453.00	2054321.95	2134190.90	2134190.90	2134190.90
6. Income (Corporate) Tax	592335.90	616296.58	640257.27	640257.27	640257.27
7. NET PROFIT	1382117.10	1438025.36	1493933.63	1493933.63	1493933.63
RATIOS (%)					
Gross Profit/Sales	15%	16%	16%	16%	16%
Net Profit After Tax/Sales	10%	11%	11%	11%	11%
Return on Investment	23%	23%	22%	22%	22%
Return on Equity	52%	54%	56%	56%	56%

Annex 5: Projected Balance Sheet (in Birr)

	CONSTRUCTION		PRODUCTION			
	Year 1	Year 2	1	2	3	4
TOTAL ASSETS	969937.50	6655745.90	8105614.20	8723044.99	9643111.32	10344341.16
1. Total Current Assets	0.00	4715870.90	6318364.20	7088419.99	8161111.32	9014966.16
Inventory on Materials and Supplies	0.00	0.00	2643434.11	3021067.56	3398701.00	3776334.45
Work in Progress	0.00	0.00	211859.65	242125.31	272390.97	302656.64
Finished Products in Stock	0.00	0.00	423719.29	484250.62	544781.95	605313.27
Accounts Receivable	0.00	0.00	1011054.55	1155490.91	1299927.27	1444363.64
Cash in Hand	0.00	0.00	22096.58	25253.24	28409.89	31566.55
Cash Surplus, Finance Available	0.00	4715870.90	2006200.02	2160232.36	2616900.23	2854731.62
Securities	0.00	0.00	0.00	0.00	0.00	0.00
2. Total Fixed Assets, Net of Depreciation	969937.50	1939875.00	1787250.00	1634625.00	1482000.00	1329375.00
Fixed Investment	0.00	923750.00	1847500.00	1847500.00	1847500.00	1847500.00
Construction in Progress	923750.00	923750.00	0.00	0.00	0.00	0.00
Pre-Production Expenditure	46187.50	92375.00	92375.00	92375.00	92375.00	92375.00
Less Accumulated Depreciation	0.00	0.00	152625.00	305250.00	457875.00	610500.00
3. Accumulated Losses Brought Forward	0.00	0.00	0.00	0.00	0.00	0.00
4. Loss in Current Year	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL LIABILITIES	969937.50	6655745.90	8105614.20	8723044.99	9643111.32	10344341.16
5. Total Current Liabilities	0.00	0.00	1011054.55	1155490.91	1299927.27	1444363.64
Accounts Payable	0.00	0.00	1011054.55	1155490.91	1299927.27	1444363.64
Bank Overdraft	0.00	0.00	0.00	0.00	0.00	0.00
6. Total Long-term Debt	581962.50	3993447.54	3993447.54	3327872.95	2662298.36	1996723.77
Loan A	581962.50	3993447.54	3993447.54	3327872.95	2662298.36	1996723.77
Loan B	0.00	0.00	0.00	0.00	0.00	0.00
7. Total Equity Capital	387975.00	2662298.36	2662298.36	2662298.36	2662298.36	2662298.36
Ordinary Capital	387975.00	2662298.36	2662298.36	2662298.36	2662298.36	2662298.36
Preference Capital	0.00	0.00	0.00	0.00	0.00	0.00
Subsidies	0.00	0.00	0.00	0.00	0.00	0.00
8. Reserves, Retained Profits Brought Forward	0.00	0.00	0.00	438813.75	1577382.77	3018587.32
9. Net Profit After Tax	0.00	0.00	438813.75	1138569.02	1441204.56	1222368.07
Dividends Payable	0.00	0.00	0.00	0.00	0.00	0.00
Retained Profits	0.00	0.00	438813.75	1138569.02	1441204.56	1222368.07

Annex 5: Projected Balance Sheet (in Birr): Continued

	PRODUCTION					
	5	6	7	8	9	10
TOTAL ASSETS	10957042.90	11673585.41	12446036.19	13939969.82	15433903.45	16927837.08
1. Total Current Assets	9780292.90	10580985.41	11437586.19	13015669.82	14593753.45	16171837.08
Inventory on Materials and Supplies	3776334.45	3776334.45	3776334.45	3776334.45	3776334.45	3776334.45
Work in Progress	302656.64	302656.64	302656.64	302656.64	302656.64	302656.64
Finished Products in Stock	605313.27	605313.27	605313.27	605313.27	605313.27	605313.27
Accounts Receivable	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64
Cash in Hand	31566.55	31566.55	31566.55	31566.55	31566.55	31566.55
Cash Surplus, Finance Available	3620058.36	4420750.87	5277351.65	6855435.28	8433518.91	10011602.54
Securities	0.00	0.00	0.00	0.00	0.00	0.00
2. Total Fixed Assets, Net of Depreciation	1176750.00	1092600.00	1008450.00	924300.00	840150.00	756000.00
Fixed Investment	1847500.00	1847500.00	1847500.00	1847500.00	1847500.00	1847500.00
Construction in Progress	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Production Expenditure	92375.00	92375.00	92375.00	92375.00	92375.00	92375.00
Less Accumulated Depreciation	763125.00	847275.00	931425.00	1015575.00	1099725.00	1183875.00
3. Accumulated Losses Brought Forward	0.00	0.00	0.00	0.00	0.00	0.00
4. Loss in Current Year	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL LIABILITIES	10957042.90	11673585.41	12446036.19	13939969.82	15433903.45	16927837.08
5. Total Current Liabilities	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64
Accounts Payable	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64	1444363.64
Bank Overdraft	0.00	0.00	0.00	0.00	0.00	0.00
6. Total Long-term Debt	1331149.18	665574.59	0.00	0.00	0.00	0.00
Loan A	1331149.18	665574.59	0.00	0.00	0.00	0.00
Loan B	0.00	0.00	0.00	0.00	0.00	0.00
7. Total Equity Capital	2662298.36	2662298.36	2662298.36	2662298.36	2662298.36	2662298.36
Ordinary Capital	2662298.36	2662298.36	2662298.36	2662298.36	2662298.36	2662298.36
Preference Capital	0.00	0.00	0.00	0.00	0.00	0.00
Subsidies	0.00	0.00	0.00	0.00	0.00	0.00
8. Reserves, Retained Profits Brought Forward	4240955.39	5519231.73	6901348.82	8339374.19	9833307.82	11327241.45
9. Net Profit After Tax	1278276.33	1382117.10	1438025.36	1493933.63	1493933.63	1493933.63
Dividends Payable	0.00	0.00	0.00	0.00	0.00	0.00
Retained Profits	1278276.33	1382117.10	1438025.36	1493933.63	1493933.63	1493933.63