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17031

FEASIBILITY STUDY ON THE MANUFACTURING OF REFRIGERATORS/FREEZERS AND BOTTLE COOLERS IN THE REPUBLIC OF MALAWI

MAY 1988

UNIDO-PROJECT-No. US/MLW/87/087

EXECUTIVE SUMMARY

A. PROJECT BACKGROUND

United Nations Industrial Development Organization (UNIDO) has commissioned a Feasibility Study for the Manufacturing of Refrigerators/Freezers and Bottle-Coolers in Malawi to examine whether this new plant would benefit the economy of Malawi, and determine the technical and financial parameters for such manufacturing plant.

The feasibility study has confirmed that such a plant will be economically feasible, taking into consideration the establishment of a joint venture between a German technical partner, Deutsche Finanzierungsgesellschaft für Beteiligungen in Entwicklungsländern GmbH (DEG) and local promotors as well as the Investment and Development Bank of Malawi, Limited.

The policy of the Malawian Government is to increase sustained economic growth and diversify the industrial sectors, and it also wishes to encourage the establishment of industries having a linkage effect on each other.

B. MARKET AND CAPACITY

Although the population of Malawi totals approx. 8.0 million, the group of consumers who might afford to buy a refrigerators is rather small in number which depends on the overall structure and urbanization of the country (see chapter 3.2.2).

The present demand in Malawi amounts to approx. 1,450 refrigerators/freezers and 300 bottle-coolers per year.

The supply is 100 % dependent on imports which have been declining since 1986. Due to enormously high prices, the demand decreased considerably. These high prices result from the high transportation costs, the allocation of foreign exchange, heavy import duties and surtaxes, the devaluation of the Malawi Kwacha, and substantial retail margins.

According to the Comfar calculation, the ex-factory prices including 35 % surtax will be as follows:

Product A (9 cft)	DM 1,500.00	=	MK 2,173.50
Product B (12 cft)	DM 1,800.00	=	MK 2,608,20
Product C (12 cft)	DM 1,300.00	=	MK 1,883.70

C. MATERIALS AND INPUTS

The manufacturing plant requires

850 CKD-kits for the 9-cft refrigerators/freezers,
600 CKD-kits for the 12-cft refrigerators/freezers,
300 CKD-kits for the 12-cft bottle-coolers.

D. LOCATION AND SITE

The factory building covers 1,200 sq.m.

The entire complex for factory, administration, parking lot and road requires approx. 6,420 sq.m.

The ideal location for the plant is in Blantyre. During field research, the Consultants together with the potential local sponsor identified a site of 6,420 sq.m which will be part of a total area of more than 40,000 sq.m

E. PROJECT ENGINEERING

The factory building is a one-storey industrial building (steel structure, brickwork walls) of 60 m x 20 m, comprising the manufacturing area, packing section, repair section, stores and utility sections as well as office facilities and toilets.

Based on the ample experience of the potential German technical partner, the technology that has been selected is according to German production standards.

The equipment will consist of a vacuum forming unit, foaming unit, final assembly unit, repair unit and some general equipment such as forklift, tools, workbenches etc.

Civil engineering work has been laid out on a turnkey-basis.

F. PLANT ORGANIZATION AND OVERHEAD COSTS

The Refrigerator Manufacturing Plant should be owned by a group of joint venture partners supported by Indebank (Malawi) and DEG (FRG).

The managers of the company should have reasonable experience. During construction and commissioning they will be assisted by an engineer from abroad. The technical manager should undergo a 1-month overseas training at the premises of the German technical partner.

There is no necessity to provide a foreign technical manager after commissioning due to the fact that constant communication and exchange of views between the local manufacturer and the German technical partner will be guaranteed.

The fixed investment consists of building and equipment which will be depreciated by 5 % respectively 20 %. Capital also is required for vehicles, technology and start-up as well as pre-production expenditures.

Apart from the financial charges, the factory overheads include indirect labour, cost of utilities, insurance and expendable items.

G. MANPOWER

The total number of employees is 26, i. e. 13 for production, 7 for administration and 6 for additional personnel.

It is envisaged to hire and train the key personnel during plant erection.

The technical manager has to be carefully selected.

For all branches of the required jobs it will not be difficult to find enough competent applicants in Malawi.

H. IMPLEMENTATION SCHEDULE

The manufacture of refrigerators/freezers and bottle-coolers can be achieved 12 months after the start of implementation works (for details see chapter 7.2).

I. FINANCIAL AND ECONOMIC EVALUATION

The financial evaluation shows under the conservative financial assumptions that the plant would generate sufficient revenues to meet its financial obligations with an IRR of 16.19. In addition to that, the project will create additional employment, save foreign exchange by import substitution and can be used to train local labour on the job for maintenance and repair of electrical appliances.

J. CONCLUSIONS

On the given assumptions the refrigerator manufacturing plant in Malawi is recommended for implementation for the following advantages:

- balance sheet projections over the period of 10 years show a very sound development;
- positive impacts on the economy, i. e. job creation, improvement of the industrial sector (first plant of this nature in Malawi);
- creation of a more competitive market, lower prices for the benefit of the consumers;
- reasonable layout of the capacity, which can be increased according to a possible increase of demand;
- high standard of the product which implies export possibilities; this depends on the choice of future activities in the marketing of the products;

- import substitution and foreign currency savings.

The major condition which has to be fulfilled by the Government of Malawi is

- the allocation of foreign exchange for the purchase of the raw materials.

Within the frame of the field research in March 1988, the Consultant had been assured by the Reserve Bank of Malawi that the allocation of foreign exchange up to an amount of DM 1,000,000.00 p. a. would not create any problem.

C O N T E N T S

2. MACRO-ECONOMIC BACKGROUND

5. PRODUCTION PROGRAMME

6. PROJECT SITE AND PHYSICAL INFRASTRUCTURE

6.1 Project Site

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6.3 Production and Office Buildings
6.3.1 Production Building
6.3.1.1 Specifications and Technical Data of the Production Building
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6.6.4.2 Transportation of Raw Materials, Components and Parts
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1. PROJECT BACKGROUND AND HISTORY

Industrial policy in the Republic of Malawi is designed to provide maximum freedom of action for private enterprises.

A deliberate effort has been made by the Government within the framework of the Five-Year Development Plan to increase sustained economic growth and diversify the industrial sector.

The government aims at the development of the industrial sector in order to reduce the dependency from external economic conditions and increase national employment opportunities.

The Government of Malawi wishes to encourage the establishment of industries having a linkage effect on each other, the utilization of technologies that are appropriate to the size of the domestic market and prevailing local conditions, and local participation in manufacturing industries.

The Government strongly welcomes foreign investment.

1.1 Regional Investment Promotion Meeting (Harare)

At UNIDO's Regional Investment Promotion Meeting for SADCC countries held from 3 to 7 November 1986 in Harare (Zimbabwe), the project to implement a Refrigerator, Deep Freezer and Cold Room Assembly Plant in the Republic of Malawi was identified.

1.2 Project Promotor and/or Initiator

It is to be noted that at the Regional Investment Promotion Meeting in Harare potential future partners (local and foreign) were joining their efforts to promote the project and provide a substantial input in preparatory work. The following parties/partners had been taken into consideration:

- Superfreeze Ltd. (local)
- Liebherr Industrieanlagen (foreign)
- The German Development Corporation (DEG) (foreign)
- The Malawi Development Corporation (MDC) (local)

A letter of intent was signed between the foreign technical partner and the local sponsor.

1.3 Visits

At the Harare Investment Promotion Meeting it was agreed that the promotors of the project follow an invitation of the Government to visit Malawi immediately upon closing of the meeting in order to review with the Government authorities the overall investment climate and discuss the envisaged joint venture with the local private partner. A delegation consisting of representatives of DEG, MDC, IPS Cologne and Project Consultants was favourably considering the proposal, signed a letter of intent and agreed that a UNIDO-supported feasibility study should determine whether or not to invest in this assembly plant.

Considering the figures obtained at the first visit to Malawi, the parties concerned were convinced that the implementation of this plant would have a positive impact on the national economy.

In order to foster the good relations between the parties involved and also to familiarize themselves with conditions in the Republic of Malawi, and particularly with the refrigerator market to be found there, the Consultants paid another visit to Malawi in March 1987.

Mid April 1987, the Government of Malawi put a request to UNIDO/UNDP for the financing of a comprehensive Feasibility Study to finally determine whether or not to invest in the Refrigerator Assembly Plant.

1.4 UNIDO-Contract and Formulation of the Project

On February 19, 1988 UNIDO commissioned Kriesel, Bohlaender & Associates to carry out a techno-economic Feasibility Study including market, technical, financial and economic considerations for a Refrigerator, Deep Freezer and Cold Room Assembly Plant in Malawi.

The feasibility study is determined by rather detailed terms of reference in compliance with the UNIDO document 10/401 "Guidelines for the Preparation of Industrial Feasibility Studies for Consulting Firms".

The feasibility study defines and analyses in detail all the critical elements that relate to the economics and technology of establishing the assembly including: the size and nature of current and optimal demand, projected demand; modes and channels of distribution of finished products, marketing strategy and sales promotion, related costs; feasible normal plant capacity taking into account demand, technology and available raw materials; the various raw material options, their availability, suitability and costs; the location and site of the plant, project engineering, selection of commercially proven process available for licensing and know-how transfer, list of equipment and machinery required for each section of the plant, their specifications and costs; infrastructure and other facilities in relation to the selected location and site; the manpower requirements; mode of implementation and time schedules and related costs, selection of engineering contractor; financial analysis: investment costs, production costs, sales revenues, project financing plan, and ascertaining commercial profitability: sensitivity analysis, factors affecting emerging profitability; costs of raw materials, selling price of finished products, constraints on cost reductions; economic evaluation: contribution of project to the national economy and SADCC member countries.

1.5 Fact Finding Mission

Between March 7 and March 25, 1988 the consultant's study team visited the Republic of Malawi:

- Mr. Hans-Henning K. iesel, team leader,
- Mr. Rolf Bohlaender, process engineer.

During the mission of the study team, support was provided by UNDP/UNIDO, Mrs. Barsotelli, The Ministry of Trade, Industry & Tourism, Mr. Cholimgulo and Mr. Givah, the potential local sponsor Superfreeze Ltd., Mr. K. Okhai, Mr. P. Chimbe and Mr. Muwamba.

This support was quite helpful and had a favourable effect on the mission.

In order to fully comply with the TOR of the feasibility study, the team had to investigate into all commercial, technical, infrastructural and political impacts applicable to the project.

Annexes 1 and 2 give a summary of the persons who had been contacted by the team in Malawi.

2. MACRO-ECONOMIC BACKGROUND

2.1 Location

Malawi is situated in the south-eastern corner of Central Africa covering an area of 118,485 square kilometres of which approximately 28,000 square kilometres are inland waters. Malawi is a land-locked country, bordered by Tanzania to the north, Mozambique to the east, south and south-west, and Zambia to the west. It is 901 kilometres long with varying widthsfrom 80 to 161 kilometres.

The geographical character of Malawi is dominated by Lake Malawi which stretches for 568 kilometres along the spine of the country with varying widths of 16 to 80 kilometres.

To the west of the Lake, the land rises in a plateau of 915 to 1,220 metres. The southern part of Malawi is dominated by massive Zomba and Mulanje mountains. Mulange Mountain, which is the highest in Central Africa, rises to 3,050 metres.

2.2 Climate

Malawi has a tropical continental climate with some maritime influences. Mountain areas are cool with annual temperatures ranging from 14.4° C to 17.8° C. In the low-lying areas, temperatures above 37° C may be registered during the hottest months. Frost is quite common in places which are above 1,830 metres.

Malawi has three seasons: the hot dry, the cool dry and the hot wet season. It is cool and dry from May to August. July is the coldest month, with a maximum temperature of 22.2° C and a minimum of 11.7° C. It is hot and dry in September, followed by October and November as the hottest months when the mean maximum temperature is 29.4° C. Those temperatures are sustained until the rains start in November. Toward April, temperatures start to decrease as the cool season is about to begin. The raining season extends from November to April. Annual rainfall ranges from 635 to 3.050 millimetres according to altitude and position of the area to the rain-bearing winds.

2.3 Official Language

Chichewa is the national language while English is the official business language.

2.4 Population

The latest population census was carried out in 1987 (see Table 3).

The results of the census give a total population of about 8 million, while the former census in 1977 gave a total population of 5.5 million. This implies that from 1977 to 1987 the population has increased by 44 per cent. In addition, the results indicate an intercensal population growth rate of 3.7 per cent per annum during the 1977 - 87 intercensal period.

Malawi's population is predominantly rural with about 89 per cent living in rural areas. About 8 per cent of the total population live in the four major urban areas of Blantyre City, Lilongwe City, Mzuzu City and Zomba Municipality.

2.4.1 Main Urban Centres

Lilongwe:

It has been Malawi's capital city since January 1975. In 1987, the population was 234,000. Lilongwe is centrally situated in an agriculturally productive area lying on the hub of communication, artery-crisscrossed by the north-south and east-west roads as well as the Salimica-Michinji railway and the Kamuzu International Airport.

Blantyre:

In the southern region, it is Malawi's major commercial and industrial centre with a population of 332,000 (1987). Served by a railhead in Limbe 8 kilometres away, Blantyre became a distribution point of the rest of Malawi. Limbe and Blantyre were amalgamated in 1956. Since 1966 Blantyre is served by Chilenka Airport, a railway line and roads to all directions in Malawi.

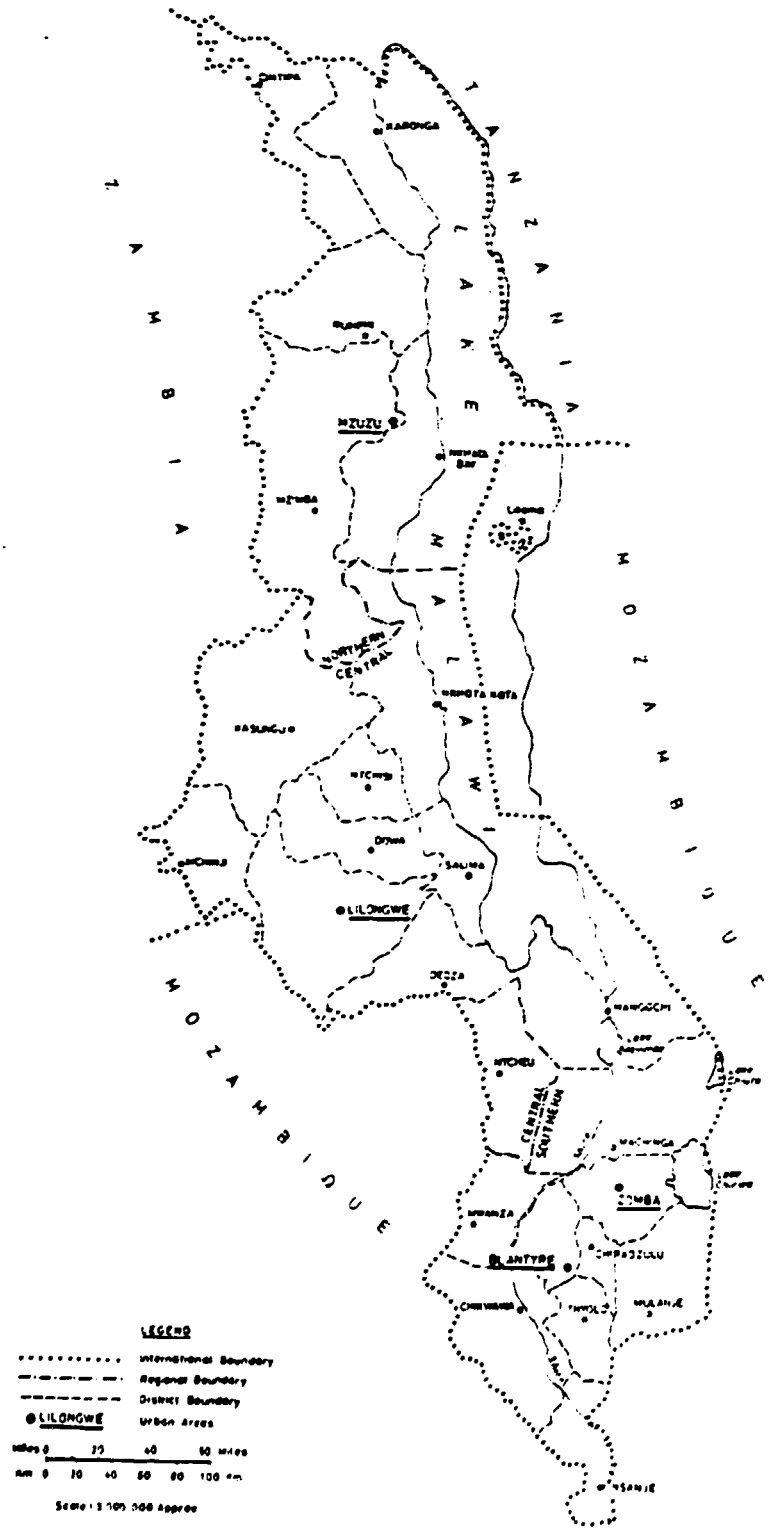
Zomba:

The former capital is now a university town with Chancellor College, the main campus of the University of Malawi. In 1987 the population was 43,000. Zomba is now a municipality. It lies 70 kilometres north-east of Blantyre.

Mzuzu:

This is the major commercial and industrial centre of the northern region with a population of 44,000.

MAP OF MALAWI



2.5 Labour and Wages

With a stagnation of economic activity in many major sectors, the average number of paid employees in Malawi in 1981, 1982 and 1983 was lower than in 1979 and 1980. In 1984 there were on the average (see Table 2) over 380,900 employees of which about 49,200 were in the manufacturing sector, 177,700 in the agricultural sector and 25,900 in the building and construction sector.

Malawi's labour force is stable and easily trainable. The training of many skills continues at various institutions in the country and abroad in cases where facilities are not available locally. The most difficult posts to fill are in the professional technical and managerial category.

2.5.1 Minimum Rates and Conditions of Employment in Malawi

General: The Regulation of Minimum Wages and Conditions of Employment Act (Cap. 55:01), the Employment Act (Cap. 55:02), and The Workmen's Compensation Act (Cap. 55:03) form the basis of Labour Legislation in Malawi.

Normal hours of work: The duration of the working week should normally not exceed 48 hours, but special to the building industry, it should not exceed 45 hours in any one week. In the case of a watchman, it should not exceed 72 hours.

Overtime: The rate of pay for overtime on a working day is time and a half. For overtime on a public holiday and/or rest day double wages are paid.

Annual leave: Employees on daily or hourly contracts one and a half days for each completed month of service.

Rest day: An employee is to be granted one day off duty each week (usually Sunday is taken as a rest day).

Sick leave: An employee is entitled to 12 days leave of absence on full pay and 12 days leave of absence on half pay in any one year of service with an employer.

Employment of labour: The employer is free to engage labour through advertisement in the local papers and/or Employment Exchanges freely available at all Labour Offices throughout the country.

Social Security: Government involvement in Social Security is limited to the enforcement of the Workmen's Compensation Act which requires employers to either insure against or pay compensation for industrial injuries incurred by workers earning MK 1,000 per annum or less (and for workers regardless of their level of pay whose work is of manual nature).

Employers must either privately insure all their workmen against industrial injury, or alternatively, be responsible themselves for the payment of the following benefits:

- Temporary disability:
  The benefit of 50 % of earnings which is paid after 3 waiting days. This benefit is paid until recovery or permanent degree of disability is ascertained.

- Permanent total disability:
  A lump sum is paid which is equivalent to 48 months' earning, subject to a minimum of MK 80.00.

- Permanent partial disability:
  A lump sum benefit is paid on the total disability benefit being proportionate to the degree of disability as defined by the schedule in the law and so accorded by a Medical Officer.

- Survivor benefit:
  A lump sum of 36 months' earnings is paid to the deceased's dependents, less any disability benefit already paid to the deceased.

2.6 Currency

The currency in Malawi is the Malawi Kwacha, and it is divided into 100 Tambala.

Exchange rate (14/03/88):

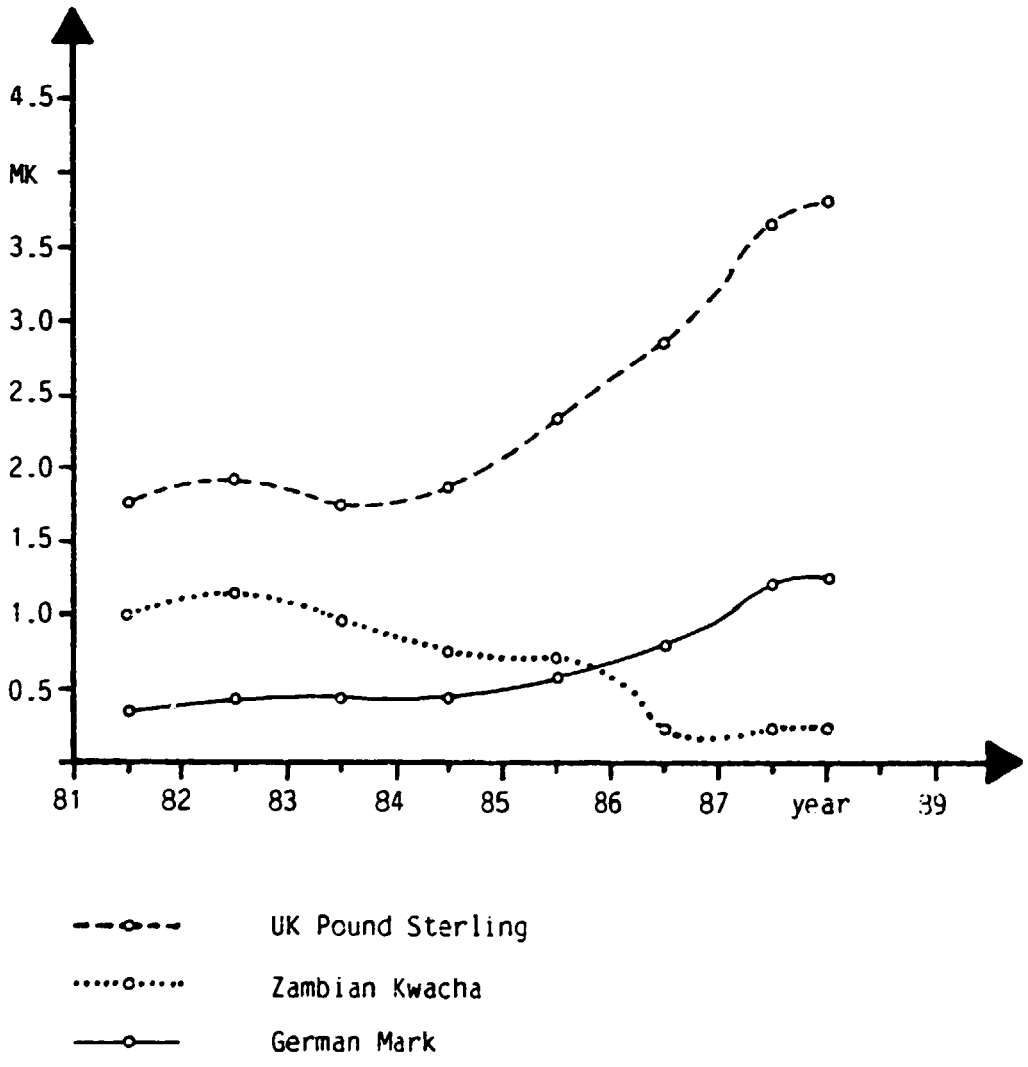
1.00 Deutsche Mark (German Mark)	≙ 1.4991 Kwacha
1.00 Schweizer Franken (Swiss Franc)	≙ 1.8185 Kwacha
1.00 E.E.C.	≙ 3.1008 Kwacha

2.6.1 Development of the Malawi Kwacha

Until November 1973, the Malawi Kwacha was pegged to the Pound sterling; from then to June 8, 1975 it was based on a weighted average of the Pound sterling and the US dollar; from August 1985 is was pegged to the Special Drawing Right (SDR); on April 24, 1982 it was devaluated by 15 % against the SDR and in September 1983 by 12 %. With effect from January 1984, the Kwacha was linked to a basket of seven currencies comprising the US dollar, pound sterling, Deutsche Mark, Rand, Yen, the French franc and the Dutch guilder. It was further devaluated by 15 % on April 2, 1985, by 10 % on August 16, 1986 and on February 7, 1987, by 20 %.

Table 1

MALAWI KWACHA PER UNIT OF FOREIGN CURRENCY



2.7 Exchange Control

Exchange control is administered by the Reserve Bank of Malawi under authority delegated by the Minister of Finance. Import and export policies are formulated by the Minister of Trade, Industry and Tourism who is also responsible for the issue of import and export licences.

There are no restrictions on the inward flow of capital except that the taking up of loans from abroad by residents requires prior Exchange Control approval, which is normally granted, provided that the terms of repayment, including the servicing costs, are acceptable. Outward transfers of capital are controlled, but non-residents are permitted to repatriate their investment when they have satisfied the Exchange Control that the original investment was made with funds brought into the country. In general, there are no restrictions on the transfer abroad of dividends and profits of foreign-owned companies provided that use is not made of local credit facilities at that time. Contractual interest on loans received from foreign sources is also remittable.

Residents may not purchase any foreign securities without specific Exchange Control approval. In general, residents are not permitted to transfer capital abroad and, with certain exceptions, they are required to offer for sale to an Authorized Dealer any foreign exchange which accrues to them. Foreign nationals employed in Malawi on contract and holding a temporary employment permit are allowed to remit part of their current net earnings.

Generous allowances are given to emigrants but any funds in excess of the permitted limits may be withheld for transfer at a later date.

Residents including resident financial institutions, require prior approval of the Exchange Control to make loans to non-residents or to resident firms controlled directly or indirectly from outside Malawi. In the latter case, approval may be withheld if it is felt that excessive recourse is being made to local borrowing, and that insufficient working capital has been brought from abroad.

Remittance of Earnings:
Foreign nationals employed in Malawi on contract and holding temporary employment permits are allowed to remit to their country of normal residence up to two-thirds of their net earnings (i. e. gross salary less deductions for income tax, loan repayments and other liabilities in Malawi). Remittances will normally be permitted only on a monthly basis and are not cumulative.

Remittance of Personal Maintenance:
Regular remittance may be approved to specified close relatives permanently resident outside Malawi and genuinely in need of assistance. Approved applications are reviewed annually. Blocked accounts for non-residents held with Authorized Dealers -

- On departure of the emigrant, the balance of his funds is blocked, but on each anniversary of his departure from Malawi, he is permitted to transfer to his new country of residence a reasonable amount subject to a certain limit.

- All entries to such accounts require prior approval of the exchange control authorities.
- Normally, approval is given for the investment of balances on blocked accounts in an approved manner.
- Interest on blocked account balances is transferrable to the owner's country of residence on application.

Remittance of Dividends and Profits:

- Dividends and profits due to non-resident shareholders are transferred abroad without restrictions, provided local taxes have been paid and no recourse is being made to local borrowing.

All the foregoing require the prior approval of the Exchange Control authorities.

Table 2
NUMBER OF PAID EMPLOYEES
AND AVERAGE MONTHLY EARNINGS
BY INDUSTRY GROUP AND BY QUARTER
IN 1984 *)

Industry group	1st Quarter		2nd Quarter	
	No. of Employees ('000)	Average Earnings (Kwacha)	No. of Employees ('000)	Average Earnings (Kwacha)
ALL INDUSTRIES	397.4	54.56	399.2	56.50
Agriculture, Forestry+Fishing	200.7	21.58	188.5	23.29
Mining+Quarrying	0.4	62.97	0.3	72.37
Manufacturing	49.0	65.45	51.3	65.83
Electricity+Water	4.6	99.80	4.6	103.73
Building + Construction	27.0	50.07	26.6	50.89
Wholesale+Retail Trade, Hotels + Restaurants	24.8	102.70	35.5	85.97
Transport, Storage, Communication	21.6	82.82	22.0	81.92
Financing, Insurance, Real Estate + Business Services	12.0	220.09	11.9	217.13
Community, Social + Personal Services	57.3	90.5	58.5	93.94

*) Source: Employment and Earnings Annual Report
1983 - 85
National Statistical Office, Zomba

(Table 2 continued)

NUMBER OF PAID EMPLOYEES
AND AVERAGE MONTHLY EARNINGS
BY INDUSTRY GROUP AND BY QUARTER
IN 1984 *)

Industry Group	3rd Quarter		4th Quarter	
	No. of Employees ('000)	Average Earnings (Kwacha)	No. of Employees ('000)	Average Earnings (Kwacha)
ALL INDUSTRIES	359.8	61.01	367.1	65.59
Agriculture, Forestry+Fishing	153.0	24.46	168.5	26.42
Mining + Quarrying	0.2	76.61	0.2	78.51
Manufacturing	47.6	72.55	49.1	86.27
Electricity+Water	5.2	97.02	5.1	97.08
Building + Construction	25.4	51.89	24.7	55.23
Wholesale+Retail Trade, Hotels + Restaurants	38.2	80.10	28.4	177.72
Transport, Storage Communication	22.1	82.96	22.3	88.45
Financing, Insurance Real Estate + Business Services	11.3	234.75	11.0	238.16
Community, Social + Personal Services	56.8	94.65	57.8	96.58

*) Source: Employment and Earnings Annual Report
1983 - 85
National Statistical Office, Zomba

Table 3

POPULATION BY SEX, AGE AND HIGHEST LEVEL OF EDUCATION ATTAINED AS WELL AS PERCENTAGE FOR 1987 *)

	Malawi	Northern Region	Central Region	Southern Region
Total	7,982,607 (100 %)	907,121 (100 %)	3,116,038 (100 %)	3,959,488 (100 %)
Male	3,880,100 (48.6 %)	440,541 (48.6 %)	1,530,166 (49.1 %)	1,909,393 (48.2 %)
Female	4,102,507 (51.4 %)	466,580 (51.4 %)	1,585,072 (50.9 %)	2,050,055 (51.8 %)
Age				
0 - 4	1,396,005 (17.5 %)	159,794 (17.6 %)	571,519 (18.4 %)	664,692 (16.8 %)
5 - 14	2,290,881 (28.7 %)	259,460 (28.6 %)	882,405 (28.3 %)	1,149,016 (29.0 %)
15 - 64	3,978,483 (49.8 %)	451,375 (49.8 %)	1,546,476 (49.6 %)	1,980,632 (50.0 %)
64 +	317,238 (4.0 %)	36,452 (4.0 %)	115,638 (3.7 %)	165,108 (4.2 %)
Highest Level of education attained				
None	3,613,807 (54.9 %)	246,803 (33.0 %)	1,420,611 (55.8 %)	1,946,393 (59.1 %)
Primary	2,748,049 (41.7 %)	464,642 (62.2 %)	1,046,620 (41.1 %)	1,236,787 (37.5 %)
Secondary + above	224,746 (3.4 %)	35,882 (4.8 %)	77,288 (3.0 %)	111,576 (3.4 %)

*) Source: Population and Housing Census 1987
Preliminary Report
National Statistical Office, Zomba

2.8 Structure of Economy

2.8.1 Agriculture

Malawi's economy is predominantly agriculture which accounts for 43 % of the total GDP and provides jobs to approximately 85 % of the population. Agricultural products account for 90 % of the country's export, and the growth rate of the economy is largely dependent on the performance of this sector.

The agricultural sector is divided into the distinct sectors: small holder production which accounts for 85 % of the total agricultural output and concentrates on food crops, and estate farming which accounts for the resulting 15 %, but provides almost three quarters of the total exports, principally in the three main cash crops: tobacco, sugar and tea.

2.8.2 Industry

Malawi's industrial development policy aims at the substitution of imports particularly in the sector of consumer goods. The realization of this aim is impeded by the fact that Malawi, with the exception of minor deposits of low-grade coal and limestone, does not have any significant natural resources.

The industrial sector is broadly made up of three sub-sectors:

- a group of medium-scale establishments concerned with the processing of tobacco, tea and sugar for exports,
- a group of medium-scale establishments concerned largely, but not wholly with import substitution, e. g. the manufacturing of foodstuff, beverage, cigarettes, textiles, blankets, footwear, soaps and detergents, matches, cement and ethanol,
- a large group of small-scale enterprises, many in the informal sector, concerned very largely with supplying the domestic market with a wide range of manufactured goods, e. g. bricks, farm-tools, kitchen-utensils and basket ware.

2.8.3 Trade

Malawi is a small economy where foreign trade plays a vital rôle. Exports provide an essential outlet for goods which cannot be absorbed in the local market, and generate the foreign earnings that are vital for the imports needed both as inputs into agriculture and industry and as consumer goods. Boosting the level of foreign exchange earnings from both traditional and non-traditional exports is seen by the Government as a central tenet of economy over the next decade.

2.9 Economic Conditions in Malawi in 1987 *)

2.9.1 Overall Performance

Economic activity in 1987, as measured by GDP, showed little change from the previous year. Real GDP declined by 0.2 per cent during 1987 (see Table 2), reflecting an economy which was adjusting to its changed economic environment (GDP data, starting with 1987, has a provision for new series (NS) reflecting revisions in the calculation of government services, wages and salaries, other rent and miscellaneous expenditures statistics. Data comparisons with prior year are made using old series (OS) to preserve consistency). The overall performance in other sectors, such as manufacturing, construction, transport and communications, and financial and professional services, recorded negative growth rates, except the agricultural sector which registered a marginal growth of about 1.9 per cent. The worsening balance of payments position which started in 1986, and continued to the first half of 1987, contributed much to the weak growth. However, during the last quarter of 1987, the balance of payments position improved modestly due to increased tobacco exports and capital/grant inflows.

*) Source: Economic Report 1988
Budget Document No. 4

Table 4

GROSS DOMESTIC PRODUCT (GDP),
BY SECTOR OF ORIGIN AT
1978 CONSTANT FACTOR COST 1984 - 1988

(MK million)

	1984	1985	1986	1987 OS	1987 NS	1988 Fore-cast
Agriculture	306.5	308.0	311.5	317.3	317.3	319.9
small-scale	240.9	242.0	246.0	247.2	247.2	246.3
large-scale	65.6	66.0	65.5	70.1	70.1	73.6
Manufacturing	100.6	101.1	101.1	100.2	100.2	102.1
Electricity+Water	16.1	16.4	17.3	18.7	18.7	19.6
Construction	29.6	39.3	49.5	36.6	36.6	37.9
Distribution	104.1	113.9	108.0	109.8	109.8	110.3
Transport + Communication	47.0	49.5	52.2	50.2	50.2	50.4
Financial+Profess-ional Services	51.2	54.9	55.8	54.2	54.2	55.3
Ownership of Dwellings	34.6	36.2	37.2	37.4	37.4	38.4
Private Social + Community Services	34.3	35.6	36.4	37.4	37.4	38.7
Producers of Govern-ment Services	101.7	106.5	116.1	120.8	128.3	127.9
Unallocable Finance Charges	-20.6	-22.1	-22.6	-21.8	-21.8	-22.2
GDP at Factor Cost	805.1	839.3	862.4	860.8	868.3	878.3
% Change from Preceding Year	4.5	4.2	2.8	- 0.2	0.7	1.2

The value of total exports increased by 32.4 per cent in 1987. Some of this increase was largely contributed by tobacco export prices which increased by 46.0 per cent in nominal terms, apart from a reflection of the 20.0 per cent devaluation of the Malawi Kwacha earlier in 1987, and the general increase in international prices for tobacco in 1987.

The value of tea declined by 11.3 per cent in 1987 as a result of continued weak markets. The situation was aggravated by poor weather conditions which caused a decline in the production and exportable volume of tea.

There was a substantial increase in the volume of pulses exported in 1987 (170.0 per cent). This was an exceptionally high increase considering that nominal unit values of pulses increased by only 10.7 per cent.

2.9.2 Growth in Output

GDP at constant factor cost registered a decline of 0.2 per cent in 1987 compared to a positive growth of 2.8 per cent in 1986. Most sectors in 1987 registered negative growth rates, with the construction sector showing the largest decline of 26.1 per cent. The slight growth that occurred in the agriculture sector was mainly due to a 7.0 per cent increase in the large-scale agricultural output other than the small-scale agriculture sector which almost stagnated, growing only by 0.5 per cent.

The balance of trade deteriorated in 1987 to a deficit of MK 43.6 million, after a partial improvement in 1986. The devaluation of the Malawi Kwacha early in 1987 led to an increase in the Kwacha value of imports. Thus the import volume is estimated to have increased by 11.0 per cent over the 1986 level, which was, nonetheless, well below historic levels. International transportation problems also contributed to the high import costs.

The utilities sector grew by 8.1 per cent in 1987. This growth was mainly due to increased sales of water as well as electricity. In the large-scale utilities sector, the quantity of water sold increased by 11.1 per cent while the volume of electricity sales rose by 9.0 per cent.

The value added in the manufacturing sector decreased slightly by 0.8 per cent. Manufacturing output in industries with a high import content were especially constrained by the worsening balance of payments position which started in 1986 and continued through to the first half of 1987. Although the balance of payments position improved later in the year it had very little impact.

2.9.3 Domestic Supply and Demand

The supply of goods to the domestic economy grew by 24.7 per cent in 1987, similar to that of the nominal GDP (see Table 5). The deficit on merchandise and non-factor services, as a component of domestic supply, increased by 22.0 per cent in the same year, whilst the level of imports increased during the year.

Table 5

GDP AT CURRENT PRICES
AND DOMESTIC SUPPLY AND DEMAND

(MK million)

	1984	1985	1986
A. Domestic Supply			
GDP at 1978 Factor Cost	805.1	839.3	862.4
GDP at 1978 Market Prices	890.1	930.0	940.6
GDP Deflator	191.8	217.6	244.7
GDP at Current Market Prices	1,706.9	2,021.7	2,301.5
of which Indirect Taxes	178.1	216.0	216.4
Plus: Imports of Merchandise and Non-Factor Services (Net)	- 33.2	93.2	56.0
Total Supply	1,673.7	2,114.9	2,357.5
B. Domestic Demand			
Gross Fixed Capital Formation	222.7	259.5	242.9
Stock Building	- 2.8	102.2	5.3
Consumption	1,453.8	1,753.2	2,109.2
Government	268.0	344.0	433.8
Private	1,185.8	1,409.2	1,675.4
Total Demand	1,673.7	2,114.3	2,357.4

Table 5 continued

GDP AT CURRENT PRICES
AND DOMESTIC SUPPLY AND DEMAND

(MK million)

	OS 1987	NS 1987	1988
A. Domestic Supply	860.8	868.3	878.3
GDP at 1978 Factor Cost	860.8	868.3	878.3
GDP at 1978 Market Prices	935.9	943.4	954.2
GDP Deflator	306.8	306.0	365.2
GDP at Current Market Prices	2.871.1	2,886.2	3,484.3
of which Indirect Taxes	263.2	263.2	322.1
Plus: Imports of Merchandise and Non-factor Services (Net)	68.3	68.3	145.3
Total Supply	2,939.4	2,954.5	3,629.6
B. Domestic Demand			
Gross Fixed Capital Formation	332.8	332.8	399.0
Stock Building	23.2	23.2	47.9
Consumption	2,583.4	2,598.6	3,182.7
Government	491.0	493.0	500.5
Private	2,092.4	2,105.6	2.682.4
Total Demand	2.939.4	2,954.6	3.629.6

The overall consumption expenditure increased by 22.5 per cent in 1987 in nominal terms, although as a percentage of GDP, consumption expenditure decreased by 1.6 points, from 91.6 per cent in 1986 to 90.0 per cent in 1987. Private consumption in 1987 maintained the level of consumption in relation to GDP of 72.8 per cent attained in 1986.

Domestic savings increased from MK 192.3 million in 1986 to MK 287.7 million in 1987. This reflected the decreased share of GDP going to government and private consumption. National savings increased from MK 108.9 (representing 4.7 per cent of GDP). This improvement resulted from the increased domestic savings and private transfers.

The large-scale private sector increased its investment by about 156.7 per cent in 1987, after a big reduction in 1986. As a percentage of GDP, this was an improvement from 2.4 per cent of GDP in 1986, to 4.3 per cent of GDP in 1987.

2.9.4 Money and Prices

Inflation, as measured by the composite retail price index, increased to26.7 per cent in 1987 which is significantly higher than the 1986 rate of 14.9 per cent. The increase in consumer price inflation in 1987 is attributed to, among other things:

a) increased domestic borrowing by Government to finance the public sector deficit;

b) a general increase in import prices arising from world inflation and transport difficulties; and

c) the depreciation of the Malawi Kwacha in February 1987 relative to Malawi's major trading partner currencies.

The main highlights in 1987 in terms of money and credit were liberalization of lending rates in July 1987, as a result, the minimum lending rate p.a. rose to 20.0 per cent.

2.9.5 Balance of Payments

Exports (f.o.b.) in 1987 amounted to MK 611.6 million, up by 32.4 per cent over the preceding year. The increase was largely attributed to better export values of tobacco, sugar and pulses.

Total imports (f.o.b.) amounted to MK 393.1 million in 1987, up by 51.4 per cent on the preceding year. The increase is partly accounted for by a rise in prices. In view of the above, there was a merchandise trade surplus of MK 218.5 million, in 1987, an increase of 24.6 per cent compared to the previous year.

The current account in 1987 registered a deficit of MK 149.2 million, an increase of 7.0 per cent over 1986. The deficit on non-factor services amounted to MK 286.8 million, a 24.0 per cent rise over the 1986 figure. The deficit on factor services also rose in 1987 to MK 134.6 million mainly due to increases in interest payments on external debt. Such payments amounted to MK 113.0 million in 1987 as compared to MK 99.6 million in 1986. In the public sector alone, interest payments amounted to MK 90.4 million in 1987. The current account deficit of MK 149.2 million in 1987 would have been higher if private transfers or receipts had not gone up by 77.3 per cent over 1986 to MK 83.5 million in 1987.

The overall balance after debt relief in 1987 was MK 85.5 million. This improvement in the balance of payment was partly attributed to the debt relief and increased capital inflows in 1987.

2.9.6. External Trade

Total exports (f.o.b.) in 1987 are estimated to have increased by about 32.0 per cent from MK 462.1 million in 1986 to MK 611.6 million in 1987 (see Table 8). Domestic exports are estimated to have amounted to MK 598.0 million in 1987, an increase of about 34.0 per cent.

Table 6

PRINCIPAL DOMESTIC EXPORT COMMODITIES
1985 - 88

(MK million)

	1985	1986	1987 (Estimate)	1988 (Fore-cast)
Agricultural crops:				
Tobacco	187.4	244.3	370.1	395.2
Tea	91.4	68.4	60.6	81.8
Sugar	44.4	39.9	63.5	73.6
Groundnuts	6.0	15.5	13.2	34.7
Rice	0.3	1.1	-	-
Cotton	13.0	2.1	0.8	-
Pulses	8.3	9.1	26.1	13.5
Coffee	11.6	22.5	19.8	28.2
Maize	29.4	12.8	-	-
Total	391.8	415.7	554.1	627.0
Other Crops including Manufacturing	27.3	30.2	43.9	37.5
Total Domestic Exports	419.1	445.9	598.0	664.5
Re-exports	10.6	16.2	13.5	13.4
Total	429.7	462.1	611.5	677.9

The value of domestic exports increased from MK 445.9 million in 1986 to MK 598.0 million in 1987. Re-exports, which exhibited continuous year-on-year increases since 1983, reversed their trend by declining to MK 13.5 million in 1987 from a level of MK 16.2 million in 1986.

The main export crop continued to be tobacco which contributed MK 370.1 million in 1987 compared to MK 244.3 million in 1986. The significant increase was mainly attributed to a 46.0 per cent rise in prices.

In 1987, total imports (c.i.f.) are estimated to have risen by about 37.0 per cent from MK 478.0 million in 1986 to MK 655.1 million in 1987. The increase was attributed to a rise in both volume and prices.

Table 7

IMPORTS BY END-USE

(MK '000)

	1985	1986	1987**
Consumer Goods	62,004	64,816	33,611
	(13)	(14)	(11)
Plant, Machinery + Equipment	70,405	66,475	67,350
	(14)	(14)	(23)
Transport Means	62,833	71,043	30,108
	(13)	(15)	(10)
Material for Building	29,782	26,138	12,534
and Construction	(6)	(5)	(4)
Basic and Auxiliary	178,273	158,771	101.983
Materials for Industry	(36)	(33)	(34)
Parts, Tools and	16,288	17,898	9,646
	(3)	(4)	(3)
Commodities for Inter-			
mediate + Final Consumption	70,859	69,887	40,403
	(14)	(15)	(14)
Miscellaneous and Other	2,111	2,961	1,588
Transaction	(-)	(-)	(-)
Total	492,552	477,990	297,223

** First 2 quarters of 1987 Estimate.

Figures in brackets are percentage shares of the total.

The composition of imports for the first two quarters of 1987, the latest period for which data are available, is shown in Table 7 . The statistics indicate that an increase in the share of total imports is expected for plant, machinery and equipment as well as basic and auxiliary materials for industry.

Table 8

VISIBLE TRADE BALANCE 1986 - 88

	1986	1987 (Estimate)	1988 (Forecast)	% Change 1987 on 1986	% Change 1988 on 1987
Exports:					
Domestic	445,856	598,025	664,524	34.1	11.1
Re-exports	16,236	13,535	13,400	- 16.6	- 1.0
Total	462,101	611,560	677.924	32.3	10.9
Imports (c.i.f.)	477,990	655,118	785,400	37.1	19.9
Visible Trade Balance	-15,889	-43,558	-107.476	-174.1	-146.7

The outlook for 1988 is for a further worsening of the trade balance to a deficit of MK 107.5 million. This will be attributed to a decline in export volumes coupled with an expected increase in import prices of 20.0 per cent.

2.9.7 Terms of Trade

The unit value of imports and exports increased in 1987 by 24.0 per cent and 28.0 per cent respectively. As a result, the commodity terms of trade improved somewhat from an index of 87.78 in 1986 to 91.23 in 1987.

Table 9

TRADE INDICES 1983 - 88
(1980 = 100)

	1983	1984	1985	1986	1987 (Estimate)	1988 (Forecast)
Imports:						
Volume	80.42	64.14	81.29	78.99	87.76	87.76
Unit value	138.48	164.18	173.67	223.20	275.67	330.55
Domestic Exports:						
Volume	109.22	79.35	94.79	98.93	102.06	97.72
Unit value	156.81	193.89	175.13	195.92	251.57	291.00
Commodity Terms of Trade	113.24	118.10	100.84	87.78	91.23	88.04
Income Terms of Trade	123.68	93.71	93.71	86.84	03.06	86.03

The structure of the country's external trade has long been dominated by the exchange of three primary commodities, namely tobacco, tea and sugar for imported consumer and intermediate manufactured goods. These traditional commodities are sold in a wide range of markets, although a large proportion of the tea has always gone to the United Kingdom. Non-traditional, largely manufactured exports, are sold almost entirely within the region and include such items as textiles, processed foods and fishing nets.

The pattern of import trade has shown a number of significant changes over 20 years. The dominant supplier changed from United Kingdom to the Republic of South Africa which now supplies over 40 % of the total. The United States of America, West Germany, Japan, the United Kingdom, France and Zimbabwe are the other major suppliers (see Table 10). Although a member of the Preferential Trade Area (PTA) for eastern and southern African states, trade with the region is relatively small and has generally been declining in recent years.

Since 1980, however, foreign trade has suffered very directly from the closure of Malawi's traditional trade routes through Mozambique to the Indian Ocean ports of Beira and Nacala.

The trade gap, the amount by which total exports fall short of total imports, widened by about 174.0 per cent from MK 15.9 million in 1986 to MK 43.6 million in 1987. The worsening situation was mainly due to a significant increase in both the volume and value of imports in 1987 over 1986. which are estimated to have risen by about 11.0 per cent and 24.0 per cent respectively. On the other hand, export volumes only increased by about 3.0 per cent in 1987 over 1986, although export prices are estimated to have increased by about 28.0 per cent in 1987.

2.9.8 Direction of Trade

Malawi's major trading partners have not changed over the years. For 1986, United Kingdom (26.0 per cent), West Germany (10.0 per cent). United States of America (9.0 per cent), the Netherlands (7.0 per cent), South Africa (7.0 per cent) and the Preferential Trade Area (7.0 per cent) got most of Malawi's exports. The major supplier of Malawi's imports continued to be South Africa (29.0 per cent), United Kingdom (25.0 per cent) and Japan (9.0 per cent). Malawi's trade with the rest of the PTA countries declined in 1986.

Table 10

DIRECTION OF TRADE

(MK '000)

	Exports to		Imports from	
	1985	1986	1985	1986
United Kingdom	142,140	117,803	73,784	118,094
	(34)	(26)	(15)	(25)
Netherlands	22,699	29,146	5,050	9,766
	(5)	(7)	(1)	(2)
United States of America	43,302	40,049	24,172	16,292
	(10)	(9)	(5)	(3)
South Africa	26,785	32,988	187,330	138,652
	(6)	(7)	(38)	(29)
France	14,570	15,106	17,754	11,567
	(3)	(3)	(4)	(2)
PTA Countries	39,931	31,770	38,631	23,053
	(10)	(7)	(8)	(5)
West Germany	34,645	43,954	27,374	30,288
	(8)	(10)	(6)	(6)
Other	81,265	107,377	85,281	86,285
	(19)	(24)	(17)	(18)
Total	419,145	445,865	497,553	477,990

2.10 Promotion of Industry and Commerce

In general all prospective investors who propose to establish a manufacturing firm which will employ ten or more persons (including managerial and clerical staff) or use machinery of twenty-five horse-power or more, are required to obtain an industrial licence from the Ministry of Trade, Industry and Tourism. Once granted, a licence remains valid for an indefinite period, provided the annual fee of MK 300 is paid and the licensee continues in production.

As a general rule, all applications for industrial licences are granted unless there are good reasons for not doing so. Reasons for refusing to grant a licence may be summarized as follows:

- if the capital, technical skill or raw materials are, in the opinion of the Minister, inadequate to secure the successful establishment and operation of the particular enterprise in which the applicant proposes to engage; and if the failure of the enterprise would likely prejudice the successful development of the industry concerned;

- if the place at which the applicant proposes to establish a manufacturing firm is not a suitable situation for the industry concerned;

- if the granting of such a licence would not, in the opinion of the Minister, be in the best interests of the economy or public weal of Malawi or of the particular industry concerned.

2.10.1 Industrial Incentives

In order to encourage the development of industry in Malawi, the Government offers a number of incentives, designed especially to be of help to manufacturers during the initial period of establishing their operations. These incentives fall into the following main headings:

- Exclusive Protection:
  In exceptional cases where it es economically justified, exclusive protection is granted to a pioneer industry for a limited period. When such protection is granted to a firm, no other enterprises are granted licences to manufacture products deemed to be competitive with those manufactured by the protected firm.

- Tariff Protection:
  It is not, in general, the policy of the Government to use direct import controls on products which compete with locally made goods, but local manufacturers may apply for tariff protection. If the application is granted, tariff rates may be raised to protect the local producer against imported products for a specific period.

- Industrial Rebates and Drawbacks:
  Manufacturers' rebates are granted on imported materials required for further processing in Malawi. The rates vary from commodity to commodity, with the effect that either reduced tariff rates apply or no duty is payable. Additional incentives are given to registered manufacturers through industrial drawbacks regulations, which allow them to claim reimbursement of tariff duties paid on materials which have been used in the manufacture of articles which have been exported.

- Other Tariff Rebates:
  Goods imported for the establishment or development of any industrial undertaking or enterprise which is deemed by the Minister of Finance to be of national importance, are allowed under a special tariff item to enter Malawi at concessionary duty rates. A similar concession is also provided in respect of parts and materials, excluding fuels, of a kind, suitable only for consumption in the process of manufacture.

- Tax Rebates:
  There are generous capital allowances and other special deductions for industrialists in Malawi which include:

  Depreciation Allowances

  Initial allowances on capital expenditure are granted at the rates of 10 % on industrial buildings and 20 % on plant and equipment.

  Annual allowances are also given and are calculated on the basis of a reducing written down value; these allowances are individually assessed by the Commissioner of Taxes, and the rates include 5 % on certain industrial buildings and vary from 5 % to 33 1/3 % on plant and equipment, depending on the type of equipment.

  Investment allowances - In general an allowance of 10 % is granted to manufacturers for new plant and equipment other than motor vehicles.

  Initial expenditure - The expenditure incurred by a manufacturing industry during the period of 18 months prior to the start of operations is deductible to the extent that it would have been allowed had it been incurred after the beginning of the business.

2.11 Taxation

Companies incorporated in Malawi:

The basic rate is 50 %. An additional tax of up to 5 % is payable on dividends remitted to external shareholders residing in countries where the gross rate of tax on taxable income involved would exceed 50 %; the company is liable for this tax and not the shareholders. There are provisions for the remission of the additional 5 % e. g. where it can be shown that a dividend paid to a shareholder resident outside Malawi is not liable to tax in his country of residence.

Companies not incorporated in Malawi
and branches of foreign companies:

The basic tax rate is 50 %. An additional amount of up to 5 % of the taxable income is payable if the tax payable on such taxable income would be in excess of 50 % in the country where the company is incorporated. Here again there are provisions for the remission of the additional 5 %; e. g. where it can be shown that the income derived in Malawi by a branch of foreign company is not liable for tax in the foreign country where the company is incorporated.

In both cases above, if the tax payable in the foreign countries is between 50 % and 55 %, the additional tax is limited to the excess over 50 %.

Special Deductions

There are special deductions from taxable income which can be claimed by farmers and industrialists, including capital allowances, some of which are outlined under the section on 'Promotion of Industry and Commerce'. The legislation also provides relief for certain mining expenditure.

Double Taxation Agreements

Malawi has double taxation agreements with the United Kingdom, Sweden, Denmark, Switzerland, Norway, France, the Netherlands, Kenya and South Africa.

There is no double taxation agreement with the Federal Republic of Germany; hence the project will not be affected in any way.

3. MARKET AND DISTRIBUTION

3.1 Market Supply

Market supply in Malawi is 100 % dependent on imported fridges and freezers. Bottle coolers are locally manufactured, but in a very small quantity of approx. 6 units/month only.

According to import statistics, the development of imported complete refrigerators is as follows:

Table 11

IMPORTS OF REFRIGERATORS/FREEZERS (ELECTRIC) FROM 1982 TO SEPTEMBER 1987 *)

Year	Number	Rate of change (%)
1982	665	
1983	928	+ 39.5
1984	976	+ 0.5
1985	1.569	+ 60.8
1986	767	- 104.7
1987 (Sept.)	453	- 69.3
Total	5.358	

*) Source: Annual Statement of External Trade 1982 - 1987 National Statistical Office, Zomba

Table 12

IMPORTS OF REFRIGERATORS (NON-ELECTRIC)
FROM 1982 TO SEPTEMBER 1987 *)

Year	Number	Rate of change (%)
1982	95	
1983	158	+ 66.3
1984	194	+ 22.8
1985	128	- 51.6
1986	145	+ 13.3
1987	40	- 263.0
Total	760	

*) Source: Annual Statement of
External Trade 1982 - 1987
National Statistical Office, Zomba

In the period of 1982 to 1987, the total of imported fridges/freezers amounted to 5.358 units.

Table 13

IMPORTS OF REFRIGERATORS (ELECTRIC)
BY COUNTRY *)

Year	1982		1983		1984	
Country	Qty.	Market Share %	Qty.	Market Share %	Qty.	Market Share %
Zimbabwe	20	3.0	7	0.8	26	2.7
Swaziland	-		-		3	0.3
Botswana	1	0.2	-		-	
RSA	270	40.5	274	29.5	682	69.9
Japan	-		-		3	0.3
Hong Kong	1	0.2	-		-	
Kuwait	1	0.2	-		-	
USA	7	1.0	11	1.2	3	0.3
Canada	-		2	0.2	-	
Greece	-		71	7.7	-	
Sweden	1	0.2	-		-	
Austria	-		-		1	0.1
Denmark	11	1.7	-		2	0.2
W-Germany	19	2.8	3	0.3	-	
Luxembourg	-		-		1	0.1
Italy	260	39.1	541	58.3	194	19.9
Netherlands	2	0.3	-		1	0.1
France	1	0.2	-		5	0.5
Eire	40	6.0	-		-	
U.K.	31	4.6	19	2.0	55	5.6
Spain	-		-		-	
South Korea	-		-		-	
Hungary	-		-		-	
Belgium	-		-		-	
Total	665	100 %	928	100 %	976	100 %

Year	1985		1986		09/1987	
Country	Qty.	Market Share %	Qty.	Market Share %	Qty.	Market Share %
Zimbabwe	1	0.1	12	1.6	41	9.2
Swaziland	-		-		24	5.3
Botswana	-		1	0.1	1	0.2
RSA	620	39.5	474	61.8	273	60.3
Japan	1		-		-	
Hong Kong	-		-		-	
Kuwait	-		-		-	
USA	8	0.5	2	0.3	7	1.5
Canada	-		1	0.1	-	
Greece	-		-		-	
Sweden	-		-		-	
Austria	-		-		-	
Denmark	23	1.5	1	0.1	-	
W-Germany	2	0.2	54	7.0	21	4.6
Luxembourg	-		2	0.3	-	
Italy	852	54.3	210	27.4	74	16.3
Netherlands	4	0.4	1	0.1	1	0.2
France	-		2	0.3	-	
Eire	-		-		-	
U.K.	18	1.1	4	0.5	10	2.2
Spain	19	2.5	-		-	
South Korea	-		-		1	0.2
Hungary	-		3	0.4	-	
Belgium	1		-		-	
Total	1,569	100 %	767	100 %	453	100 %

*) Source: Annual Statement of External Trade 1984 - 1987
National Statistical Office, Zomba

The main countries of origin for imported fridges were:

Country	Average % market share
Republic of South Africa	48.4
Italy	39.8
United Kingdom	2.6
Zimbabwe	2.0
West Germany	1.8
Others	5.4

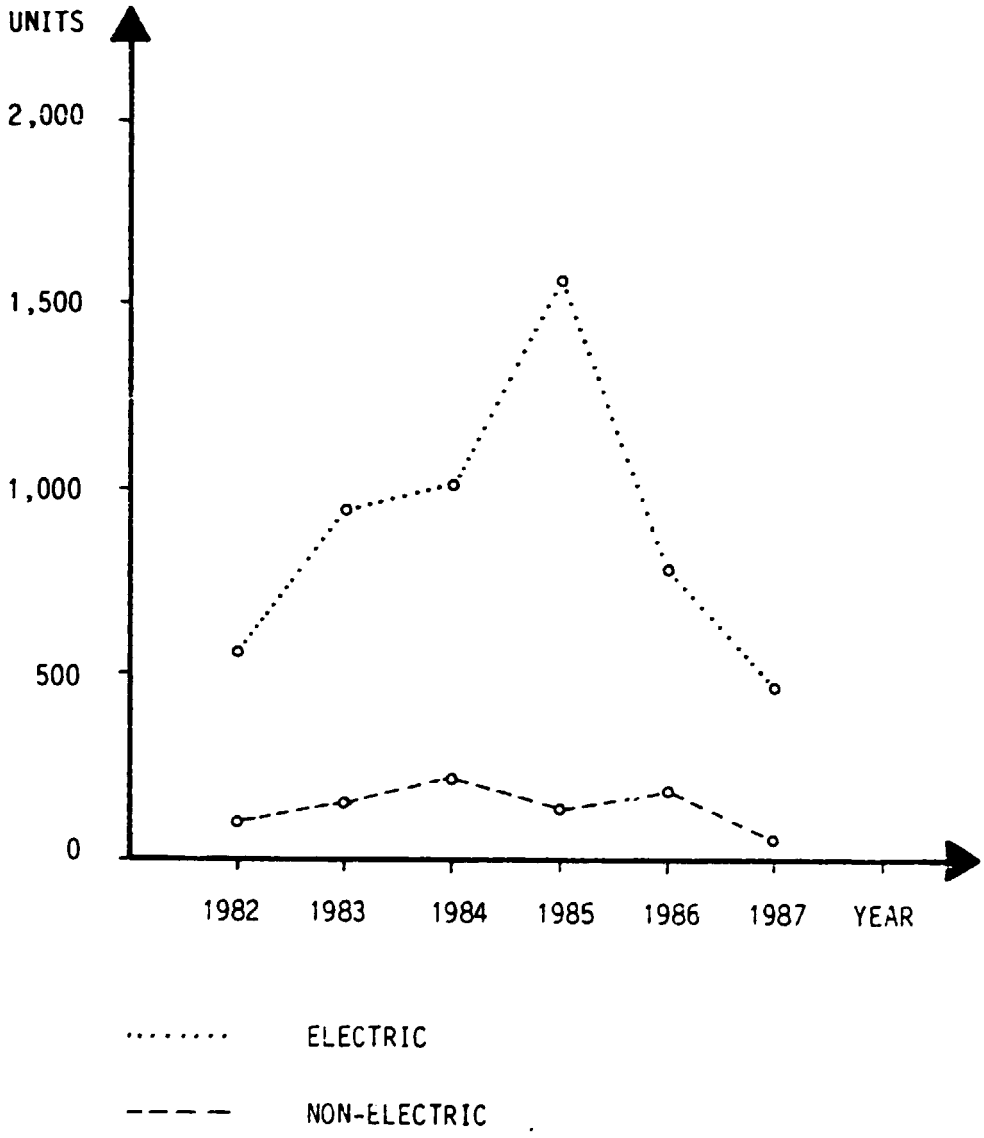
According to the above mentioned statistical figures it is still rather difficult to make an assessment of the market potential.

The graphic (Table 14) shows a constant increase of supply from 1982 to 1985 and thence a considerable decrease up to this day.

This phenomenon is directly linked to the development of the Malawi Kwacha (see Table). Due to the lack of foreign exchange and the availability of respective approved import allocations as well as on account of the devaluation of the MK by almost 45 % between 1984 and 1987, the market position regarding the supply of imported fridges has become very weak. At its market research in March 1988, the study team came to the same conclusion.

Table 14

DEVELOPMENT OF IMPORTS
(REFRIGERATORS)
1982 - 1987



3.1.1 Distribution and Pricing

Refrigerators and freezers are usually distributed through retailers.

These retail shops are specialized in electrical household appliances (where refrigerators mostly are offered together with freezers, cookers, air conditioners, fans, but also with television, radio sets, etc.).

The retail shops can be distinguished in the following manner:

- major shops where there also is a broad range of brands and sizes, and
- smaller shops which in most cases are restricted to one brand or only a few, and to the size that sells best.

The electrical shops are located in commercial areas of the cities.

In suburbs or smaller cities these types of retail shops cannot be found.

Some of the dealers prefer to be exclusive agent for one brand only.

The distribution system in Malawi is not complex.

The typical procedure for the vendors (retailers) is to submit an application to the Reserve Bank for the importation of a certain number of units based on customers' demand in their shops.

Applications may take up to 6 months, depending on the foreign exchange situation and the priorities of imports as determined by the Reserve Bank.

Particularly at times of low supply, vendors (retailers) will be by-passed by other small shops or private businessmen having the opportunity to obtain small quantities of fridges/freezers more quickly.

In order to keep their own business running, vendors/retailers also have to buy this commodity from those small shops or such, which also means that they have to pay the broad profit margin of these sources, a price which they promptly pass on to the consumer with the mark-up ranging between 25 and 30 %.

From this practice the conclusion must be drawn that at present a reliable reflexion in the way of supply and demand in Malawi is not possible.

On the other hand, when an import substition is achieved by manufacturing the fridges/freezers locally at a reasonable price, the practices described before will not apply any more.

For the Malawian standard of living, a refrigerator is considered to be a luxury item because of its high price.

In the long run it is likely to be seen as a consumer good that is essential. Therefore more households should be equipped with a refrigerator.

Table 15 shows brands and retail prices of refrigerators obtained at the market survey in March 1988.

Table 15

RETAILERS, BRANDS AND RETAIL PRICES OF REFRIGERATORS IN LIMBE, BLANTYRE AND LILONGWE

	Brand	Origin	Capacity in cft/l	Retail price in MK	Remarks **)
I.	New City Centre, Limbe				
	Zerowatt	Italy	15.0 cft	5,530.00	
	Sital	Italy	11.0 cft	4,700.00	
	Sital	Italy	8.0 cft	4,250.00	
	Combi	U.K.	13.0 cft	4,950.00	
II.	Radio & Electrical Services, Limbe				
	Philco	Italy	12.3 cft	5,800.00	d
	Philco	Italy	8.0 cft	4,200.00	s
	Defy	RSA	12.0 cft	6,840.00	s
	Defy	RSA	9.0 cft	7,495.00	d
III.	Okhai Electronics, Limbe				
	Defy	RSA	12.0 cft	7,495.00	s
	Kelvinator	RSA	9.3 cft	4,154.00	f
	Philco	Italy	11.3 cft	5,950.00	d
	Philco	Italy	12.7 cft	4,500.00	s
	Philco	Italy	10.2 cft	3,850.00	s
	Philco	Italy	9.2 cft	3,995.00	d
	Ocean	Italy	2.7 cft	5,492.00	f
	Zoppas	Italy	8.1 cft	4,125.00	d
	Zoppas	Italy	11.8 cft	5,950.00	d

(Table 15 continued)

	Brand	Origin	Capacity in cft/l	Retail price in MK	Remarks **)
IV.	D. Poss & Co. Ltd., Blantyre				
	Algor	Italy	12.3 cft	6,950.00	d
	Algor	Italy	10.0 cft	6,350.00	d
	Algor	Italy	8.2 cft	5,750.00	d
	Algor	Italy	5.0 cft	2,500.00	s
V.	Hardware & General Dealers, Blantyre				
	Kelvinator	RSA	9.0 cft	4,475.00	d
	Kelvinator	RSA	13.3 cft	4.961.00	d
	Kelvinator	RSA	16.0 cft	5,426.00	d
VI.	Automotive Products Ltd., Blantyre				
	Bosch	FRG	12.0 cft	6,935.00	d
VII.	Noors Agencies, Limbe				
	N.N.		6.0 cft	1,600.00	Fridge (simple)
VIII.	Radio & Electrical Services, Lilongwe				
	Zoppas	Italy	12.0 cft	6,084.00	d
	Kelvinator	RSA	3.0 cft	3,050.00	Fridge
IX.	Brown & Clapperton, Blantyre				
	Kelvinator	RSA	13.0 cft	6,242.00	d

(Table 15 continued)

	Brand	Origin	Capacity in cft/l	Retail price in MK	Remarks **)
X.	Delta Corporation, Blantyre				
	Candy	Italy	9.0 cft	3,400.00	s
XI.	Bhedas Ltd., Blantyre				
	Electrolux	Italy	5.0 cft	2,700.00	s
	Zoppas	Italy	9.0 cft	4,500.00	d

**) d = double-door fridge-freezer combination
s = single-door fridge-freezer combination
f = freezer

RSA = Republic of South Africa

In Malawi, the most popular refrigerator capacities are the 9- and the 12-cft double-door fridge-freezer combinations.

Table 16 shows the average retail price for the aforementioned sizes:

Table 16

AVERAGE RETAIL PRICE FOR 9- AND 12-CFT
DOUBLE-DOOR FRIDGE-FREEZER COMBINATIONS

Capacity in cft	Retail price in Kwacha	./. Discount 15 %
9.0 cft	4,860.00	4,131.00
12.0 cft	6,020.00	5,177.00

Usually, retailers will grant an average discount of 16 % on the retail prices.

Apart from the brands listed in Table 15, the following other brands are also sold in Malawi, but were not available in the retail shops at the time of the survey.

In order to give a rounded picture, Table 17 shows those other brands as well as the prices that had been obtained from the retailers at the survey.

Table 17

RETAILERS, BRANDS AND RETAIL PRICES
OF REFRIGERATORS SOLD IN MALAWI,
BUT NOT AVAILABLE AT THE TIME OF THE SURVEY

	Brand	Origin	Capacity in cft/l	Retail price in MK	Remarks **)
I.	Brown & Clapperton, Blantyre				
	Barlows	RSA	11.5 cft	5,150.00[1]	d
	Barlows	RSA	13.5 cft	5,300.00[1]	d
	Barlows	RSA	16.0 cft	5,770.00[1]	d
II.	Radio & Electrical Services, Blantyre				
	Barlows	RSA	5.0 cft	2,494.00	s
	Barlows	RSA	10.0 cft	3,295.00	s[4]
	Barlows	RSA	12.5 cft	3,450.00	s[4]
	Barlows	RSA	9.0 cft	3,950.00	d[4]
	Barlows	RSA	11.5 cft	3,827.00	d[4]
	Barlows	RSA	13.0 cft	4,015.00	d freezer
	Capri	Zimbabwe	250 l	860.00[2]	fridge
	Capri	Zimbabwe	340 l	960.00[2]	fridge
	Capri	Zimbabwe	250 l	875.00[2]	chest freezer
	LEC	UK	6.0 cft	£ 513.00	3)
	LEC	UK	8.0 cft	£ 748.00	3)

**) d = double-door fridge-freezer combination
s = single-door fridge-freezer combination
f = freezer

RSA = Republic of South Africa

1) = Retail price
2) = f.o.r. Harare
3) = Quotation f.o.b. U.K. port
4) = Import price incl. duty (bond)

3.2 Demand

3.2.1 Refrigerators / Freezers

Due to the fact that official statistics of households do not include the use of refrigerators in private households, an assessment of the demand for refrigerators in Malawi is rather difficult.

The "Urban Household Expenditure Survey 1979/1980" only shows the numbers of households by type of electrical cooking, lighting and telephone facilities.

It also gives the average household size by major towns and income groups and the percentage distribution for each major town and income group.

In the following tables the respective figures are shown.

Table 18

NUMBERS OF HOUSEHOLDS BY TYPE OF ELECTRICAL COOKING, LIGHTING, AND TELEPHONE FACILITIES *)

Town	Total Households	Facilities					
		Cooking	%	Lighting	%	Telephone	%
Blantyre	68,353	6,655	9.7	14,281	2.9	5,003	7.3
Lilongwe	41,484	5,366	12.9	9,535	23.0	1,779	4.3
Zomba	7,962	1,264	15.9	2,855	35.9	917	11.5
Mzuzu	3.659	49	1.3	850	23.2	60	1.6

*) Source: Urban Household Expenditure Survey 1979/80

According to this statistic, on the average 10 % of the urban households in the four major towns had electrical cooking facilities, 25 % lighting facilities, and 6 % telephone facilities.

The development of urban households between 1977 and 1987 was dependent on the growth of the population and the average size of the urban household in Malawi.

Table 19

GROWTH OF POPULATION IN FOUR MAJOR TOWNS FROM 1977 to 1987 *)

Town	1977	1987	Increase
Blantyre	219,000	323,000	+ 51.6 %
Lilongwe	99,000	235,000	+ 137.3 %
Zomba	24,000	43,000	+ 79.2 %
Mzuzu	16,000	44,000	+ 175.0 %
Total	358,000	654,000	
Total population	5,547,460	7,982,607	
Percentage of total population	6.4 %	8.2 %	

*) Source: Malawi Population and Housing Census 1987 (Preliminary Report)

The housing and demographic characteristics of the census 1987 point to the fact that the average household size, on the whole, increases as income increases. The household with higher incomes may have more members, as they tend to include more than the nuclear family and may employ servants living as household members. It is also much more common to find working wives in such household. The average household size in Blantyre, Lilongwe, Zomba and Mzuzu is 4.5, 4.2, 4.6, and 4.4 persons respectively.

Table 20 shows the average household size by income group for the respective towns, whereas Table 21 shows the percentage distribution of expenditures.

Table 20

AVERAGE HOUSEHOLD SIZE BY TOWN AND INCOME GROUP *)

Income Group	Blantyre	Lilongwe	Zomba	Mzuzu
All income groups	4.5	4.2	4.6	4.4
Less than MK 20.00	2.6	1.5	3.7	2.5
MK 20.00 - 39.99	3.7	2.6	3.0	2.5
MK 40.00 - 69.99	3.8	4.0	3.9	4.0
MK 70.00 - 99.99	4.3	4.4	5.4	4.8
MK 100.00 - 139.99	5.0	5.1	6.0	6.0
MK 140.00 - 199.99	6.1	5.7	6.1	6.8
MK 200.00 - 399.99	6.5	6.3	5.8	6.9
MK 400.00 and over	5.6	6.1	5.3	6.3

*) Source: Urban Household Expenditure Survey
National Statistical Office

Table 21

HOUSEHOLD INCOME DISTRIBUTION CURVES

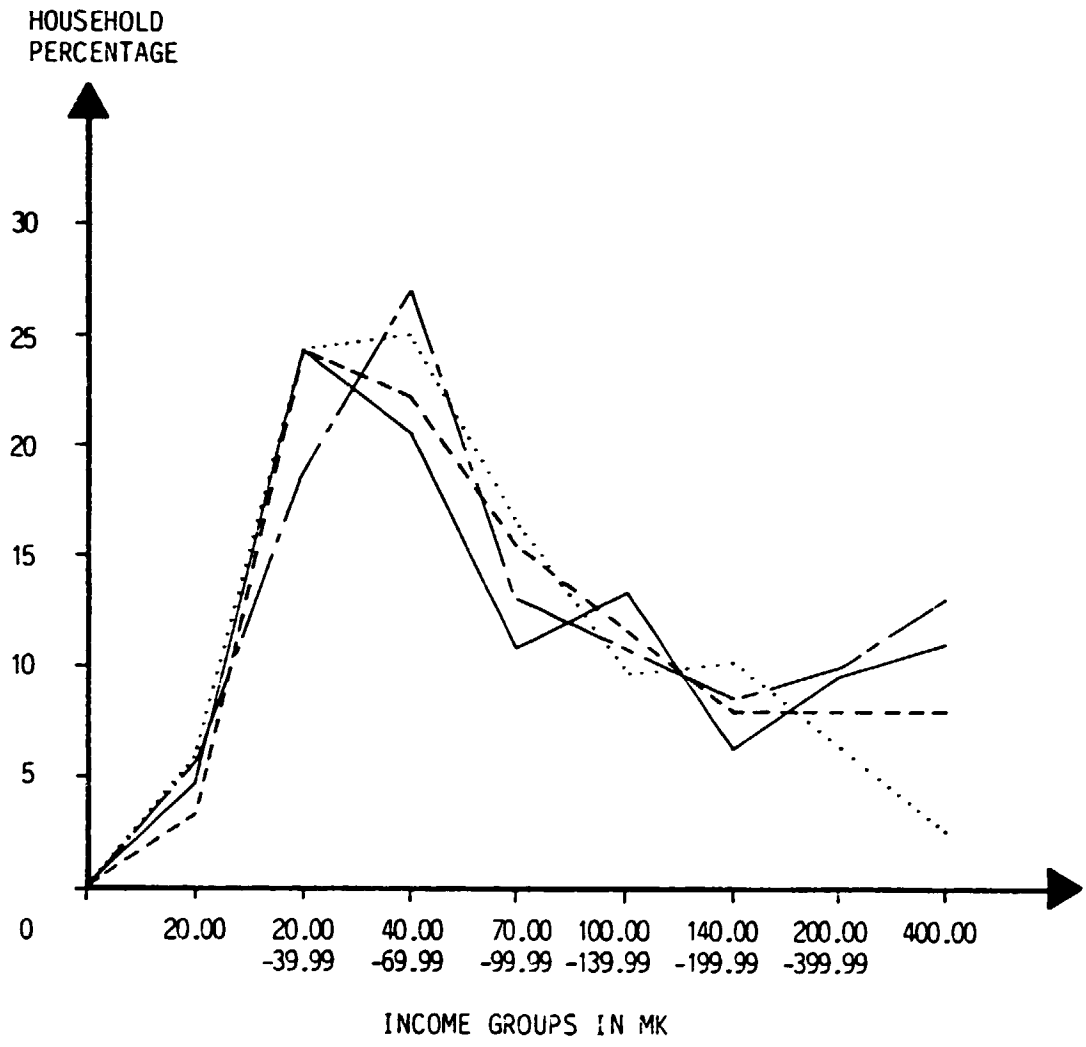


Table 22

SUMMARY OF PERCENTAGE DISTRIBUTION
OF EXPENDITURE FOR EACH TOWN
BY INCOME GROUP AND COMMODITY *)

Income Group and Town	Food	Alcohol + Tobacco	Transport + Commu-nication	House-hold Equipm.	Other
High Income					
Blantyre	14.3	4.1	18.0	8.8	54.8
Lilongwe	14.5	2.5	26.4	13.9	42.7
Zomba	20.0	2.9	20.8	12.1	44.2
Mzuzu	15.5	1.0	26.2	10.3	47.0
Low Income					
Blantyre	43.5	2.1	4.0	9.7	40.7
Lilongwe	38.1	4.9	3.2	12.0	41.8
Zomba	47.9	2.0	2.4	11.4	36.3
Mzuzu	47.7	2.0	2.2	10.0	38.1

*) Source: Urban Household Expenditure Survey
National Statistical Office

The average prices of refrigerators in Blantyre City in the period of 1975 to 1985 are as follows:

Table 23

AVERAGE PRICES IN BLANTYRE CITY
FROM 1975 TO 1985 *)

Year	Average price	Increase in %	Price per cft in MK
1975	277.00	19.0	55.40
1976	330.00	19.2	66.00
1977	393.00	19.2	78.60
1978	472.62	20.3	94.50
1979	664.59	40.6	132.90
1980	907.92	36.6	181.70
1981	1,030.00	13.5	296.20
1982	1,096.62	6.4	219.30
1983	1,287,78	17.4	257.60
1984	1,440.00	11.8	288.00
1985	2,000.00	38.9	400.00

Basis: 5 cft

*) Source: Malawi Statistical Yearbook 1985
National Statistical Office

Between 1975 and 1985, the increase of retail prices for refrigerators amounts to approximately 720 %.

At the market survey in March 1988, prices for refrigerators were obtained from the retailers (see Table 15). It can be stated that in 1988 the average price per cft is MK 505.00.

Compared with 1985, the average price increase amounts to 26.3 %.

The retailers complained about the reduced business opportunities and the consumers' reluctance. They stated that future demand depends on the retail prices, which means that for a 12-cft double-door fridge/freezer the retail price should not exceed MK 2,500.00.

The same statement also applies for government bodies, industrialists and private consumers who had been interviewed.

In addition to the facts and figures mentioned above, there are some more indicators which might have a positive impact on future demand:

- the increase of electrical consumers by 9 % per year on the average,
- the rural development plan including the electrification of the northern region,
- the decrease of imported high-priced fridges,

- additional consumers, such as
  Government,
  military,
  police,
  hospitals (health),
  schools (education),
  agricultural,
  where refrigerators are urgently needed.

A realistic estimation for this consumer group will be a demand of 60 to 100 units per year.

All these developments depend not only on pricing, but also on qualitative aspects.

3.2.2 Qualitative Aspects of the Market

The market survey reveals that the most popular fridges/freezers in Malawi are

- units with a capacity of approx. 9 cft (double-door),
- units with a capacity of approx.12 cft (double-door).

According to the interviews, the consumers' main aim is to store goods such as meat, vegetables, fruit, butter, eggs, beverages etc. which they want to buy only once a week.

Consumers also give a high degree of priority to "quality", which means:

- strong cooling capacity,
- fairly voluminous freezer section,
- sophisticated layout and high quality of manufacture,
- stable functioning.

The domestic market can be expressed in terms of two segments, namely the retail and the institutional market.

Attempts were made to separate and portion the retail and institutional market sectors. It proved not to be feasible with the few data available where the institutional market was concerned. Hence it follows that for this segment only a certain assumption could be drawn.

The retail market segment comprises consumers who purchase refrigerators from special shops which offer almost all types of electrical appliances.

The main consumer group for refrigerators appears to be

urban households with a monthly income of MK 200.00 to MK 400.00 and over.

In 1987, there were approximately 25,235 urban households in the four major towns Blantyre, Lilongwe, Zomba and Mzuzu, which had such an income.

According to the figures mentioned in Chapter 3.1, about 1,000 refrigerators per year have been imported into Malawi.

Compared with the growth of population and the growth of urban households that corresponds to it, this figure does not represent the actual demand for refrigerators. For a quantitative estimation of the demand, several factors that are of significance, have to be taken into consideration:

1. Between 1977 and 1987, the rate of urbanization has been 8.9 % with an increasing factor.
2. Over that period the total population increased by approx. 44 %.
3. The average number of persons in urban households is approx. 6.7.
4. Over the past five years, the supply represents only 21.2 % of the electrical consumers.
5. The average lifetime of a refrigerator is about 3 to 5 years.
6. 0.5 % of the rural households can be regarded as potential consumers of refrigerators.

In the following table the respective figures are shown for a conservative assessment that is based on the figures of the official statistics as well as on other sources which had been figured out during the mission.

The number of refrigerators used for institutational purposes, such as offices of the Government, Army, hospitals, private companies etc., have not been accounted for.

The demand figures are compared with the market supply consisting of imports in 1986/87. The coverage of demand by supply is calculated in years and compared with the average lifetime of refrigerators.

Table 24

DEMAND AND SUPPLY OF REFRIGERATORS
(FIGURES BASED ON FOUR MAJOR TOWNS
BLANTYRE, LILONGWE, ZOMBA, MZUZU)

Population (1987)	8,000,000
Urbanization (8 %)	654,000
Urban households	145,000
Electrical consumers	25,235
Number of persons per household	6.7
Household with fridges (estimated)	4,500
Households with monthly income between MK 200.00 to MK 400.00 and over	25,235
Total demand for refrigerators	6,500 units
Total supply 1986/87	1,220 units
Coverage of demand by supply	5.3 years
Average lifetime	3 - 5 years
Initial demand	6,500 units
Replacement in 4 years = annual demand	1,625 units
Increase of private consumption per year: 3.5 % (additional demand)	57 units
Annual total demand	1,682 units
Shortage of supply over demand/year	482 units
Shortage/surplus of production* over demand/year	- 182 units

* Production: 1,500 units/year

The result of the quantitative estimation can be interpreted as follows:

The actual market supply of 1,220 refrigerators per year would require 5.3 years in order to meet the total demand.

Taking the average lifetime of the refrigerators of 4 years into account, this would mean that the current supply does not tally current demand.

Regarding the actual market situation, it can be stated that there is a shortage of refrigerators in the market.

3.2.3 Bottle Coolers

Due to lack of statistical figures, the assessment of the Malawian market for bottle coolers can only be evidenced by figures that have been obtained from the main producer of beer and soft drinks in Malawi, the company Southern Bottlers, Limited, Blantyre. This company sells its products to approximately 8,000 distribu ion units all over the country out of which less than 10 % are equipped with a bottle cooler.

Tendency and strategy of Southern Bottlers Ltd. is to furnish on the average 300 distribution units per year with bottle coolers, provided the purchase price is reasonable.

In the past, bottle coolers had been imported from the Republic of South Africa.

In the course of their investigations, the study team could not find a single bottle cooler in the market.

Although the import of bottle coolers is not mentioned in the official statistics, the study team learnt from the main customer of bottle coolers (Southern Bottlers Ltd.) that in the past such appliances had been imported from the Republic of South Africa.

But within the frame of an E.E.C.-sponsored programme to develop the small-scale industries of Malawi, under the umbrella of SEDOM* an industrial estate has been implemented in Blantyre. Amongst other small-scale industries, the company WEBU Limited is manufacturing a maximum of 6 bottle-coolers (chest-type, capacity 6 cft) per month by order of Southern Bottlers, Limited. The study team had the impression that WEBU Ltd. is displaying evidence of good craftsmanship, yet there are certain limitations to the increase of capacity, such as

- lack of space,
- lack of raw material,
- lack of skilled workers,
- lack of working capital.

Apart from Southern Bottlers Ltd., there are other markets in the country which might also mean an additional consumer group, such as Peoples Trading Centres (PTC), hospitals, hotels and private consumers.

PTC is spread all over Malawi with departmental stores, supermarkets and shops as is shown in the following table.

* SEDOM: Small Enterprise Development Organization of Malawi, Blantyre

Table 25

PEOPLES TRADING CENTRES IN MALAWI
1987

Town	Type	Number
Blantyre/	Departmental Store	2
Limbe	Shop	9
Balaka	Supermarket	1
	Shop	1
Deoza	Supermarket	1
Kia	Supermarket	1
Karonga	Shop	1
Kasungu	Supermarket	1
	Shop	2
Lilongwe	Departmental Store	1
	Supermarket	1
	Shop	5
Luchenza	Supermarket	1
Mangochi	Shop	1
Mchinji	Shop	1
Monkey Bay	Supermarket	1
Mponela	Shop	1
Mulaje	Shop	1
Mzimba	Shop	1
Mzuzu	Departmental Store	1
Nchalo	Shop	1
		35

(Table 25 continued)

Town	Type	Number
Number of Peoples Trading Centres carried over:		35
Nkhata Bay	Supermarket	1
Nkhota Kota	Supermarket	1
Ntcheu	Supermarket	1
Rumphi	Supermarket	1
Salima	Shop	1
Thyolo	Shop	1
Zomba	Departmental Store	1
	TOTAL	42

It can be assumed that PTC will expand at the same pace as that of the overall development in Malawi.

Hospitals, hotels and private consumers can be regarded as a minor consumer group.

A realistic demand figure might be 300 to 350 bottle coolers per annum at the initial stage.

3.3 Distribution and Marketing

As previously described, refrigerators, freezers and bottle-coolers are normally distributed through retailers. The normal distribution procedure which will apply for this project is that the dealers will come to the factory and pick up the goods.

For the future it seems to be recommendable to establish sales depots in other cities than the location of manufacturing.

Usually the retailers are located in the business centres of the cities; smaller shops which play a minor rôle, are also located in the commercial areas of suburbs and in smaller cities.

Due to the fact that at present all refrigerators are imported into Malawi, marketing and business conditions will be of essential significance for the newly established refrigerator manufacturing plant.

Business conditions, such as ex-factory price etc. should be the same for all dealers.

The payment conditions depend on the quantities that are bought, and the business relation between dealer and manufacturer.

The manufacturer will quote recommended retail prices and grant discounts to the dealers, which represent a portion of their trade margin. Trade margins normally are between 25 % and 30 %. Because of the new product, marketing and advertising efforts should be concentrated on the areas of distribution, which should be limited, at least at the beginning.

The following main aspects with respect to distribution and marketing have to be considered:

- The brand-name will be of vital importance.
  Since most of the imported fridges bear well-known brand names, it is advisable to introduce the new product with the brand name of the foreign technical partner who is a firm of international reputation.
  Malawian consumers are accustomed to foreign products and could therefore be suspicious of the quality of locally manufactured goods.
  Within the frame of the marketing campaign, it will be an advantage to stress the background of the foreign sponsor, such as "German technology".

- The production programme should be limited to two models of refrigerator/freezer combinations and one bottle-cooler.

- The capacity should be limited - at least at the beginning - to 1,750 units p. a.

- The products should be distributed through the ordinary marketing channels, in particular dealers for electrical household appliances and department stores.

- Advertisements should be placed in the newspapers.

- Standardization of the three models according to German Stadards such as DIN and VDE should be agreed upon with the Malawi Bureau of Standards and be utilized as a sales argument.

3.4 Remarks on the After-Sales Service

Repair and Maintenance of Refrigerators

At present the establishment of an extra repair and maintenance net is not required, since Malawi's major cities are already served by a sufficient number of repair shops.

However, where the actual requirements of competent and comprehensive service jobs are concerned, there are certain limitations to the technical standard both in know-how and equipment.

This situation could be drastically improved by specific promoting programmes in co-operation with the Small Enterprises Development Organization of Malawi (SEDOM). Such promotion should aim at the extension of theoretical knowledge and the improvement of practical skills.

4. Export Possibilities

The Consultants have investigated the export possibilities for refrigerators/freezers and bottle-coolers to neighbouring countries, such as Tanzania, Moçambique, Sambia and Zimbabwe, but at present it is impossible to make an assessment for these prospective markets.

The Consultants' investigations have been hampered by the fact that import and/or production figures of the above-mentioned countries for these particular products are not available.

Once the standard product is produced in Malawi and established on the market, the requirements for the export of refrigerators/freezers and bottle-coolers are not insurmountable. The various incentives and support schemes provided to the SADCC-countries might also contribute to making such exports more attractive when the objectives of the Lusaka Declaration (Indicate Programme *) have been realized.

At any case, in the long run the export possibilities of refrigerators/freezers and bottle-coolers to the PTA-countries with the trade facilitations offered there, should not be neglected.

* Aide Memoire for preparation of SADCC Industry Programme, Memorandum of Action

5. PRODUCTION PROGRAMME

5.1 General Characteristics of the Refrigerators/Freezers and Bottle-Coolers

The proposed standard models of the refrigerators/freezers are well suited for markets in tropical countries on account of their following features:

- voluminous gross capacity.
- spacious 4-star freezer compartments,
- a special arrangement of the inner door offering a lot of space for bottles.

The bottle-cooler is of exactly the same design and qualities, but with a different inner door and without the 4-star freezer compartment.

The automatic temperature regulation and automatic defrosting system of all these models offer up-to-date comfort, and each unit features:

- standard dimensions;
- standardized parts, which can be used for all the proposed models without any change, such as: table top, wire shelves, vegetable containers*, freezer drawers* etc. (* = except for the bottle-coolers);
- wire shelves variable in height;

- every unit is manufactured in a sandwich-wise manner: the housing is composed of 2 side-panels made of sheet-steel, the upper cover plate and deep-drawn inner plastic casing; foaming makes these parts a compact solid unit;
- the technical layout allows all these standard units to be operated under the climatic conditions of Malawi without any technical modification;
- low energy consumption;
- low operational noise-level;
- simple operation;
- high degree of safety;
- attractive design;
- design according to standard specifications of relevant international institutions (VDI, DIN, etc.);
- installation possible anywhere, against walls or as a component in kitchen combinations.

5.2 Product Specifications

According to Chapters 3.2.2 and 3.2.3 the following models and production capacities have been determined:

9 cft	model KSD 2794-1 type: refrigerator/freezer combination double-door	850 units p. a.
12 cft	model KGD 3494-1 refrigerator/freezer combination double-door	600 units p.a.
12 cft	model FKS 3690-1 type: upright bottle-cooler single-door	300 units p. a.

5.2.1 Technical Data Sheet

Structural Shape

Upright model			KSD 2794-1
Symbol of star			****
Climatic class			N (16 - 32° C ambient temperature)

Dimensions

Height	approx.	cm	146	
Width	approx.	cm	60	
Depth	approx.	cm	60	
Number of doors		pcs.	2	
Hinge of door changeable			right / left	

Characteristics

Gross capacity in total	approx.	ltr.	264	(9 cft)
Gross capacity refrigerator part	approx.	ltr.	183	
Gross capacity freezer part	approx.	ltr.	81	
Defrosting in refrigerator part			automatically	
Defrosting in freezer part			manually	

Equipment

Refrigerator part:		
Egg holder	eggs	10
Bottle racks / door shelves	pcs.	1 / 2
Vegetable container	pcs.	2
Shelves variable in height	pcs.	3

Freezer part:

Drawer	pcs.	2
Ice cube tray	pcs.	2
Cooling accu	pcs.	-

Power supply

Tension/Frequency	240 V ± 10 % / 50 Hz
Energy consumption according to DIN	1.2 kWh / 24 h

These indications are subject to technical modifications.

5.2.2 Technical Data Sheet

Structural Shape

Upright model	KGD 3494-1
Symbol of star	****
Climatic class	N (16-32° C ambient temperature)

Dimensions

Height	approx.	cm	180
Width	approx.	cm	60
Depth	approx.	cm	60
Number of doors		pcs.	2
Hinge of door changeable		right / left	

Characteristics

Gross capacity in total	approx.	ltr.	333 (12 cft)
Gross capacity refrigerator part	approx.	ltr.	183
Gross capacity freezer part	approx.	ltr.	150
Defrosting in refrigerator part		automatically	
Defrosting in freezer part		manually	

Equipment

Refrigerator part:		
Egg holder	eggs	10
Bottle racks / door shelves	pcs.	1 / 2
Vegetable container	pcs.	2
Shelves variable in height	pcs.	3

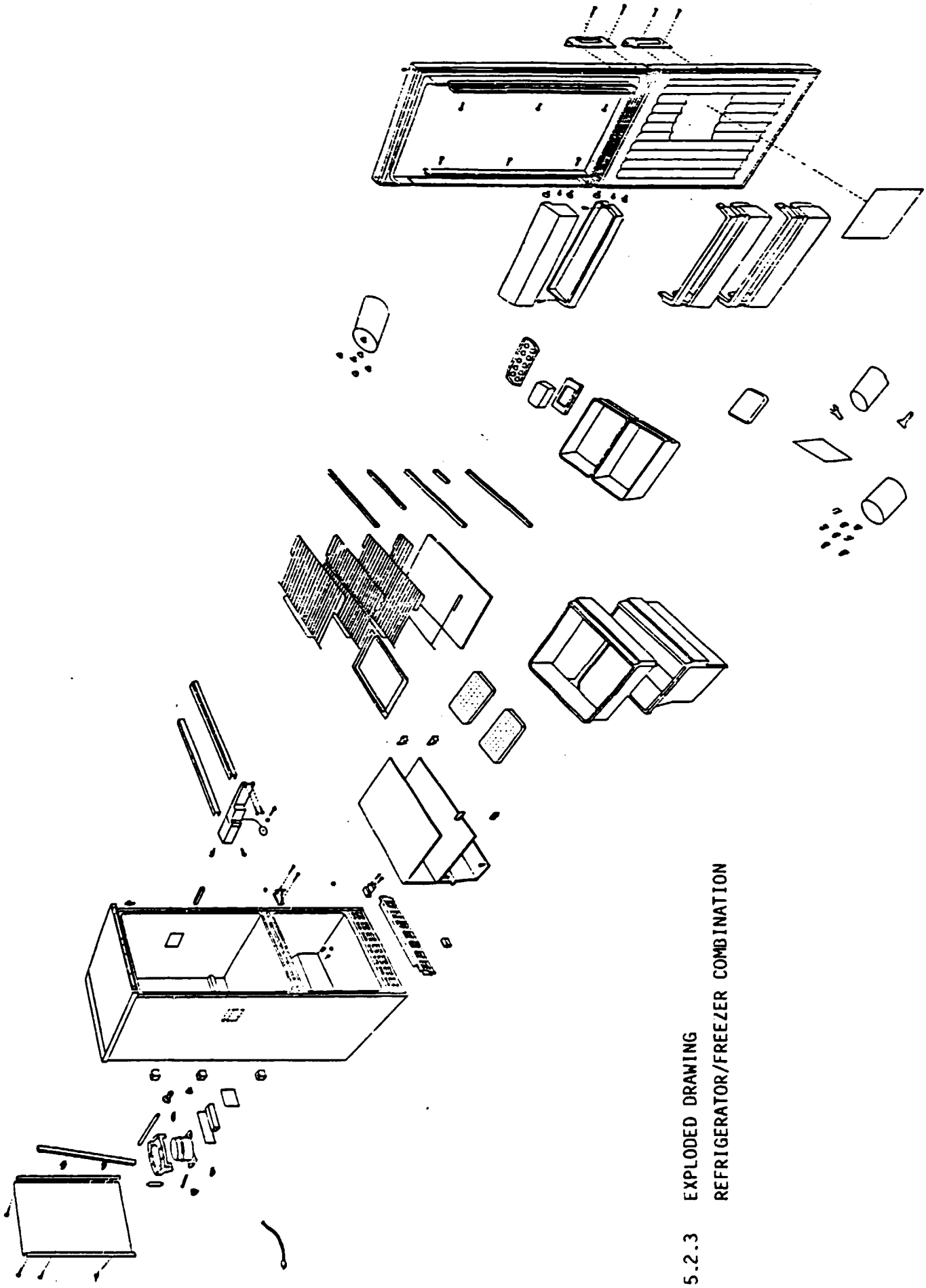
Freezer part

Drawer	pcs.	4
Ice cube tray	pcs.	2
Cooling accu	pcs.	-

Power supply

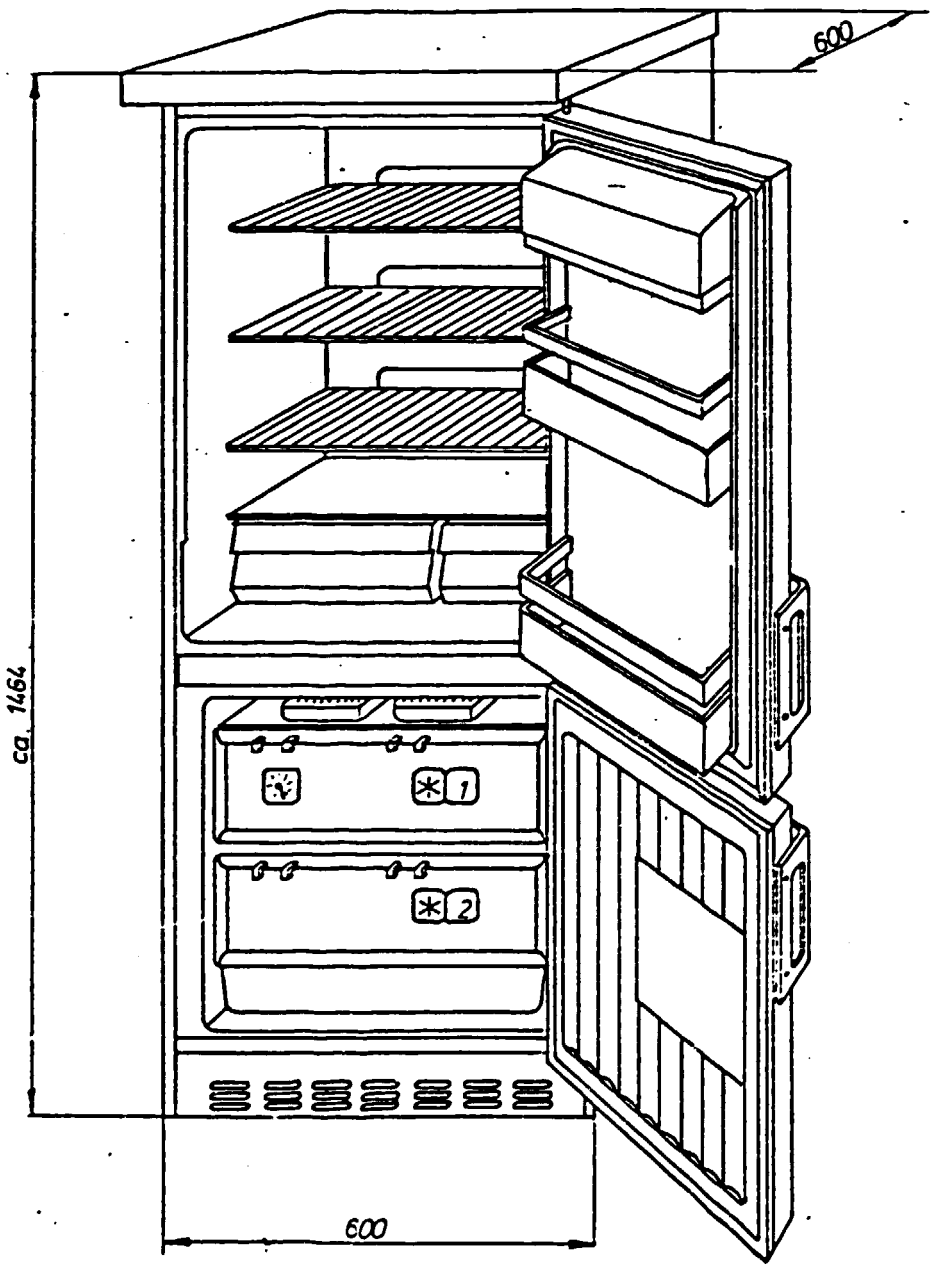
Tension / frequency	240 V ± 10 %/50 Hz
Energy consumption according to DIN	1.5 kWh / 24 h

These indications are subject to technical modifications.

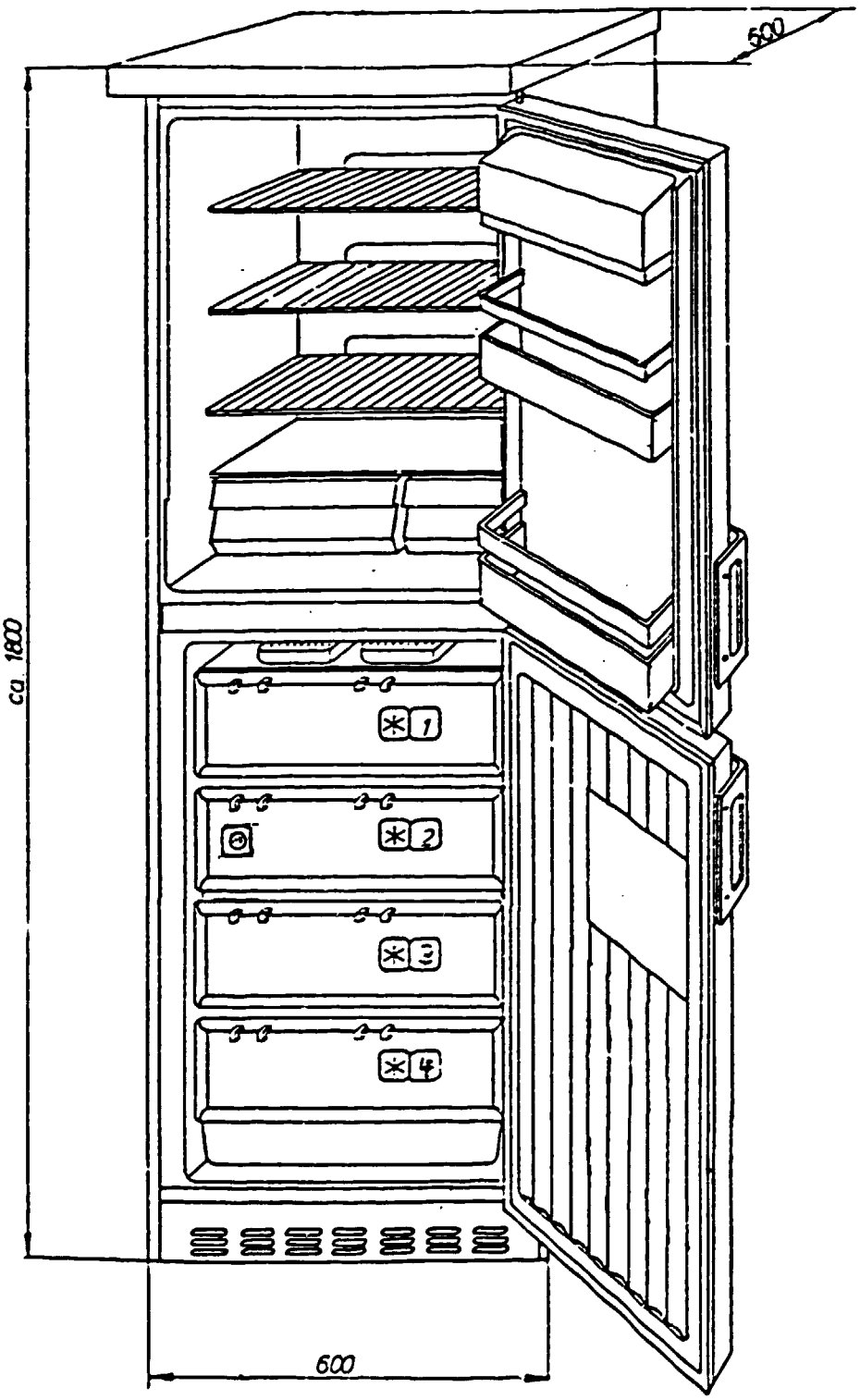


5.2.3 EXPLODED DRAWING
REFRIGERATOR/FREEZER COMBINATION

REFRIGERATOR/FREEZER COMBINATION
MODEL KSD 2794-1



REFRIGERATOR/FREEZER COMBINATION MODEL KGD 3494-1



5.2.4 Technical Data Sheet

Structural Shape

Upright model	FKS 3690-1
Climatic class	N (16-32° C ambient temperature)

Dimensions

Height	approx.	cm	157
Width	approx.	cm	60
Depth	approx.	cm	60
Number of doors		pc.	1
Hinge of door changeable			right/left

Characteristics

Gross capacity in total	approx.	ltr.	360 l (12 cft)
Defrosting in refrigerator part			automatically

Equipment

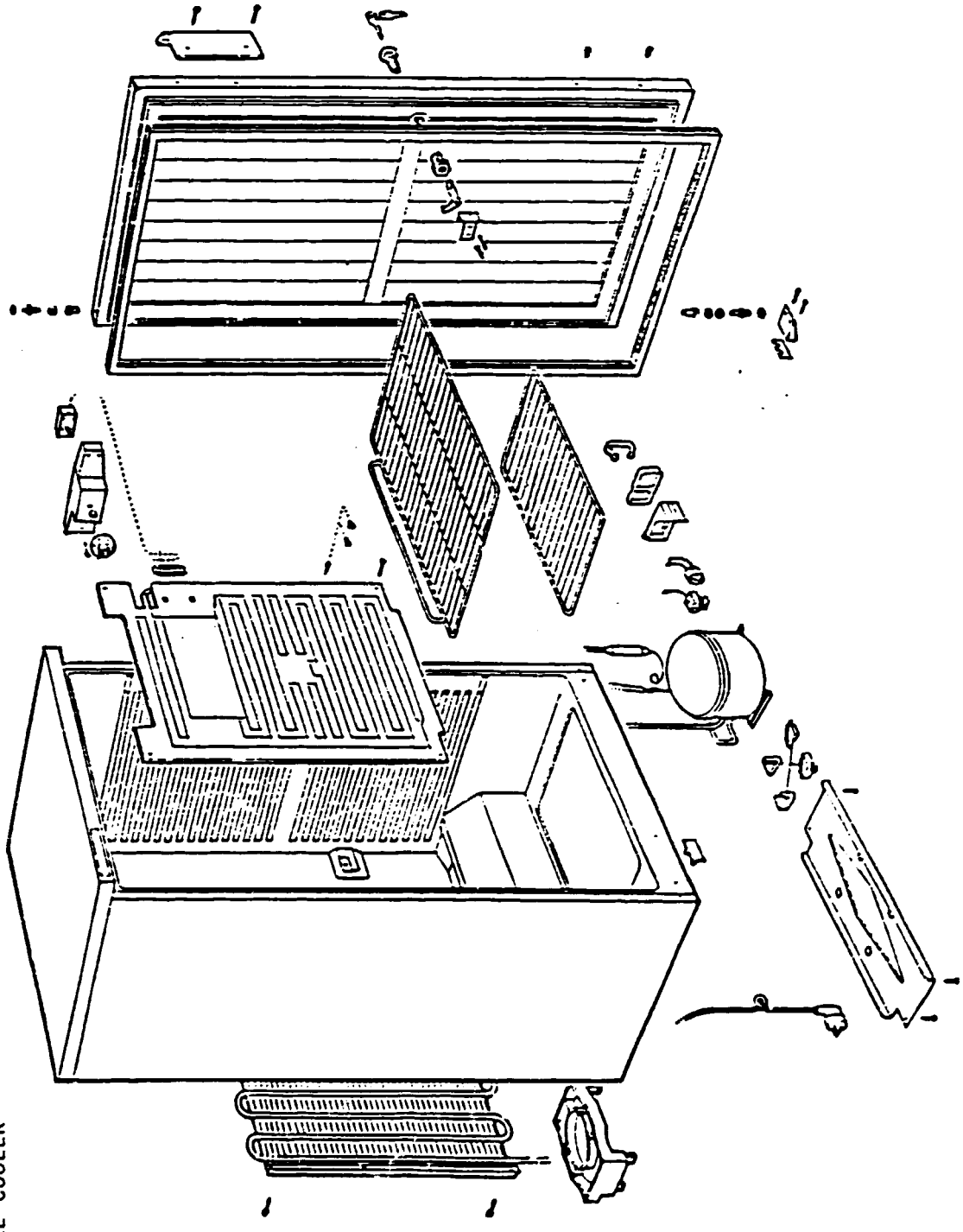
Refrigerator part:

Shelves variable in height	pcs.	5
Bottom shelves	pc.	1

Power Supply

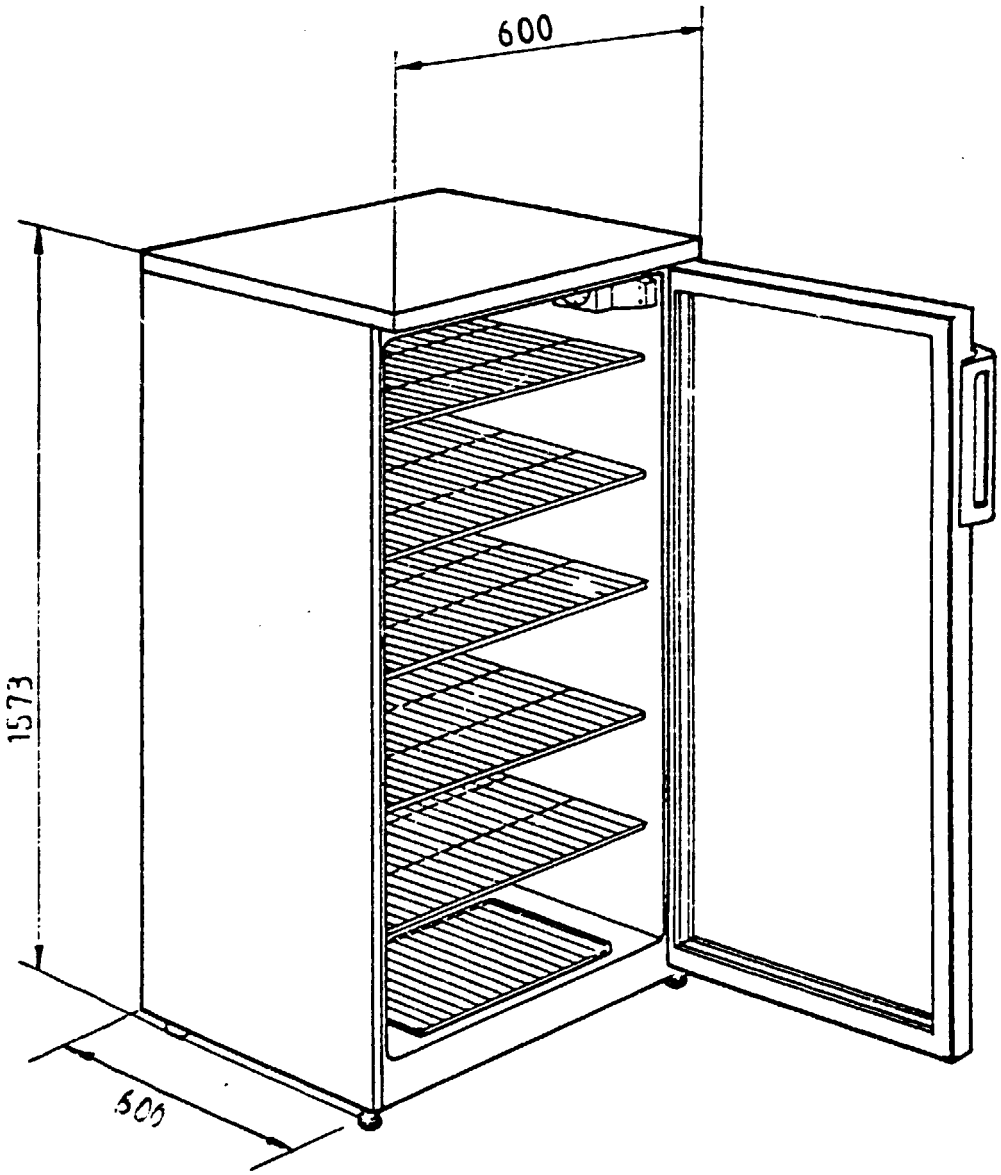
Tension / Frequency	240 V ± 10 % / 50 Hz
Energy consumption according to DIN	1.1 kWh / 24 h

These indications are subject to technical modifications.



5.2.5 EXPLODED DRAWING
BOTTLE-COOLER

BOTTLE COOLER
MODEL FKS 3690-1



5.2.6 Table 26

COST ESTIMATION OF RAW MATERIALS, COMPONENTS AND PARTS

Model	Basic price per unit	Packaging cost (incl. material)	Miscellaneous	Production capacity	Total price ex works **
Bottle cooler FKS 3690-1	DM 360.00	DM 20.00	DM 5.00	300	DM 115,500.00
Refrigerator/ Freezer KGD 3492-1	DM 580.00	DM 20.00	DM 5.00	600	DM 363,000.00
Refrigerator/ Freezer KSD 2794-1	DM 430.00	DM 20.00	DM 5.00	850	DM 386,750.00
Total cost per year (ex works)					DM 865,250.00

** From the second year of production, it is estimated that the unit price will increase by 2 % every year.

5.3 Production Process

5.3.1 Description of Production Technology

In the following a description of production technology corresponding to the manufacturing shown in the layout of the factory (drawing no. A, 001) is given.

Storage for bought parts:

The parts to be supplied by the technical partner are transported to the factory by means of containers having a capacity of 20 resp. 40 cft.

According to the provided storage equipment the parts are stored on shelves and pallets allowing to be taken from the store in such number and at such time as production requires.

The storage department requires a forklift.

Vacuum forming:

The basic material for the vacuum forming is a plastic flat sheet of polystyrene, exactly cut to size for each part that is to be formed.

The plastic flat sheet is taken from the plate store and prepared for the vacuum forming machine with upper die, clamping frame and tempering units. The following parts will be manufactured:

- inner casing for KSD 2794-1
- inner casing for KGD 3494-1
- inner casing for FKS 3690-1
- upper drawer for freezer section *
- lower drawer for freezer section *

* standardized parts for KSD 2794-1 and KGD 3494-1

Function of the Forming Machine:

The flat sheet is put onto the clamping frame by hand. The sheet is firmly clamped at the edges from all sides. From above and below a heating device is inserted carrying a great number of electrical heating elements which can be switched on and off individually. Each outline form (for each formed part) has its own pre-set heating programme.

In this device the sheet is heated until it turns soft and formable. Now the heating device is removed and the mould brought to the sheet. By means of drawing a vacuum the softened sheet is drawn to the mould tightly and with exact contour. During the cooling period that follows, the part thus formed solidifies and can be removed from the machine.

Preparation and Control of Parts:

All parts that are necessary for the production of the inner casings are taken from the store, controlled and touched up, if necessary.

After that the parts are prepared for foaming.

Cutting:

The vacuum-formed parts, such as upper and lower drawers, are fastened on corresponding timpers and cut to exact contour and measurement by means of a plastic circular saw. Then the parts are transported to the intermediate storage.

Pressing on of Evaporators:

Before foaming, a plate evaporator is pressed on to the rear wall of the casing (refrigerator section) by means of a special device.

Foaming Device:

In the foaming device the inner casing, the lateral walls, the traverse connection, the cover-plate, the table top, the bottom and rear wall cover are assembled and sealed in the foaming mould to a housing.

With a polyurethane foaming device a homogeneous mixture with precise proportion and quantity is produced from the various components, and the mixture is injected into the foaming mould. Because of a pressure of approx. 1 kg/sq.cm arising during the reaction and hardening phase (duration 10 to 20 minutes), the hollow bodies must be supported in the mould from all sides. After the hardening, the pressure drops to zero again, and the finished and rigid housing can be taken from the mould.

The required holes are drilled in the foamed housing.

Final Assembly:

The pre-checked sub-assemblies (housing, complete doors, die-injection parts, interior outfit and miscellaneous small parts) are assembled in a final assembly line into the complete refrigerator. As far as necessary, motor-operated hand-tools are used for this purpose.

The cooling system is also fitted in the course of the final assembly. The previously fitted elements such as evaporator, condenser, compressor, are opened, the filter-drier is inserted and all tube-ends are put together, covered with flux and then soldered with a special solder.

The procedure with the refrigeration circuit being open, should be completed in 10 minutes' time at most, as to avoid too much moisture entering into the system.

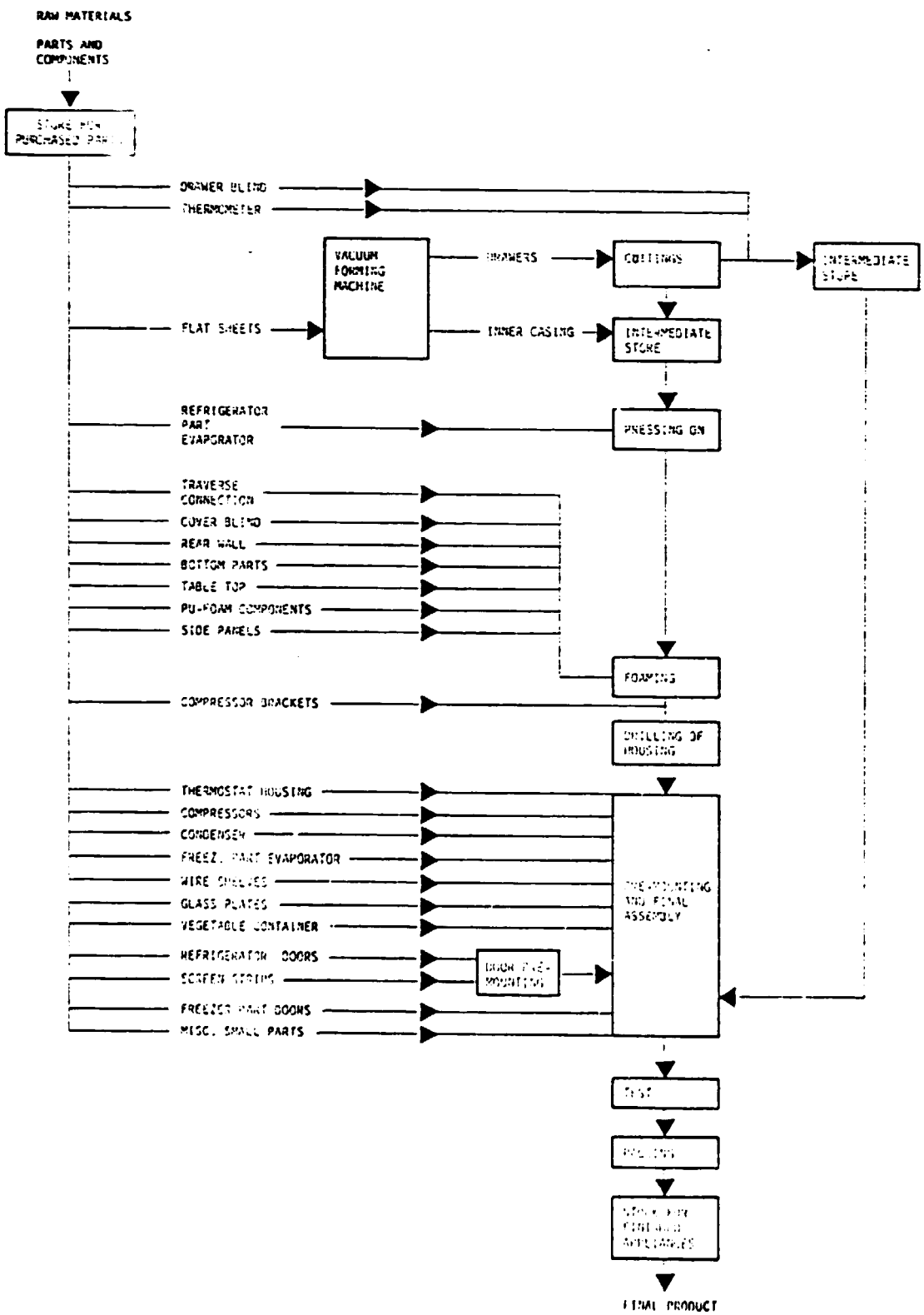
After assembly of the cooling system, the refrigerant is filled into the system by means of an evacuating and filling device.

Prior to this a vacuum must be created by means of a vacuum device. This process is supervised and controlled by contact pressure gauges, followed by the second phase of filling the exact quantity of refrigerant. As refrigerants are extremely dry, the respective gasket of the proportioning device is subject to high requirements. After the prescribed quantity of refrigerant has been filled, the end of the filling process is optically shown.

The filling tube is squeezed off, the valve removed and the filling tube closed by soldering.

Finally an examination for proper function and quality is made and after packing the refrigerator is ready for dispatch.

5.3.2 Production of Refrigerators/Freezers and Bottle-Coolers



5.4 Machinery and Equipment

Item 1

Vacuum Forming Unit

for the production of inner casings

The machine is designed as a trimless unit equipped with clamping frame and heating elements.

Maximum size of plastic sheets: 2,000 mm x 1,000 mm

Additional Equipment:

2 water-tempering units
3 vacuum forming moulds for the production of inner casings (KSD 2794-1, KGD 3494-1, FKS 3600), with corresponding clamping frames
2 vacuum forming moulds for the production of upper and lower drawers, with corresponding clamping frames
3 wooden trimming blocks
1 horizontal/vertical trimming saw
2 power fire extinguishers
1 special device for pressing on of evaporators

Item 2

Foaming Unit

The unit is designed as a low-pressure machine.

Foam material:	polyurethane
Capacity:	13 - 65 kg/min

The unit is equipped with:

Material tank	110 ltr.
Heat exchanger	
Timers for control of pour-time	
Solvent tank	25 ltr.
Mixing head	
Pillar-bracket jet crane	
Pneumatic barrel pump	
Barrel cooling unit	
Folding barrel mixer (pneumatic)	
Foaming jig for housing KGD 3494-1	
and supporting cores for KSD 2794-1 and FKS 3600	
Lifting device for foamed housings	
5 Drilling jigs for foamed housings	
Pneumatic and electric drilling machine	

Item 3
Final Assembly Unit

The unit consists of:

Evacuation and filling device
Leak-control spray
Tools
Hard soldering set
Test instruments

Item 4
Repair Unit

The unit consists of:

Compressed-air spray gun
Polishing devices and paste
Tools

Item 5
General Equipment

For the internal transport a forklift with a capacity of 1.2 t is foreseen.
Workbench
Shelve-system
Tools

The effective working hours available and the production capacity of 1,750 units per annum including capacity reserves were the basis for the dimensioning of machinery and equipment.

5.5 Production Capacity

The assumed number of working days amounts to 240 days per year; a working shift comprises 8 hours.

240 working days/year x 8 hours per shift
= 1,920 hours of attendance/year.

According to general experiences the theoretical capacity of production equipment will be reduced due to the following factors:

- reset times for machinery,
- sickness and other absence-times of employees,
- failure of machines and repairs,
- failure of tools,
- touch-up and refuse,
- power failure,
- learning weeks.

It can be assumed that all these factors will lead to a reduction of the total capacity by at least 10 %.

Based on this assumption, the following yearly operating times of production equipment are given:

Table 27

WORKING HOURS PER YEAR

Basis	Working hours per year	
	theoretical	effective
1 Shift	1,920	1,728

6. Project Site and Physical Infrastructure

6.1 Project Site

The plant shall be erected at a site which is located approximately 5 km outside the City of Blantyre.

The envisaged site borders directly to the National Road M 2 which is in excellent condition. Power and telephone lines run in parallel to that road. Hence the plant can be connected to both at little expenditure.

The site which is owned by the local partner, is situated 911 m above sea level.

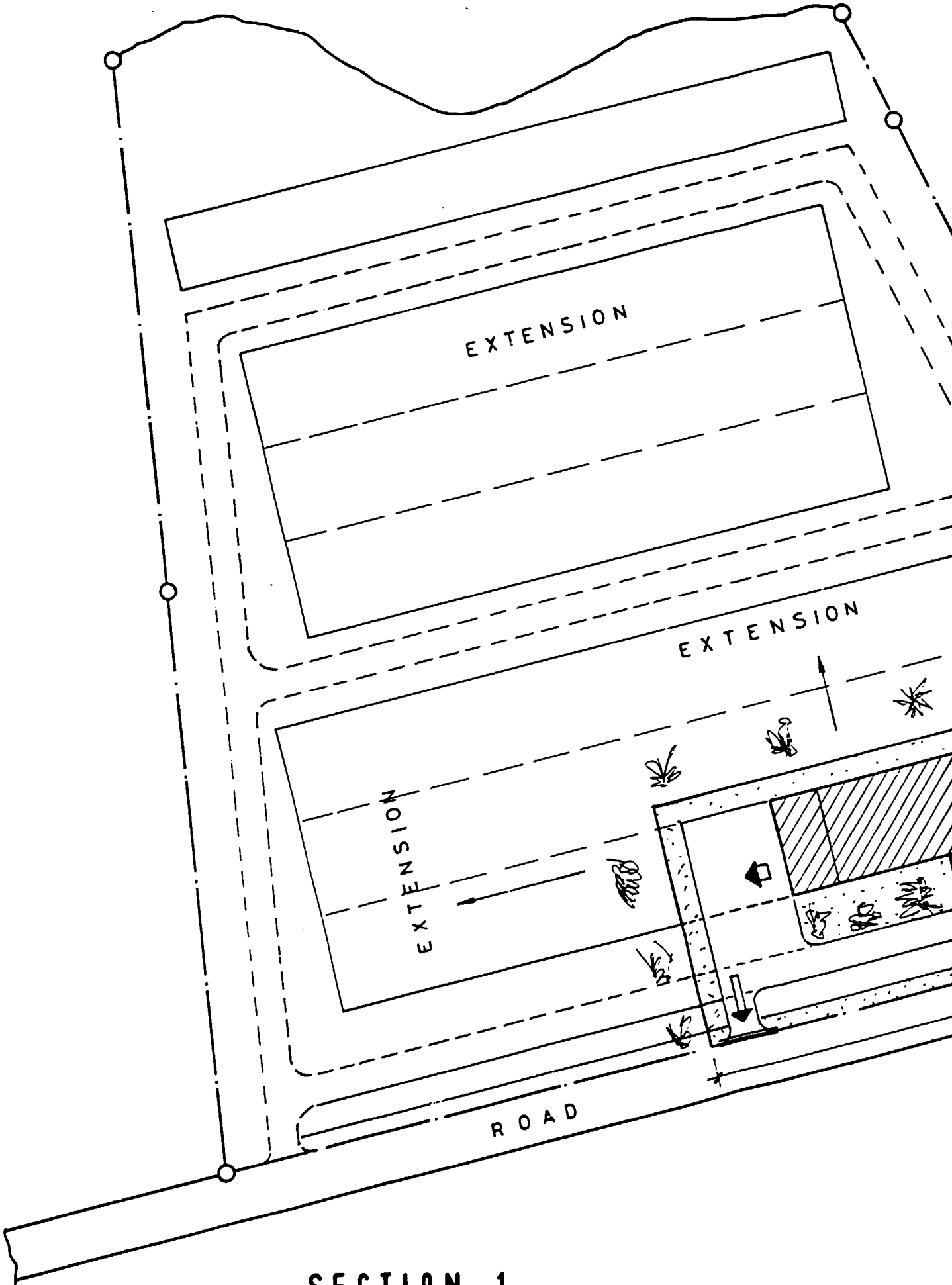
Originally the site was used as sports field. The surface is even and without any growth of trees or bushes. Therefore no preparatory earthworks will be required.

The site is located in an area foreseen as an industrial area. In close vicinity industrial plants have already been established (among others Ceramic Co. Ltd., Bricks and Tiles Manufacturers).

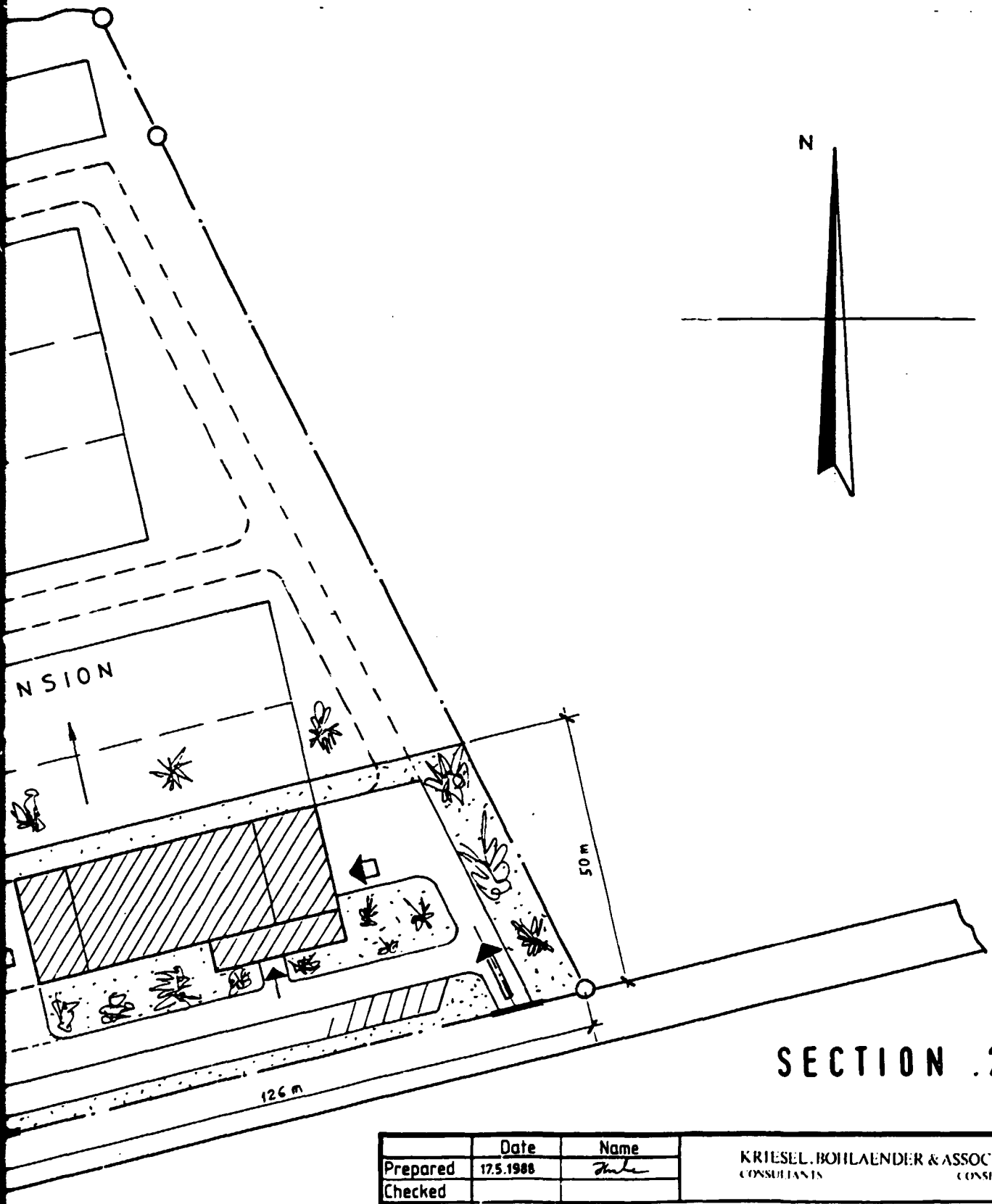
The project site will be part of a total area of more than 40,000 sq.m (9,919 acres). The entire complex for factory, administration, parking lots and road comprises about 6,420 sq.m (1,590 acres) and thus offers ample possibilities for eventual extensions.

The location of the site and site conditions seem to be very suitable for the establishment of the plant. In particular it is the good infrastructure that meets all prerequisites.

The cost of the site amounts to MK 50,000.00.



SECTION 1



SECTION .2

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Prepared	17.5.1988		
Checked			

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Title / Characteristic Features: SITUATION

Standard:

Document Type:

Process:

Job: REFRIGERATOR PLANT - MALAWI

Document No.			Derived from:	Rev.:
645	A	002		
Job or Project No.	Serial No.	Rev.	Original Size: A	

6.3 Production and Office Buildings

6.3.1 Production Building

The total area necessary for the production covers 1,000 sq.m. A factory building of 60 m x 20 m (1,200 sq.m) has been envisaged with a clearance height of 6 m.

The building will consist of the following sections:

1.	Compressor room	12 sq.m
2.	Main switchboard	12 sq.m
3.	Bought parts store	226 sq.m
4.	Vacuum forming section	117 sq.m
5.	Pre-assembly section	52 sq.m
6.	Foaming section	150 sq.m
7.	Final assembly section	84 sq.m
8.	Repair section	21 sq.m
9.	Intermediate store	143 sq.m
10.	Office	12 sq.m
11.	Toilet	7 sq.m
12.	Packing and finished products store	233 sq.m
13.	Miscellaneous	131 sq.m
	Total:	1,200 sq.m

The factory shall be constructed as a steel construction based on a cement floor. The walls are to be made of brick-work. The roof shall be covered with corrugated sheet iron.

6.3.1.1 Specifications and Technical Data of the Production Building

Dimensions:	Length	60 m
	Width	20 m
	Clearance height	6 m

Buildings:
The production building has separate rooms for the main switchboard and compressor plant. Furthermore it contains an office room (for the technical manager) and a lavatory. The production area is to be separated from the storage areas by brick-walls (height 4 m).

Entry and exit	sliding doors of 3 m x 4 m
Floor	sealed against dust maximum bearing capacity: 1,500 kg/sq.m
Earthing	Earthing of the steel structure and machinery: sheathing or copper ring circuit (cross section 70 sq.mm)
Water supply	supply and outlet by canals in the floor

6.3.1.2 Required Installation Material

Electrical Installation:

in production building	lamps 250 Lux
in administration building	lamps 350 Lux
20 sockets and combinations	230/440 V
1 automatic excess-voltage cut-off switch	

Compressed Air Supply:

1 screw compressor capacity including pressure vessel and drier	93 Ncu.m/hr

Installation Material

Steel pipes

Fittings of various shapes

Connections

Fixing materials

Connecting material up to the consumers

Connections/Installations to be installed at a height of 1.30 m above the floor.

Water Supply:

Water distribution with filter and meter

Feeding pipes (installed in the floor canals)
made of steel, galvanized and isolated
with plastic material

Drain pipes of plastic material (PE)

Fittings

Connections of various shapes,

Valves etc.

6.3.2 Office Building

The office building shall directly adjoin the production building. The clearance height of the building is 3 m.

The total building covers a surface of 150 sq.m (25 m x 6 m), composed of the following sections:

1. Reception	4.8 sq.m
2. Two offices	38.4 sq.m
3. Office of general manager	21.0 sq.m
4. Secretariate	12.0 sq.m
5. Showroom	12.0 sq.m
6. Toilets	7.2 sq.m
7. Tea-kitchen	4.8 sq.m
8. Miscellaneous	49.8 sq.m
Total:	150.0 sq.m

The office will be fully equipped with furniture, such as desks, chairs, filing cabinets as well as with appliances such as type-writers, table calculators, copying machine, telephone and telex etc.

The structural characteristics of the office building comply with those of the production building.

6.3.3 Roads and Parking Lots

The road within the site as well as the parking lots shall be asphalted. A ring road should lead around the plant, with three accesses, one to the production building and two to the main road.

1. Roads within the site	876 sq.m
2. Parking lots and manoeuvring space	1,117 sq.m
Total:	1,993 sq.m

6.4 Utilities

6.4.1 Electric Power

Voltage	230/400 V ± 6 %
Frequency	50 Hz ± 2.5 %

In direct neighbourhood to the site, parallel to the National Road M 2, there is an 11-kV public current line providing the other industrial establishments of the region with electricity. This line can be tapped. For the industrial customers of ESCOM (Electricity Supply Commission of Malawi) up to 80 % of the costs of the connection to the supply line including the transformer can be waived.

Particularly in the wet season (from December to March) a constant voltage supply is not guaranteed. Apart from voltage failures, there are voltage deviations which considerably exceed the rated tolerances of ± 6 %.

Power failures total in 1987:

High voltage	1,900
Low voltage	5,560
Consumer faults	6,800

Power failures in December 1987 (wet season):

High voltage	350
Low voltage	500
Consumer faults	1,600

Taking this situation of power supply into consideration, the following preventive measures are planned:

- for the protection of machinery and equipment an automatic excess-voltage cut-off system is foreseen;
- the installed compressors both for the refrigerators/freezers and bottle-coolers will remain fully functionable even at voltage deviations of ± 10 % (216 - 264 V at 30° C ambient temperature).

Schedule of Standard Tariffs:

Charges for Electricity from the Interconnected System
Scale IV - Maximum Demand Tariff

For the supply of electricity to a consumer with an average maximum demand of 25 kVA or more:

(a) fixed charge	MK 19.12
(b) for each of the first 60 kVA per month	MK 19.12 per kVA, per unit
(c) for each of the next 240 kVA per month	MK 17.52 per kVA, per month
(c) charge per kWh	MK 0.023 per unit

6.4.2 Drinking Water

Blantyre's industrial areas are supplied by a public drinking water provision. Responsible is the Blantyre Water Board. There is no public sewage system. Consequently any waste water must be stored in a septic tank.

Water Rates in Blantyre

Tariff Group:

All consumers other than those in traditional housing areas and those served by stand pipes and kiosks:

the first 6.8 cu.m used	MK 2.40
thereafter up to 51.8 cu.m per cu.m	MK 0.71
thereafter per cu.m	MK 0.77

6.4.3 Telecommunications

The site can be connected to the telephone system via a telephone line which runs parallel with the public current line. The connection will be made by the Department of Posts and Telecommunications. Cost for telephone and telex connection is included in site preparation.

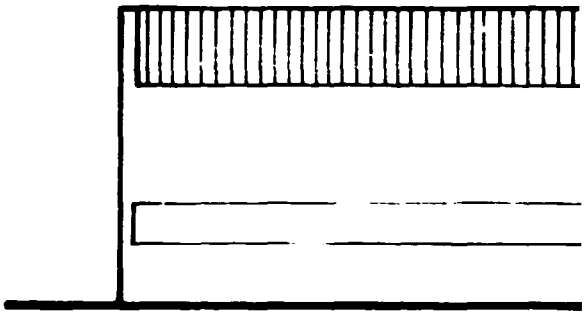
6.4.4 Vehicles

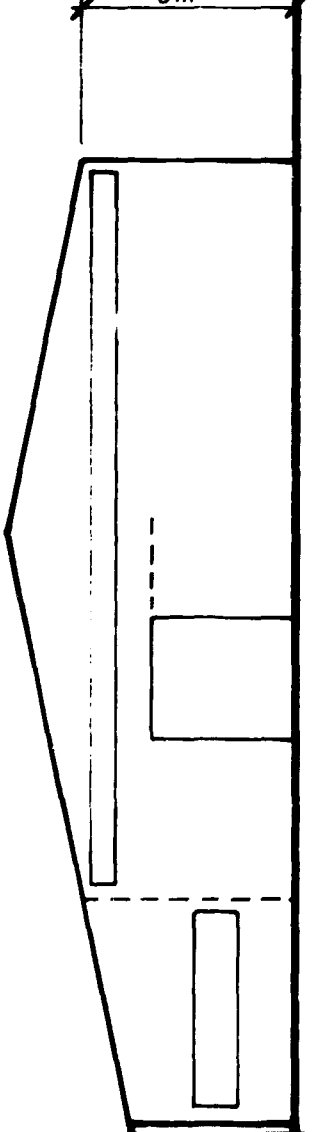
The plant should be equipped with 2 vehicles, namely a passenger car and a pickup. The passenger car is to be used by the management, the pickup car will be at disposal for service purposes and transport.

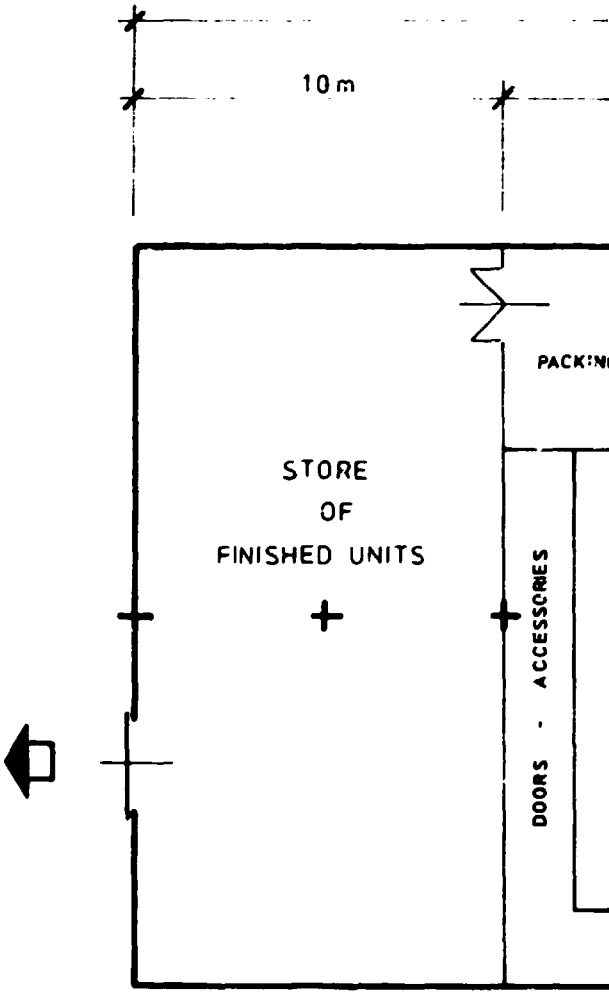
Cost of vehicles:

1 passenger car	DM 40,000.00
1 pickup car	DM 40,000.00

SECTION 1







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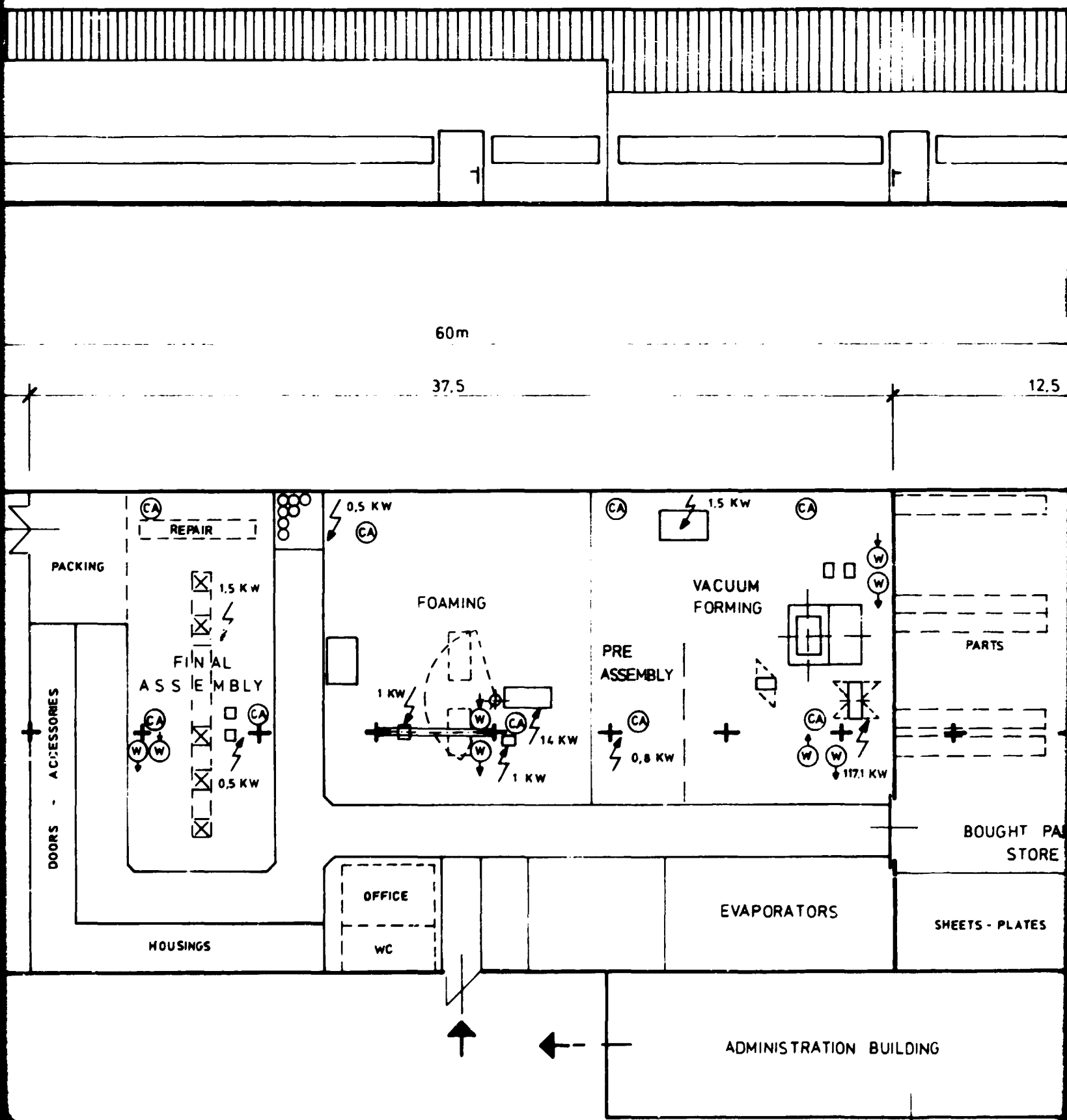
60m
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PACKING
REPAIR
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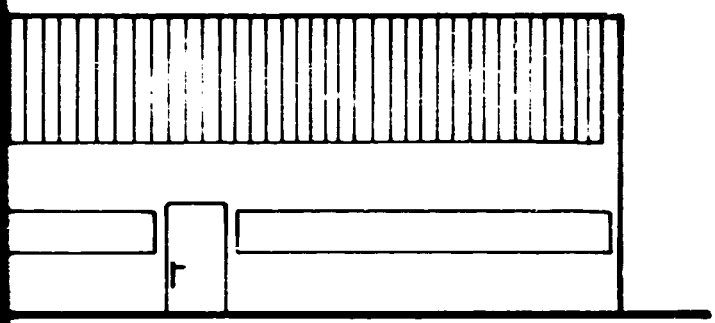
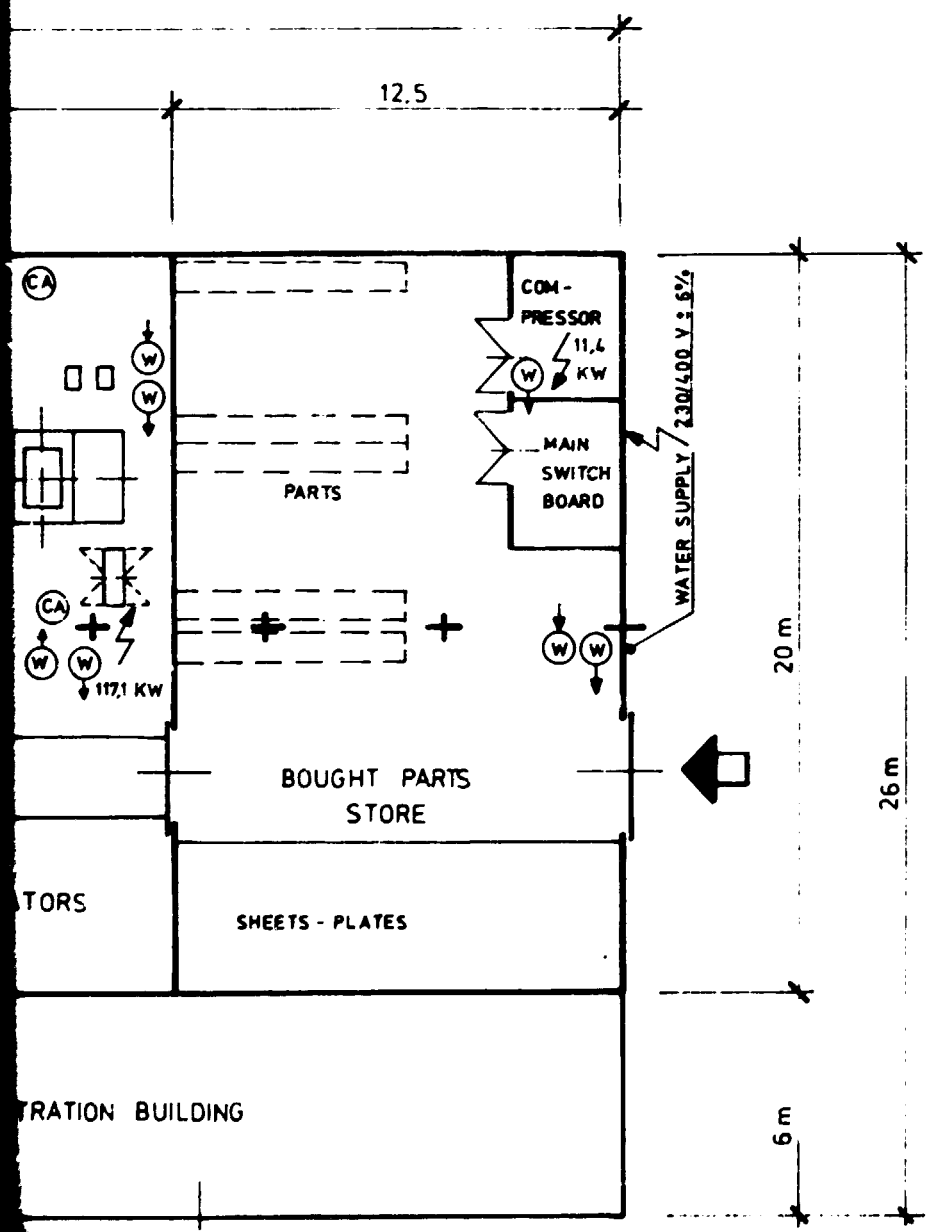
FINAL
ASSEMBLY
0.5 KW
DOORS - ACCESSORIES
HOUSINGS
0.5 KW
FOAMING
1 KW
14 KW
1 KW
1.5 KW
VACUUM
FORMING
PRE
ASSEMBLY
0,8 KW
117.1 KW
PARTS
BOUGHT PA
STORE
OFFICE
WC
EVAPORATORS
SHEETS - PLATES
ADMINISTRATION BUILDING

SECTION 3

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PARTS
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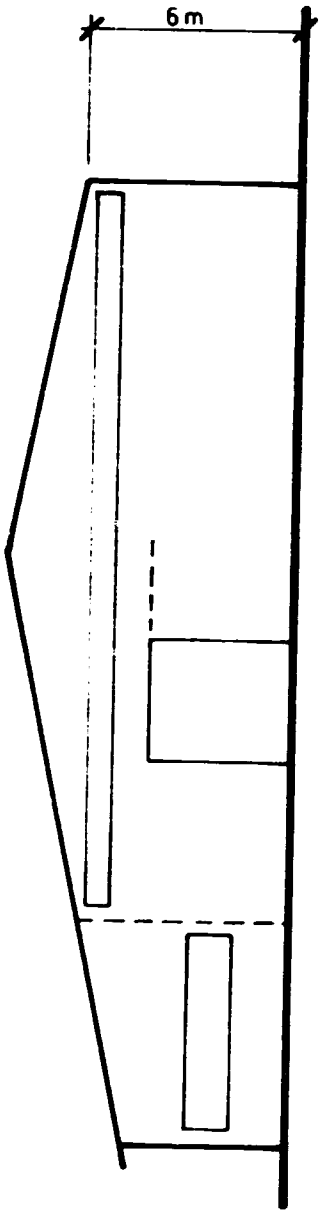
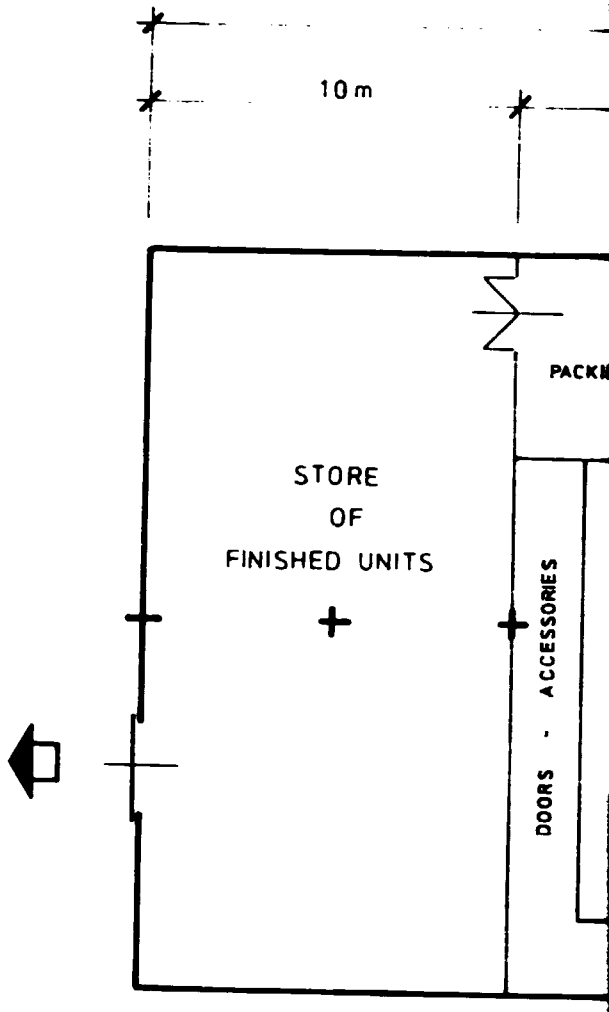
20 m
26 m
BOUGHT PARTS
STORE
TORS
SHEETS - PLATES
TRATION BUILDING
6 m

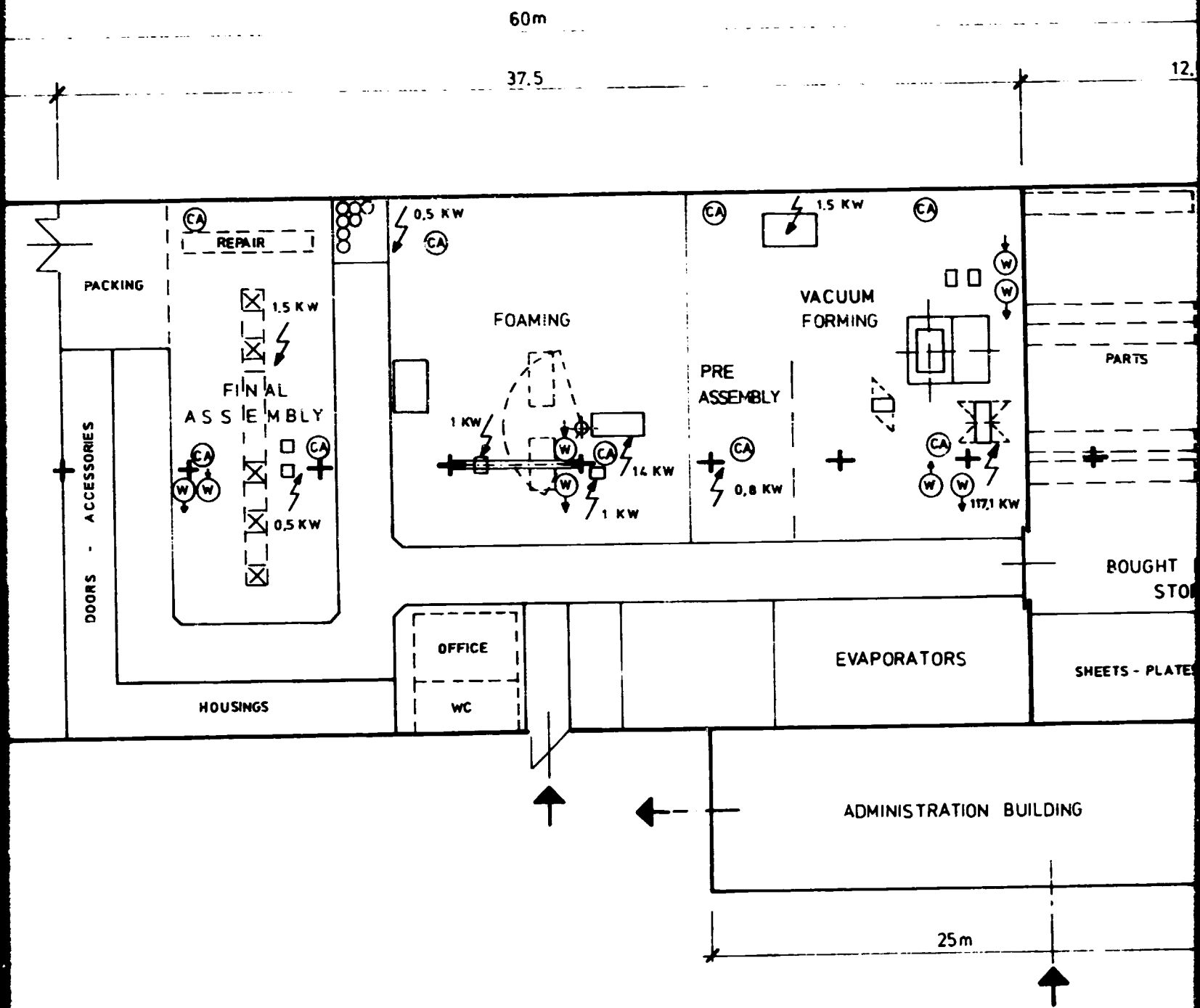




SECTION 4

LEGEND:

- (W) WATER SUPPLY
- (W) WASTE WATER
- (CA) COMPR AIR SUPPLY
- POWER SUPPLY


60m
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12.
REPAIR
PACKING
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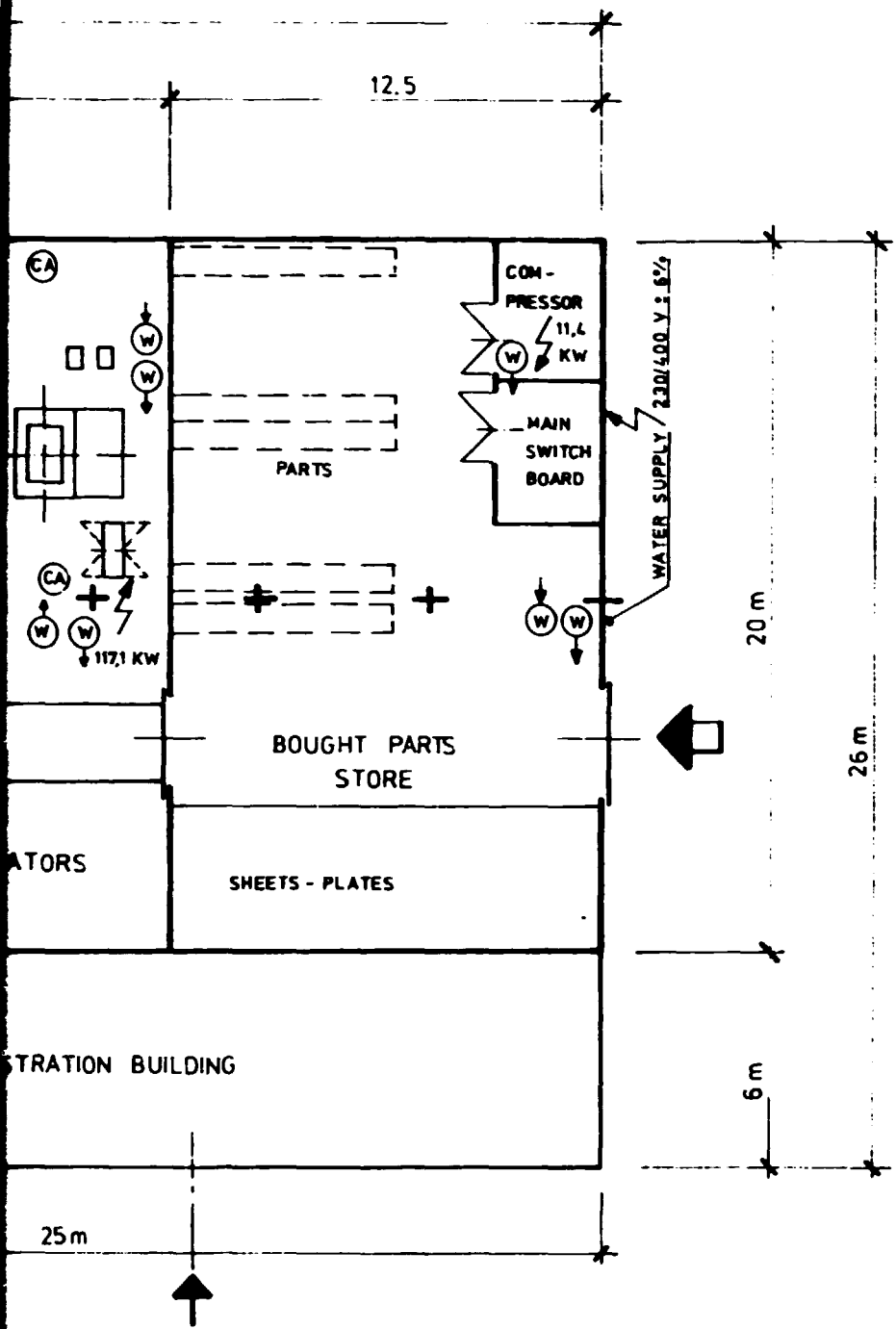
FINAL
ASSEMBLY
0,5 KW
DOORS - ACCESSORIES
0,5 KW
FOAMING
1 KW
14 KW
1 KW
1.5 KW
VACUUM
FORMING
PRE
ASSEMBLY
0,8 KW
117,1 KW
PARTS
BOUGHT
STO
OFFICE
WC
HOUSINGS
EVAPORATORS
SHEETS - PLATE
ADMINISTRATION BUILDING
25m

SECTION 5



SECTION 6

	Date	Name	
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LAYOUT

Standard

Document Type

Process

Job REFRIGERATOR PLANT - MALAWI

Document No. 6 4 5 A 0 0 1

Derived from:

Rev.:

6.6 Cost Estimations

6.6.1 Cost Estimation of Production Equipment

Table 28

MACHINERY AND EQUIPMENT (EX WORKS)

Item	Description	Costs
1	Vacuum forming unit	DM 642,250.00
2	Foaming unit	DM 232,700.00
3	Final assembly line	DM 18,620.00
4	Spare parts (4 %)	DM 37,230.00
	Total	DM 930,800.00

Table 29

INSTALLATION MATERIAL AND GENERAL EQUIPMENT **
(EX WORKS)

Item	Description	Costs
1	Internal transport	DM 19,000.00
2	Repair unit	DM 11,000.00
3	Installation material (electrical)	DM 141,000.00
4	Installation material (water)	DM 5,000.00
5	Compressed air system	DM 35,800.00
	Total	DM 211,800.00

** In the cost estimation of installation material and general equipment 4 % are included for spare parts.

6.6.2 Construction Works

The cost of the construction works was calculated on the basis of offers according to specification from several Malawian contractors.

1. Construction of the factory and office building, including foundation, steel structures, corrugated steel roofing, flooring, walls and doors, septic tank	MK 390,059.--
2. Construction of road and parking lots with bitumen top	MK 60,000.--
3. Fencing all around the complex including two main gates and a single-room watch-house at each gate	MK 15,000.--
4. Construction of drain of 0.45 m x 0.60 m with base slab, vertical side walls and pre-cast cover slab	MK 4,000.--
5. Preparation of the site	MK 5,000.--
6. Indoor works, installation of drinking and cooling water system, compressed air system, tele-communications and lighting	MK 99,981.--

7. Connection of power, telecommunications and water-supply to the factory	MK 15,250.--
Cost of construction	MK 589,290.--
Cost of local engineering	MK 35,000.--
Total cost of construction works:	MK 624,290.--

The average maintenance costs for the buildings are valued with approx. 1.5 % of the construction costs per year.

The annual maintenance costs are	approx.	MK 9,000.--

6.6.3 Cost Estimation Utilities

Electric Power:

- Connected load 250 kW
- Effective consumption per hour 160 kW
- Annual consumption of electricity 307,200 kWh
  (= 25.600 kWh/month)

According to the electricity tariff of ESCOM (see para 6.4.1), the cost for electricity is made up by

a) fixed charge MK 19.12
b) charge per kWh MK 0.023

The energy charges for 25,600 kWh/month will be:

MK 0.023 x 25,600 + MK 19.12 = MK 607.92

Total costs of energy per year:

MK 607.92 x 12 = MK 7,295.04
==========

Water:

Consumption per month: 196 cu.m

According to Blantyre Water Board rates (see para. 6.4.2) the cost for water supply is made up by:

a) cost for the first 6.8 cu.m MK 2.40

b) thereafter up to 51.8 cu.m per cu.m MK 0.71

c) thereafter per cu.m MK 0.77

Charges for 196 cu.m/month water consumption will be:

MK 2.40 + MK 0.71 x 45 + MK 0.77 x 144.2

= MK 145.40

Total cost of water per year:

MK 145.4 x 12 = MK 1,745.00

Telecommunication:

According to the information given by the Department of Post and Telecommunication, and after estimation of the communication expenditure, the following costs are expected:

Average costs per month	MK 500.00
Average costs per year	MK 6,000.00

Vehicles:

- Fuel costs:

Number of vehicles	2
Cost of fuel	MK 1.85/ltr
Annual mileage per vehicle	25,000 km
Fuel consumption	12 ltr fuel/100 km

Calculation of the annual fuel costs:

$$\frac{25{,}000 \text{ km} \times 12 \text{ ltr} \times 2}{100 \text{ km} \times \text{yr}} = 6{,}000 \text{ ltr/year}$$

6,000 ltr x MK 1.85/ltr = MK 11,100.00/year

- Maintenance:

The average maintenance costs for the vehicles have been calculated with 5 % of the value of new vehicles, which amounts to MK 4,000.00/year

Table 30

COST ESTIMATION UTILITIES
ALLOTTED TO PRODUCTION, ADMINISTRATION
AND FACTORY OVERHEADS

	Costs (MK)	Admini-stration	Production	Factory Overheads
Electric Power	7,295.04	15 % 1,094.27	70 % 5,106.50	15 % 1,094.27
Water	1,745.00	0 % -	80 % 1,396.00	20 % 349.00
Telecommu-nication	6,000.00	30 % 1,800.00	0 % -	70 % 4,200.00
Vehicles	15,100.00	0 % -	0 % -	100 % 15,100.00
Total cost	30,140.04	2,894.27	6,502.50	20,743.27

6.6.4 Transportation and Freight

6.6.4.1 Transportation of Machinery and Equipment

The required machinery and equipment for the production of the refrigerators/freezers and bottle-coolers will be transported in two 20-ft containers.

Table 31

TECHNICAL DATA OF
20-FT AND 40-FT CONTAINERS

	20-ft container	40 ft container
Volume	approx. 30 cu.m	approx. 60 cu.m
Height (interior)	2.38 m	2.38 m
Width (interior)	2.36 m	2.36 m
Length (interior)	5.90 m	12.07 m

Basis of Freight Calculation:

- Transport of two 20-ft containers by tandem loading (two on a truck) ex factory Ochsenhausen (Federal Republic of Germany) to f.a.s. European North Sea port	DM 2,150.--
- Terminal handling charges	DM 466.--
- Transport from European port to Durban port (RSA)	DM 4,360.--
- Transport from Durban port to project site Blantyre	DM 10.631.--
Total transport cost for machinery and equipment	DM 17,607.--

In the calculation of the transportation costs the following items are included:
Wharfage, handling and clearing charges, customs examination charges and transport insurance.

6.6.4.2 Transportation of Raw Materials, Components and Parts

The required raw materials, compontents and parts necessary for one year of production will be transported in

8 x 40-ft containers
2 x 20-ft containers.

Basis of calaculation:

Model	Loading capacity per 40-ft container
Bottle-cooler type FKS 3690-1	250 kits
Refrigerator/ freezer type KSD 2794-1	220 kits
Refrigerator/ freezer type KGD 3494-1	190 kits

- Transportation cost ex factory
  Ochsenhausen (FRG)
  to f.a.s. European North Sea port

40-ft container	DM 2,150.--
20-ft container	DM 1,175.--

- Terminal handling charges

40-ft container	DM 460.--
20-ft container	DM 233.--

- Transport from European port
  to Durban port (RSA)

40-ft container	DM 4,460.--
20-ft container	DM 2,180.--

- Transport from Durban port to
  project site Blantyre

40-ft container	DM 11,025.--
20-ft container	DM 5,315.--

In the calculation of the transportation costs the following items are included:

Wharfage, handling and clearing charges, customs examination charges, and transport insurance.

The supply of raw materials, components and parts will be carried out on a quarterly basis.

I. Quarter:	Supply of	
	2 x 40-ft containers	DM 36,202.--
II. Quarter:	Supply of	
	2 x 40-ft containers and	
	1 x 20-ft container	DM 45,081.--
III. Quarter:	Supply of	
	2 x 40-ft containers	DM 36,202.--
IV. Quarter:	Supply of	
	2 x 40-ft containers and	
	1 x 20-ft container	DM 45,081.--
The total freight costs for raw materials, components and parts per year will amount to		DM 162,566.--

6.6.5 Packaging of Finished Products

Packing material for refrigerators is locally not available and consequently must be included in the scope of supply.

The costs for packaging (per unit) are indicated as follows:

- refrigerator/freezer combination KGD 3494-1 DM 12.00
- refrigerator/freezer combination KSD 2794-1 DM 11.50
- bottle-cooler FKS 3690-1 DM 11.50

At 100 % production capacity, the total packaging cost for final products will be:

Table 32

PACKAGING COST (IN DM) OF FINAL PRODUCT AT 100 % PRODUCTION CAPACITY

Product	Quantity produced per year	Packaging cost per unit	Packaging cost per year
KGD 3494-1	600	12.00	7,200.00
KSD 2794-1	850	11.50	9,775.00
FKS 3690-1	300	11.50	3,450.00
Total:	1,750		20,425.00

7. IMPLEMENTATION

7.1 Planning and Supervision of Construction, Supplies and Installation

The factory and office building and the infrastructural measures and installations shall be executed by local contractors to be appointed by the new company.

The foreign technical partner shall provide the comprehensive specifications with regard to the layout of the building.

Construction plans and statical calculations, however, are in the responsibility of the contractor.

The supervision of construction should be executed by an independent local civil consultant/quantity surveyor.

Finally the foreign technical partner will examine the factory and office building.

The supply and installation of the machinery and equipment is in the responsibiiity of the foreign technical partner, and so is the commissioning of the plant.

The following schedule shows the sequences of the project.

7.2 Schedule of Activities

The time schedule of the project implementation is shown in the following table:

Table 33

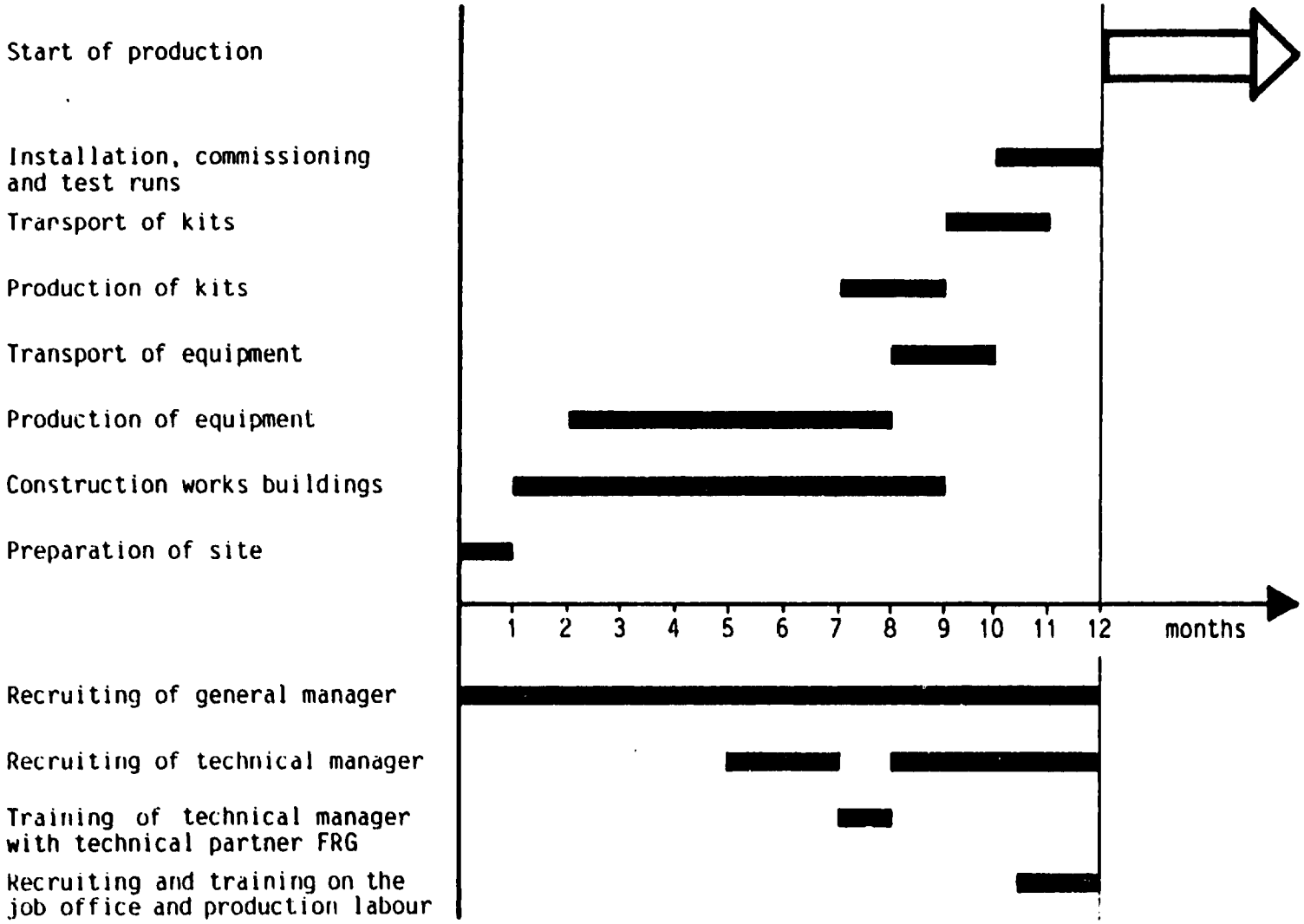
TIME SCHEDULE
OF PROJECT IMPLEMENTATION

Activity	Duration	Start in month
Preparation of site	1 month	1st month
Construction works	8 months	2nd month
Production of equipment	7 months	2nd month
Transport of equipment	2 months	8th month
Production of kits	2 months	7th month
Transport of kits	2 months	9th month
Installation and commissioning	2 months	10th month
Start of production		12th month

The manufacture of refrigerators/freezers and bottle-coolers at 100 % production capacity can be achieved in the 12th month after start of the implementation works.

7.3 Table 34

BAR CHART



8. MANPOWER

8.1 Recruiting of Personnel

The envisaged plant is to be located in Blantyre, and this city being the economic and industrial centre of Malawi, the recruiting of personnel will not prove very difficult.

The production process lays relatively low claims where technical skill is concerned, and this is why the production personnel can be trained in the course of an on-the-job programme. For this training phase on the average four weeks should be sufficient.

For the function of the technical manager an engineer ought to be selected who has already acquired experience with an industrial background. His main responsibility when the plant runs at full capacity, will be the smooth running of the production. When this position is filled, due consideration must be given to the point that at present there is no industrial production of refrigerators or comparable products in Malawi, and therefore no experience can have been acquired that is relevant to these products.

Hence when the technical manager is to be prepared for his activities, it would be useful to provide for him a training in the Federal Republic of Germany in co-operation with the technical partner. This

training should not be shorter than one month, and emphasis should be given to a comprehensive instruction as to the sequence of production as well as the machinery equipment of the production plant.

In accordance with the position of the technical manager within the company's structure, he is to be recruited at rather an early stage in the project schedule.

The general manager is responsible for the commercial and administrative management. This positions holds as a double function that of the accountant, too.

The general manager/accountant's responsibility comprises the sectors of

- distribution and marketing,
- cost calculation and control,
- staff planning,
- organization, and
- material planning,

and it goes without saying that he and the technical manager should direct their activities in close co-operation.

The general manager is directly accountable to the Board of Directors.

The position of the general manager will therefore be of great importance, and a professional with several years' practical experience should be engaged. This position ought to be filled at the start of the project.

The additional office staff is composed of employees for general administration, accounting and sales.

The recruiting of suitable personnel should pose no problems both in qualitative and quantitative regard.

8.2 Labour Inputs

Labour Production:

According to the calculation of the production capacity, the total output of 1,750 appliances at 100 % capacity level can be reached in 1,728 working hours per year.

The corresponding production labour input totals 13 employees allotted to qualification categories as follows:

Table 35

LABOUR PER QUALIFICATION CATEGORIES

Qualification	Numbers
Engineer	1
Technician	3
Skilled worker	4
Unskilled worker	5
Total production labour:	13

Office Staff:

The office staff is composed of employees for general administration, accounting and sales.

Table 36

CATEGORIES OF OFFICE STAFF

Category	Numbers
Accountant/commercial manager	1
Accountant's clerk	1
Secretary	1
Typist	1
Office clerk	1
Messengers	2
Total office staff:	7

Table 37

CATEGORIES OF ADDITIONAL
PERSONNEL REQUIREMENTS

Category	Numbers
Driver	2
Watchman	4
Total additional labour:	6

For the production of 1,750 units per year a total of 26 staff are required.

8.3 Cost Estimation Labour

8.3.1 Annual Cost

Table 38 shows the basic wages and salaries in Malawi broken down in production and administration.

Table 38
BASIC WAGES AND SALARIES (IN MK)

Position	Per Position	Number	Total Expenses
Production:			
Technical manager/ Engineer	850.00	1	850.00
Technician	400.00	3	1,200.00
Skilled worker	300.00	4	1,200.00
Unskilled worker	125.00	5	625.00
Administration:			
General manager and accountant	2,000.00	1	2,000.00
Accountant's clerk	400.00	1	400.00
Secretary	800.00	1	800.00
Office clerk	400.00	1	400.00
Messenger	125.00	2	250.00
Storekeeper	500.00	1	500.00
Additional personnel:			
Driver	165.00	2	330.00
Watchman	200.00	4	800.00
Total basic wages and salaries:			9,355.00

8.3.2 Annual Cost

Table 39 on the following page shows the total annual personnel expenses in Malawi Kwacha including an annual increase of 5 % and a bonus of 0.5 month, starting from the first year of production (capacity 100 %).

Table 39

TOTAL ANNUAL PERSONNEL EXPENSES IN MALAWI KWACHA

Position	Monthly Pay per Employee	Commencement of Pay in Project Month	Total Payment of Wages and Salaries		
			Year 1	Year 2 *) **)	Year 3 *) **)
1 General manager/ Accountant	2,000.00	1 *)	25,000.00	26,250.00	27,562.50
1 Technical manager/ Engineer	850.00	5 *)	7,225.00	11,156.25	11,714.06
3 Technicians	400.00	10.5	3,000.00	15,750.00	16,537.50
4 Skilled Workers	300.00	10.5	3,000.00	15,750.00	16.537.50
5 Unskilled Workers	125.00	10.5	1,562.50	8,203.13	8,613.30
1 Accountant's Clerk	400.00	10.5	1,000.00	5,250.00	5,512.50
1 Secretary	800.00	1 *)	10,000.00	10,500.00	11,025.00
1 Office Clerk	400.00	10.5	1,000.00	5,250.00	5,512.50
2 Messengers	125.00	10.5	625.00	3,281.25	3,445.32
1 Storekeeper	500.00	9	2,000.00	6,562.50	6,890.63
1 Driver	165.00	1 *)	2,062.50	2,165.63	2,273.91
1 Driver	165.00	10.5	412.50	2,165.63	2,273.91
4 Watchmen	200.00	2 *)	9,200.00	10,500.00	11,025.00
Total annual personnel expenses:			66,087.50	122,784.39	128,923.63
Average expenses per month:			5,507.30	10,232.03	10,743.64

*) including 0.5 M/M allowance + 0.5 M/M salary December bonus

**) annual increase of wages and salaries by 5 %

8.3.3 Labour (Direct), Administration (Labour) Overheads

The annual personnel expenses broken down into portions (%) of the different costs are based on the following assumptions:

- Production

  The assumed number of working hours amounts to 1,920 hours per year.

  The following factors reduce that total of annual working hours:

  -- non-productive hours due to failures in the plant (10 % of the total annual working hours) 192 h

  -- non-productive hours due to illness (4.2 % of the total annual working hours) 80 h

  -- non-productive hours due to leave of absence (4.2 % of the total annual working hours) 80 h

  Total: 352 h

  ≙ 18.5 % of the total annual working hours.

  These non-productive hours which amount to an average 18.5 % of the total annual working hours, are to be deducted from the production cost and allotted to the factory overheads.

- Administration

The assumed number of working hours amounts to 1,920 hours per year.

The following factors reduce that total of annual working hours:

-- general non-productive hours (3.7 % of the total annual working hours)	70 h
-- non-productive hours due to illness (4.2 % of the total annual working hours)	80 h
-- non-productive hours due to leave of absence (4.2 % of the total annual working hours)	80 h
Total:	230 h

≙ 12 % of the total annual working hours.

These non-productive hours which amount to 12 % of the total annual working hours, are to be deducted from the administration costs and allotted to tne factory overheads.

- Additional Personnel

The assumed number of working hours amounts to 1,920 hours per year.

The following factors reduce the total annual working time:

-- general non-productive hours (3.7 % of the total annual working time)	70 h
-- non-productive hours due to illness (4.2 % of the total annual working time)	80 h
-- non-productive hours due to leave of absence (4.2 % of the total annual working time)	80 h
Total:	230 h

≙ 12 % of the total annual working hours.

Since the personnel expenses of the additional personnel have already been allotted 100 % to the factory overheads, the non-productive hours will not cause any alteration of the allotment of costs.

Table 40

TOTAL ANNUAL PERSONNEL EXPENSES ALLOTTED TO ADMINISTRATION, PRODUCTION AND OVERHEADS (IN MK)

	First Year			Second Year			Third Year		
	Administration	Production	Overheads	Administration	Production	Overheads	Administration	Production	Overheads
General Manager	15 % 3,750.00		85 % 21,250.00	40 % 10,500.00		60 % 15,750.00	40 % 11,025.00		60 % 16,537.50
Technical Manager			100 % 7,225.00		50 % 5,578.12	50 % 5,578,12		50 % 5,857.03	50 % 5,857.03
Technicians			100 % 3,000.00		81.5 % 12,836.25	18.5 % 2,913.75		81.5 % 13,478.06	18.5 % 3,059.43
Skilled Workers			100 % 3,000.00		81.5 % 12,836.25	18.5 % 2,913.75		81.5 % 13,478.06	18.5 % 3,059.43
Unskilled Workers			100 % 1,562.50		50 % 4,101.57	50 % 4,101.57		50 % 4,306.65	50 % 4,306,65
Accountant's Clerk			100 % 1,000.00	88 % 4,620.00		12 % 630.00	88 % 4,851.00		12 % 661.50
Secretary	10 % 1,000.00		90 % 9,000.00	60 % 6,300.00		40 % 4,200.00	60 % 6,615.00		40 % 4,410.00
Office Clerk			100 % 1,000.00	88 % 4,620.00		12 % 630.00	88 % 4,851.00		12 % 661.50
Messengers			100 % 625.00			100 % 3,281.25			100 % 3,445.32
Storekeeper			100 % 2,000.00			100 % 6,562.50			100 % 6,890.63
Drivers			100 % 2,475.00			100 % 4,331.26			100 % 4,547.82
Watchmen			100 % 9,200.00			100 % 10,500.00			100 % 11,025.00

8.3.4 Summary Annual Personnel Expenses

Table 41

TOTAL ANNUAL PERSONNEL EXPENSES

	First Year	Second Year	Third Year
Administration	4,750.00	26,040.00	27,342.00
Production		35,352.17	37,119.80
Overheads	61,337.50	61,392.22	64,461.81
Total annual personnel expenses:	66,087.50	122,784.39	128,923.61
Monthly average of personnel expenses:	5,507.30	10,232.03	10,743.64

9. INSTITUTIONAL, FISCAL AND LEGAL MATTERS

9.1 Partners

In case the project is realized, the following partners will be interested in the establishment of the joint venture:

- Superfreeze Ltd., Blantyre,
  Republic of Malawi

  The local sponsor Superfreeze Ltd. is located in Blantyre.

  The sponsor already holds a manufacturing license.

  The main business is concerned with maintenance, repair and installation work especially in the field of refrigerators and other electrical appliances.

  Superfreeze Ltd.'s employees are technicians, metal sheet workers and spray painters with a certain technical skill.

  The sponsor also has showrooms of its own in Blantyre and Lilongwe and is presently selling imported refrigerators and freezers. It can be stated that the project fits in with the existing operations.

- Liebherr-Hausgeraete, Ochsenhausen, Federal Republic of Germany

  Liebherr-Hausgeraete is a member company of the Liebherr group of companies to which 25 other companies belong in Germany, Switzerland, France, Ireland, United Kingdom, United States of America, Austria, Canada and Brazil. The main activities are the production of construction machinery, machinery and plant construction, aviation, materials and cargo-handling. Within the group, Liebherr-Hausgeraete is specialized in the manufacture of refrigerators and frezers. With about 1,000 employees and a production of more than 600,000 appliances per year, the company is one of the major producers in Europe.

  Liebherr has a vast experience in the implementation of refrigerator manufacturing plants, also in developing countries. In Mauritius for instance they are engaged in a successful joint venture with a Mauritian company. The capacity of the plant there is approx. 3,000 units p. a.

- Deutsche Finanzierungsgesellschaft fuer Beteiligungen in Entwicklungsländern GmbH (DEG), Cologne, Federal Republic of Germany

  DEG prefers joint-venture investments in the form of co-operation between German companies and companies in developing countries. It is investing by way of loans and shareholding in such projects that have development value and are operated on a commercial basis.

Since 1986, these two partners have been involved in promoting the idea to set up a refrigerator manufacturing plant in Malawi.

Regarding the overall financing of the project in accordance with the Consultant's findings (March '88), further potential partners have to be involved in the project:

- Investment and Development Bank of Malawi Ltd. (Indebank), Blantyre, Republic of Malawi

  Indebank is a commercial organization which, amongst its development objectives, considers participation in limited liability companies investing by way of local or foreign currency loans and/or shareholding in projects which have development value and are operated on a commercial basis.

  One of its shareholders is Deutsche Finanzierungsgesellschaft für Beteiligungen in Entwicklungsländern (DEG).

- Malawi Development Corporation (MDC), Blantyre, Republic of Malawi

  MDC is a statutory body wholly owned by the Malawi Government.

  MDC's objectives are to develop the economy of the country.

  MDC might participate with equity and/or loans in the financing of the project.

It is also recommendable to win the following two companies as partners in the new joint venture in order to secure a large sales-potential for bottle-coolers as well as to integrate a small, but efficient enterprise which already has some experience in the local manufacture of bottle-coolers.

- Southern Bottlers, Limited, Blantyre, Republic of Malawi

  Southern Bottlers, Ltd. is the leading company for the production of beer and soft drinks in Malawi.

  Approximately 8,000 distribituion units all over the country are at its disposal. It can be assumed that 2,500 to 3,000 of these distribution units have to be equipped with bottle-coolers over the next 10 years.

  This company has a vital interest to collaborate with a manufacturer of bottle-coolers.

- Webu Company, Blantyre
  Metal Fabricators and Manufacturers of Fridges
  Blantyre, Republic of Malawi

  In close collaboration with Southern Bottlers, Webu Company (small-scale enterprise) is manufacturing at present about 6 to 8 bottle-coolers per month.

  From the technical point of view this company does - with certain restrictions, such as lack of space, lack of raw materials etc. - a good job. An integration with this firm and its technical skill could be regarded as an asset for the new partnership.

In addition to the potential partners listed in this study, the team discovered in the course of their investigations into, and discussions with, industrial companies in Malawi that yet another local firm has a vital interest in the co-operation with a German technical partner.

It is the Brown & Clapperton Group, Blantyre/ Lilongwe.

9.2 Establishment of a
Joint Venture Company

The aim of the company is the manufacture of refrigerators/freezers, bottle-coolers and other electrical appliances in the Republic of Malawi.

The name of the new company is yet to be determined.

It shall be registered in Malawi and will operate as a private limited company.

In accordance with the rules and regulations laid down in the Companies Act, a 50 % Malawian ownership is required.

The Consultant proposes the following possible partition of shares:

- Superfreeze Ltd. 20 %
- Liebherr 20 %
- DEG 20 %
- Indebank/MOC 20 %
- Southern Bottlers/Webu 20 %

This partition of shares is applied in the financial evaluation of the project.

These matters, however, remain subject to discussions and decisions.

The new company should be run by its own management responsible to the shareholders.

Those are the main steps of procedure of industrial registration and incorporation:

(a) A certified copy of the instrument constituting or defining the constitution of the entity (Registrar of Companies)

(b) Details of the corporate name and the nature of the entity business.

(c) Details of the local directors and chairmen. A local board is required. The number of local directors should not exceed 9, and ministerial consent is required to reduce the size of the local board.

(d) Principal approval of location (site) by the Ministry of Trade, Industry & Tourism.

(e) Preparation of a memorandum of association and articles of association (to be filed as public information with the Registrar of Companies).

(f) Exchange Control approval is administered by the Reserve Bank of Malawi under authority delegated by the Minister of Finance. *

* According to the Deputy General Manager (Operations) of the Reserve Bank of Malawi (on 22/3/1988) and the Deputy Secretary of the Ministry of Finance (on 23/3/1988):

- There are no restrictions on inward flow of capital. Only residents require an Exchange Control approval for taking up loans from abroad, which is normally granted.

- Outwards transfer of capital by non-residents is permitted when they satisfy the Exchange Control that the original investment was made with funds brought into the country.

- Dividends and profits due to non-resident shareholders are transferred abroad without restriction, provided local taxes have been paid and no recourse is being made to local borrowing (approval of the Exchange Control authorities is required).

- Contractual interest on loans received from foreign sources are remittable.

- The allocation of foreign exchange to by raw materials, components and parts for the manufacturing of refrigerators/freezers and bottle-coolers will be granted by the Reserve Bank of Malawi according to the normal application procedure (proforma to commercial bank, application to Reserve Bank, foreign currency allocation by Reserve Bank).

The whole procedure usually takes a short time, but it is advisable to use the services of a local corporate lawyer and/or public accountant.

9.3 Industrial Incentives

In order to encourage the development of industry in Malawi, the Government offers a number of incentives which have to be applied for:

- Duty

  Reduced rate for import duties for equipment and machinery as well as raw materials, components and parts.
  Application has to be issued to Controller of Customs. Approval by Committee (Customs, Treasury and Ministry of Industry)

- Tariff

  In the case of locally manufactured products facing unfair competition with imported products, the local manufacturer may apply for tariff protection.

- Capital allowances and other special deductions to be approved by the Commissioner of Taxes, such as

  -- Depreciation Allowances
  Initial allowances on capital expenditures are granted (10 % on industrial buildings, 20 % on plant and equipment).
  Annual allowances calculated on the basis of a reducing written down value (5 % on industrial building, 20 % on plant and equipment)

  -- Investment Allowance
  10 % to manufacturer for new plant and equipment

  -- Initial Expenditures
  Expenditure incurred during a period of 18 months prior to the start of operations is deductible.

9.4 Taxation, Bonus, Fees, Allowances and Insurance

9.4.1 Income Tax

According to the Department of Taxes, income tax for individuals is charged at the rates shown below:

Table 42

INCOME TAX RATES

Annual	Income	Rate of Tax
First	MK 1,200	3 %
Next	MK 1,200	7 %
Next	MK 1,800	15 %
Next	MK 1,800	20 %
Next	MK 2,400	25 %
Next	MK 2,400	30 %
Next	MK 2,400	35 %
Next	MK 2,400	40 %
Next	MK 8,400	45 %
In Excess of	MK 24,000	50 %

It is the exmployer's responsibility to collect the tax and affix graduated tax stamps on tax cards.

9.4.2 Taxation of Companies

Companies incorporated in Malawi:

The basic tax rate is 50 %. An additional tax of up to 5 % is payable on dividends remitted to external shareholders residing in countries where the gross rate of tax on taxable income involved would exceed 50 %; the company is liable for this tax and not the shareholders. There are provisions for the remission of the additional 5 % e. g. where it can be shown that a dividend paid to a shareholder resident outside Malawi is not liable to tax in his country of residence.

Companies not incorporated in Malawi
and branches of foreign companies:

The basic rate is 50 %. An additional amount of up to 5 % of the taxable income is payable if the tax payable on such taxable income would be in excess of 50 % in the country where the company is incorporated. Here again there are provisions for the remission of the additional 5 %, e. g. where it can be shown that the income derived in Malawi by a branch of a foreign company is not liable for tax in the foreign country where the company is incorporated.

Special deductions:

There are special deductions from taxable income which can be claimed by farmers and industrialists, including capital allowances, some of which are outlined under item 9.3.

9.4.3 Surtax

According to the Department of Customs and Excise a 35-% surtax on the sales price of the finished product is applicable.

9.4.4 Allowance, Bonus

Employees in Malawi receive

(a) 2 weeks per year allowance,
(b) 2 weeks salary as December bonus,
(c) medical welfare 5 % of their salary.

9.4.5 Registration and Legal Fees

For the registration of a company MK 1,000.00 has to be paid.

The stamp duties are MK 7.50/MK 1,000.00 capital.

9.4.6 Insurance

According to the local insurance company, the insurance of this manufacturing company will amount to max. MK 30,000.00 p. a. including fire insurance, vehicle insurance, workmen's compensation insurance and liability insurance.

10. FINANCIAL EVALUATION

10.1 General Approach

For the financial and economic evaluation of the project, the UNIDO Computer Model for Feasibility Analysis and Reporting (COMFAR) has been applied. COMFAR is an interactive, computerized, cashflow-oriented simulation model and can be regarded as a very flexible tool for the evaluation of industrial projects.

10.2 The Data

Most of the data utilized in this study were obtained through personal contacts and literature searches conducted in Malawi in March 1988.

The standardized input data entry form is the basis of evaluation and data inputs for use of the COMFAR computer programme package.

Hence it is considered necessary to briefly explain on the following pages the data which have been used as inputs for the programme.

Initial Fixed Investment
in German Marks

Description	Basis	Local	Foreign
1. Land	In the new Industrial Area Blantyre land has already been purchased which has all the advantages of an industrial plot	34,500.-	
2. Site preparation	Due to the fact that the site is flat ground, nothing more than some levelling has to be taken into consideration for site preparation and development	3,500.-	
3. Structures and civil engineering (a)	All construction costs including office building	310,600.-	
3. Structures and civil engineering (b)	1. All construction costs for fencing and drains as well as the installations for sanitary and electrical equipment in the office building and foreman's office	92,770.-	

Description	Basis	Local	Foreign
	2. It is recommendable to have a local civil consultant for engineering and supervision of the construction works	24,000-	
	3. In the scope of supply of the foreign partner all materials for electrical and water installation have been incorporated.		146,000.-
4. Transport	Two vehicles have to be provided: 1 passenger car for the management 1 pickup for the factory and after-sales service		80,000.-
5. Technology, start-up	1. For supervision of erection and commissioning of the plant		70,000.-
	2. The German technical partner demands a fee for his know-how		300,000.-

Description	Basis	Local	Foreign
6. Contingencies	1. For structure and civil engineering 10 % contingencies have to be considered	41,500.-	
	2. For plant machinery and equipment as well as auxiliary and service facilities 10 % contingencies have to be considered		99,600.--
7. Plant Machinery and Equipment	The criteria to select this equipment are the vast experiences of the German technical partner in the field of manufacturing refrigerators, and his technical know-how.		930,800.-
8. Auxiliary and service facilities	For internal transport in the plant a lift-truck (manual) is necessary. A compressed air system for the machinery and equipment has to be installed. Repair equipment also has to be provided.		65,800.-

Description	Basis	Local	Foreign
9. Pre-Production Expenditures	1. Feasibility study		65,000.-
	2. Training It has been taken into consideration that the technical manager will have a one-month training in the premises of the German technical partner		44,000.-
	3. For establishment costs such as personnel, insurances, legal expenses, utilities, etc.	114,080.-	

Standard Production Costs
in German Marks

Description	Basis	Local	Foreign
Raw Material	1. 850 CKD-kits 9 cft fridge/ freezer combinations; 600 CKD-kits 12 cft fridge/ freezer combinations; 300 CKD-kits 12 cft bottle-coolers: freight cost for CKD-kits		1,022,750.-
	2. Import duties for CKD-kits (20 % of landed costs)	204,550.-	
Utilities	1. Packaging material for finished products		20,400.-
	2. Cost for process water	963.-	

Description	Basis	Local	Foreign
Energy	Cost of energy required for the production process	3,560.-	
Labour direct	Costs of maintenance are based on the following percentage: Building 1.2 % Equipment 1 %	6,210.-	11,426.-
Factory overheads	The factory overheads include the following items: Indirect labour cost Cost of utilities Insurance Expendable items	54,650.-	
Administration labour cost	Administration personnel	17,971.-	
Administration non-labour cost	Electric power, telecommunication	1,997.-	

Production Cost
in German Marks

Description	Basis	Local	Foreign
Spare parts	From 3rd production year onwards, 2 % of the purchase price of machinery and equipment has been calculated. (For the first 2 years spare parts are included in the supply of machinery and equipment.)		19,932.-
Marketing non-labour cost		5,000.-	

Funds
in German Marks

Description	Basis	Local	Foreign
Loans	Due to the construction period of 12 months only, loans have to be provided at once. Consolidated initial fixed investment F./L = DM 2,447,550.-. Supplier's credit amounts to DM 635,000.-.		
	Loan A: 8 %, 1 year grace, 6 years		591,130.-
	Loan B: 13.5 %, 1 year grace, 6 years		591,130.-
	Loan C (supplier's credit): 8 %, 1 year grace, 1 year		635,000.-

Description	Basis	Local	Foreign
Equity (ordinary)	Foreign A		250,000.-
	B		250,000.-
	Local A	250,000.-	
	B	250,000.-	
	C	250,000.-	

Working Capital
(days)

Description	Basis	Local	Foreign
	The minimum coverage of days has been determined for current assets and liabilities.		
Accounts receivable		30	
Cash in hand		30	
Raw materials			90
Utilities		30	
Energy		30	
Spare parts			180
Work in progress		20	
Finished products		15	
Accounts payable		30	90

Production Programme and Sales
in German Marks

Description	Basis	Local	Foreign
Total production price	Product A: DM 1,500.- x 850 units/year; Product B: DM 1,800.- x 600 units/year; Product C: DM 1,300.- x 300 units/year	2,745,000.-	
Total sales tax	35 % of ex-factory price	711.550.-	

10.3 Comfar-Computation

The computation of all data and figures has been done in German Marks (DM).

The exchange rate to the Malawi Kwacha (MK) in April 1988 was

DM 1.00 equal to MK 1.449.

Refrigerator Manufacturing Plant Malawi
24.05.1988
Feasibility Study

1 year(s) of construction. 15 years of production
currency conversion rates:
foreign currency 1 unit = 1.0000 units accounting currency
local currency 1 unit = 1.0000 units accounting currency
accounting currency: 1000 German Marks

Total initial investment during construction phase

fixed assets:	2447.55	74.630 % foreign
current assets:	0.00	0.000 % foreign
total assets:	2447.55	74.630 % foreign

Source of funds during construction phase

equity & grants:	1250.00	40.000 % foreign
foreign loans :	1817.25	
local loans :	0.00	
total funds :	3067.25	75.548 % foreign

Cashflow from operations

Year:	1	2	3
operating costs:	1373.90	1404.57	1456.73
depreciation :	156.54	156.54	156.54
interest :	177.89	111.18	97.47
production costs	1708.33	1672.29	1796.73
thereof foreign	79.93 %	78.92 %	78.75 %
total sales :	2745.00	2582.25	3025.03
gross income :	-45.81	462.71	535.02
net income :	-45.81	231.36	267.51
cash balance :	-816.16	308.34	312.53
net cashflow :	147.44	486.45	490.43

Net Present Value at: 15.00 % = 140.17
Internal Rate of Return: 16.19 %
Return on equity1: 17.77 %
Return on equity2: 11.73 %

Index of Schedules produced by COMFAR

Total initial investment	Cashflow Tables
Total investment during production	Projected Balance
Total production costs	Net income statement
Working Capital requirements	Source of finance

Total Initial Investment in 1000 German Marks

Year	1999
Fixed investment costs	
Land, site preparation, development	76.00
Buildings and civil works	573.37
Auxiliary and service facilities	65.30
Incorporated fixed assets	491.50
Plant machinery and equipment	1030.40
Total fixed investment costs	2199.07
Pre-production capital expenditures	248.48
Net working capital	0.00
Total initial investment costs	2447.55
Of it foreign, in %	74.00

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Total Current Investment in 1000 German Marks

Year	1990	1991	1992	1993	1994	1995
Fixed investment costs						
Land, site preparation, development	0.00	0.00	0.00	0.00	0.00	0.00
Buildings and civil works	0.00	0.00	0.00	0.00	0.00	0.00
Auxiliary and service facilities	0.00	0.00	0.00	0.00	0.00	0.00
Incorporated fixed assets	0.00	0.00	0.00	100.00	0.00	0.00
Plant, machinery and equipment	0.00	0.00	0.00	0.00	0.00	0.00
Total fixed investment costs	0.00	0.00	0.00	100.00	0.00	0.00
Preproduction capitals expenditures,	0.00	0.00	0.00	0.00	0.00	0.00
Working capital	511.99	12.62	27.08	13.66	14.07	14.49
Total current investment costs	511.99	12.62	27.08	113.66	14.07	14.49
Of it foreign, %	70.48	57.13	79.21	94.24	55.49	[illegible]

Refrigerator Manufacturing Plant Malawi --- 24.05.1988

---------- COMFAR 2.1 - Project Consultancy Gmbh, Mainhausen.FRG -----

Total Current Investment in 1000 German Marks

Year	1996	1997	1998	1999	2000	2001
Fixed investment costs						
Land, site preparation, development	0.00	0.00	0.00	0.00	0.00	0.00
Buildings and civil works	0.00	0.00	0.00	0.00	0.00	0.00
Auxiliary and service facilities	0.00	0.00	0.00	0.00	0.00	0.00
Incorporated fixed assets	0.00	0.00	0.00	0.00	0.00	0.00
Plant, machinery and equipment	0.00	0.00	0.00	0.00	0.00	0.00
Total fixed investment costs	0.00	0.00	0.00	0.00	0.00	0.00
Preproduction capitals expenditures,	0.00	0.00	0.00	0.00	0.00	0.00
Working capital	14.92	15.37	15.84	16.32	-637.78	0.97
Total current investment costs	14.92	15.37	15.84	16.32	-637.78	0.97
Of it foreign, %	55.41	54.36	54.31	53.75	0.00	0.00

Refrigerator Manufacturing Plant Malawi --- 24.05.1988

Total Current Investment in 1000 German Marks

Year	2002	2003	2004
Fixed investment costs			
Land, site preparation, development	0.00	0.00	0.00
Buildings and civil works	0.00	0.00	0.00
Auxiliary and service facilities	0.00	0.00	0.00
Incorporated fixed assets	0.00	0.00	0.00
Plant, machinery and equipment	0.00	0.00	0.00
Total fixed investment costs	0.00	0.00	0.00
Preproduction capital expenditures	0.00	0.00	0.00
Working capital	0.79	1.02	1.08
Total current investment costs	0.79	1.02	1.08
Of it foreign, %	0.00	0.00	0.00

Total Production Costs in 1000 German Marks

Year	1990	1991	1992	1993	1994	1995
% of nom. capacity (single product)	0.00	0.00	0.00	0.00	0.00	[illegible]
Raw material I	[illegible]	1251.85	1276.88	1302.42	1328.47	1355.04
Other raw materials	0.00	0.00	0.00	0.00	0.00	0.00
Utilities	21.36	21.82	22.29	22.76	23.25	[illegible]
Energy	3.56	3.74	3.92	4.12	4.33	4.54
Labour, direct	24.39	25.61	26.89	28.24	29.65	[illegible]
Repair, maintenance	17.84	18.13	18.74	19.[illegible]	19.92	[illegible]
Spares	[illegible]	[illegible]	[illegible]	21.[illegible]	21.54	[illegible]
Factory overheads	54.69	57.42	[illegible]	[illegible]	66.47	[illegible]
Factory costs	1348.94	1378.61	1429.72	1461.23	1492.60	1526.73
Administrative overheads	19.95	20.95	22.01	23.11	24.27	25.48
Indir. costs, sales and distribution	5.00	5.00	5.00	5.00	5.00	5.00
Direct costs, sales and distribution	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation	156.54	156.54	156.54	156.54	176.54	[illegible]
Financial costs	177.39	111.18	93.47	73.75	51.79	27.[illegible]
Total production costs	1708.33	1672.29	1706.73	1719.63	1751.22	[illegible]
Costs per unit (single product)	0.00	0.00	0.00	0.00	0.00	[illegible]
Of it foreign, %	79.93	78.92	78.76	79.32	78.10	[illegible]
Of it variable, %	76.45	79.74	79.73	80.35	81.03	82.19
Total labour	42.36	44.46	46.70	49.04	51.49	54.06

Total Production Costs in 1000 German Marks

Year	1996	1997	1998	1999	2000	2001
% of nom. capacity (single product)	0.00	0.00	0.00	0.00	0.00	[illegible]
Raw material 1	1382.14	1409.73	1437.93	1466.74	0.00	0.00
Other raw materials	0.00	0.00	0.00	0.00	0.00	0.00
Utilities	24.26	24.79	25.32	25.87	-0.00	-0.00
Energy	4.77	5.01	5.26	5.52	0.00	0.00
Labour, direct	32.59	34.22	36.04	37.84	0.00	0.00
Repair, maintenance	21.19	21.87	22.57	23.29	[illegible]	[illegible]
Spares	22.41	22.86	23.32	23.79	[illegible]	[illegible]
Factory overheads	72.29	76.95	80.80	84.84	39.05	41.00
Factory costs	1560.73	1595.57	1631.23	1667.88	99.19	104.15
Administrative overheads	26.75	28.09	29.49	30.97	3.25	3.41
Indir. costs, sales and distribution	5.00	5.00	5.00	5.00	0.00	0.00
Direct costs, sales and distribution	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation	160.54	160.54	160.54	140.54	70.92	70.92
Financial costs	0.00	0.00	0.00	0.00	0.00	0.00
Total production costs	1753.04	1789.20	1826.31	1844.39	173.36	178.48
Costs per unit (single product)	0.00	0.00	0.00	0.00	0.00	0.00
Of it foreign, %	76.34	76.34	76.47	75.96	5.47	5.27
Of it variable, %	84.47	84.52	84.57	85.52	[illegible]	[illegible]
Total labour	56.77	59.60	62.55	65.71	[illegible]	[illegible]

Total Production Costs in 1000 German Marks

Year	2002	2003	2004
% of nom. capacity (single product)	0.00	0.00	0.00
Raw material 1	0.00	0.00	0.00
Other raw materials	0.00	0.00	0.00
Utilities	-0.00	-0.00	-0.00
Energy	0.00	0.00	0.00
Labour, direct	0.00	0.00	0.00
Repair, maintenance	11.15	11.71	12.28
Spares	0.00	0.00	0.00
Factory overheads	98.21	103.12	108.29
Factory costs	109.36	114.83	120.57
Administrative overheads	3.59	3.76	3.95
Indir. costs, sales and distribution	0.00	0.00	0.00
Direct costs, sales and distribution	0.00	0.00	0.00
Depreciation	30.92	30.92	30.92
Financial costs	0.00	0.00	0.00
Total production costs	143.86	149.51	155.45
Costs per unit (single product)	0.00	0.00	0.00
CF in foreign, %	5.07	4.88	4.70
CF in variable, %	0.00	0.00	0.00
Total labour	0.00	0.00	0.00

Net Working Capital in 1990 German Marks

Year	mdc	coto	1990	1991	1992	1993	1994
Coverage	mdc	coto					
Current assets &							
Accounts receivable	30	12.0	173.80	179.32	186.78	192.77	198.99
Inventory and materials	39	4.0	308.61	314.73	321.08	327.50	334.05
Energy	30	12.0	0.30	0.31	0.33	0.34	0.36
Spares	180	2.0	0.00	0.00	10.35	10.56	10.77
Work in progress	20	18.0	74.94	76.57	79.43	81.13	82.98
Finished products	15	24.0	57.04	58.22	60.49	61.85	63.25
Cash in hand	30	12.0	9.72	10.18	12.39	12.90	13.49
Total current assets			624.40	639.50	670.84	687.13	703.89
Current liabilities and							
Accounts payable	30	12.0	112.41	114.89	119.14	121.77	124.47
Net working capital			511.99	524.61	551.70	565.36	579.42
Increase in working capital			511.99	12.62	27.08	13.66	14.07
Net working capital, local			151.12	156.53	162.16	168.33	174.13
Net working capital, foreign			360.87	368.09	389.54	397.03	405.28

Notes: mdc = minimum days of coverage ; coto = coefficient of turnover .

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Net Working Capital in 1990 German Marks

Year	mdc	coto	1995	1996	1997	1998	1999
Coverage	mdc	coto					
Current assets &							
Accounts receivable	30	12.0	205.46	212.18	219.17	226.44	233.99
Inventory and materials	39	4.0	340.74	347.56	354.51	361.60	368.84
Energy	30	12.0	0.38	0.40	0.42	0.44	0.46
Spares	180	2.0	10.99	11.21	11.43	11.66	11.89
Work in progress	20	18.0	84.52	86.71	88.64	90.63	92.66
Finished products	15	24.0	64.68	66.15	67.65	69.20	70.79
Cash in hand	30	12.0	14.08	14.69	15.34	16.02	16.73
Total current assets			721.14	738.89	757.17	775.98	795.35
Current liabilities and							
Accounts payable	30	12.0	127.23	130.06	132.96	135.94	138.99
Net working capital			593.91	608.83	624.20	640.04	656.36
Increase in working capital			14.49	14.92	15.37	15.84	16.32
Net working capital, local			180.53	187.18	194.12	201.36	208.91
Net working capital, foreign			413.38	421.65	430.08	438.68	447.46

Notes: mdc = minimum days of coverage ; coto = coefficient of turnover .

Net Working Capital in 1000 German Marks

Year	mdc	coto	2000	2001	2002	2003	2004
Coverage	mdc	coto					
Current assets &							
Accounts receivable	30	12.0	8.54	8.96	9.41	9.88	10.38
Inventory and materials	90	4.0	-0.00	-0.00	-0.00	-0.00	-0.00
Energy	30	12.0	0.00	0.00	0.00	0.00	0.00
Spares	360	1.0	0.00	0.00	0.00	0.00	0.00
Work in progress	20	18.0	5.51	5.79	6.08	6.38	6.70
Finished products	15	24.0	4.27	4.48	4.71	4.94	5.19
Cash in hand	30	12.0	8.54	8.96	9.41	9.88	10.38
Total current assets			26.85	28.20	29.61	31.09	32.64
Current liabilities and							
Accounts payable	30	12.0	8.27	8.68	9.11	9.57	10.05
Net working capital			18.59	19.52	20.49	21.52	22.59
Increase in working capital			-507.79	0.93	0.98	1.02	1.08
Net working capital, local			18.59	19.52	20.49	21.52	22.59
Net working capital, foreign			0.00	0.00	0.00	0.00	0.00

Note: mdc = minimum days of coverage ; coto = coefficient of turnover .

Source of Finance, construction in 1000 German Marks

Year	1999
Equity, primary ..	1050.00
Equity, preference.	0.00
Subsidies, grants .	0.00
Loan A, foreign .	591.00
Loan B, foreign...	591.00
Loan C, foreign .	675.00
Loan A, local....	0.00
Loan B, local....	0.00
Loan C, local....	0.00
Total loan	1317.25
Current liabilities	0.00
Bank overdraft	0.00
Total funds	2367.25

Source of Finance, production in 1000 German Marks

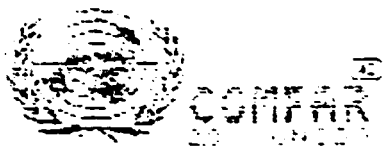
Year	1990	1991	1992	1993	1994	1995	1996
Equity, ordinary ..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity, preference.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subsidies, grants .	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan A, Foreign .	-80.58	-87.07	-93.99	-101.51	-109.63	-118.40	0.00
Loan B, Foreign..	-70.13	-75.74	-81.80	-102.55	-116.29	-122.10	0.00
Loan C, Foreign .	-175.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan A, local....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan B, local....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan C, local....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total loan	-325.71	-166.81	-154.04	-204.05	-226.01	-259.50	0.00
Current liabilities	110.41	2.47	4.23	2.67	2.70	2.76	2.82
Bank overdraft	196.46	-196.46	0.00	0.00	0.00	0.00	0.00
Total funds	-476.24	-360.80	-150.05	-201.42	-223.31	-247.74	2.82

Source of Finance, production in 1000 German Marks

Year	1997	1998	1999	2000	2001	2002	2003
Equity, ordinary ..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Equity, preference.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subsidies, grants .	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan A, Foreign .	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan B, Foreign..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan C, Foreign .	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan A, local....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan B, local....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loan C, local....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total loan	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Current liabilities	2.90	2.98	3.05	-150.72	3.41	3.47	3.54
Bank overdraft	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total funds	2.90	2.98	3.05	-150.72	3.41	3.47	3.54

Source of Finance, production yr 1000 German Marks

Year	2004
Equity, ordinary ..	0.00
Equity, preference.	0.00
Subsidies, grants .	0.00
Loan A, foreign .	0.00
Loan B, foreign..	0.00
Loan C, foreign .	0.00
Loan A, local....	0.00
Loan B, local....	0.00
Loan C, local....	0.00
Total loan	0.00
Current liabilities	0.45
Bank overdraft	0.00
Total funds	0.45



Cashflow Tables, construction in 1000 German Marks

Year	1999
Total cash inflow . .	2987.25
Financial resources .	2987.25
Sales, net of tax . .	0.00
Total cash outflow . .	2467.55
Total assets	2422.15
Operating costs . . .	0.00
Cost of finance . . .	25.40
Repayment	0.00
Corporate tax . . .	0.00
Dividends paid . . .	0.00
Surplus (deficit) .	519.70
Cumulated cash balance	519.70
Inflow, local	750.00
Outflow, local	620.95
Surplus (deficit) .	129.05
Inflow, foreign . . .	2237.25
Outflow, foreign . . .	1525.60
Surplus (deficit) .	490.65
Net cashflow	-2422.15
Cumulated net cashflow	-2422.15

Cashflow tables, production in 1000 German Marks

Year	1990	1991	1992	1993	1994	1995
Total cash inflow	2145.75	2137.47	2246.01	2355.47	2474.22	2597.87
Financial resources	112.41	2.47	4.26	2.63	2.70	2.76
Sales, net of tax	2033.33	2135.00	2241.75	2352.84	2471.52	2595.11
Total cash outflow	2961.91	1928.83	2033.39	2199.57	2177.62	2277.31
Total assets	523.40	15.39	21.34	116.29	16.76	17.25
Operating costs	1373.90	1404.57	1452.73	1489.79	1522.89	1557.25
Cost of finance	177.87	111.15	93.47	73.75	51.79	27.31
Repayment	785.71	156.50	154.39	204.95	226.02	250.50
Corporate tax	0.00	231.26	257.51	317.08	360.15	425.00
Dividends paid	0.00	0.00	0.00	0.00	0.00	0.00
Surplus (deficit)	-816.16	208.64	212.62	155.90	296.61	320.56
Cumulated cash balance	-195.46	12.19	224.81	380.71	677.32	997.87
Inflow, local	2057.36	2135.72	2240.49	2354.61	2472.52	2595.72
Outflow, local	494.97	566.38	610.72	672.86	726.71	802.95
Surplus (deficit)	1562.39	1569.34	1629.77	1681.74	1745.41	1792.78
Inflow, foreign	87.39	1.75	5.52	1.86	1.70	1.74
Outflow, foreign	2366.74	1362.45	1420.66	1527.71	1450.70	1474.16
Surplus (deficit)	-2279.05	-1360.69	-1417.15	-1525.84	-1448.30	-1472.22
Net cashflow	147.41	486.45	490.43	433.71	574.42	598.36
Cumulated net cashflow	-2274.71	-1795.26	-1297.83	-864.12	-289.71	308.66

Cashflow tables, production in 1000 German Marks

Year	1996	1997	1998	1999	2000	2001
Total cash inflow	2727.69	2364.01	3007.13	3157.42	0.00	1.41
Financial resources	1.87	1.90	1.95	2.05	0.00	1.41
Sales, net of tax	2724.86	2361.10	3004.15	3154.37	0.00	0.00
Total cash outflow	2196.13	2182.89	2273.51	2378.12	-505.33	106.91
Total assets	17.75	18.27	18.81	19.37	-765.59	1.34
Operating costs	1592.50	1623.66	1665.77	1703.85	102.44	107.57
Cost of finance	0.00	0.00	0.00	0.00	0.00	0.00
Repayment	0.00	0.00	0.00	0.00	130.72	0.00
Corporate tax	485.91	535.95	588.92	654.99	0.00	0.00
Dividends paid	0.00	0.00	0.00	0.00	0.00	0.00
Surplus / deficit	531.57	681.12	733.62	779.29	505.33	-105.50
Cumulated cash balance	1529.46	2310.52	3044.14	3823.34	4358.63	4250.13
Inflow, local	2725.72	2361.99	3005.08	3155.32	0.00	1.41
Outflow, local	975.88	938.21	1003.93	1083.24	-57.88	108.91
Surplus / deficit	1749.83	1423.79	2001.15	2072.08	57.88	-108.50
Inflow, foreign	1.95	2.02	2.06	2.10	0.00	0.00
Outflow, foreign	1220.23	1244.69	1269.58	1294.97	-447.46	0.00
Surplus / deficit	-1218.31	-1242.67	-1267.52	-1292.88	447.46	0.00
Net cashflow	531.57	681.12	733.62	779.29	505.33	-105.50
Cumulated net cashflow	943.19	1621.30	2354.93	3134.12	3669.45	3560.97

Cashflow tables, production in 1000 German Marks

Year	2002	2003	2004
Total cash inflow	0.43	0.46	0.48
Financial resources	0.43	0.46	0.48
Sales, net of tax	0.00	0.00	0.00
Total cash outflow	114.35	120.07	126.08
Total assets	1.41	1.48	1.55
Operating costs	112.94	118.59	124.52
Cost of finance	0.00	0.00	0.00
Repayment	0.00	0.00	0.00
Corporate tax	0.00	0.00	0.00
Dividends paid	0.00	0.00	0.00
Surplus (deficit)	-113.92	-119.62	-125.60
Cumulated cash balance	4136.25	4016.64	3891.04
Inflow, local	0.43	0.46	0.48
Outflow, local	114.35	120.07	126.08
Surplus (deficit)	-113.92	-119.62	-125.60
Inflow, foreign	0.00	0.00	0.00
Outflow, foreign	0.00	0.00	0.00
Surplus (deficit)	0.00	0.00	0.00
Net cashflow	-113.92	-119.62	-125.60
Cumulated net cashflow	3447.04	3327.42	3201.82

Cashflow Discounting:

a) Return on Equity 1:

Net present value	174.11	at	15.00 %
Internal Rate of Return (IRRE1) ..	17.77 %		

b) Return on Equity 2:

Net present value	-335.42	at	15.00 %
Internal Rate of Return (IRRE2) ..	11.73 %		

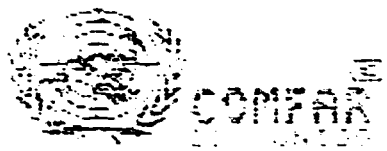
c) Internal Rate of Return on total investment:

Net present value	149.13	at	15.00 %
Internal Rate of Return : IRR) ..	16.19 %		

Equity 1 = Total equity paid : Net income
Equity 2 = Initial equity paid : Net cash return

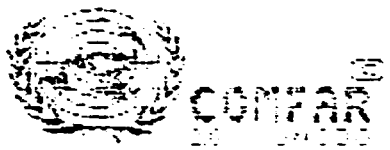
Net Income Statement in 1000 German Marks

Year	1990	1991	1992	1993	1994
Total sales, incl. sales tax	2745.00	2882.25	3026.36	3307.68	3336.56
Less: variable costs, incl. sales tax.	2017.68	2080.79	2146.30	2214.31	2284.74
Variable margin	727.32	801.46	880.07	960.37	1051.82
As % of total sales	26.50	27.81	29.08	30.22	31.52
Non-variable costs, incl. depreciation	595.24	227.57	251.58	155.46	279.52
Operational margin	132.08	573.89	628.48	707.91	772.10
As % of total sales	4.81	19.91	20.77	22.23	23.14
Cost of finance	177.39	111.18	93.47	73.75	51.79
Gross profit	-45.31	462.71	535.02	634.15	720.31
Allowances	0.00	0.00	0.00	0.00	0.00
Taxable profit	-45.31	462.71	535.02	634.15	720.31
Tax	0.00	231.36	267.51	317.08	360.16
Net profit	-45.31	231.36	267.51	317.08	360.16
Dividends paid	0.00	0.00	0.00	0.00	0.00
Undistributed profit	-45.31	231.36	267.51	317.08	360.16
Accumulated undistributed profit	-45.31	185.55	453.06	770.13	1130.29
Gross profit, % of total sales	-1.67	16.05	17.68	19.96	21.59
Net profit, % of total sales	-1.67	8.03	8.84	9.98	10.79
ROE, Net profit, % of equity	-3.56	18.51	21.40	25.37	28.31
ROI, Net profit+interest, % of invest.	4.50	11.62	12.14	12.66	13.23



Net Income Statement in 1000 German Marks

Year	1995	1996	1997	1998	1999
Total sales, incl. sales tax	3503.39	3679.56	3862.49	4055.61	4258.39
Less: variable costs, incl. sales tax	2358.00	2434.61	2513.70	2595.99	2681.55
Variable margin	1145.39	1244.95	1348.79	1459.62	1576.85
As % of total sales	32.69	33.82	34.92	35.99	37.03
Non-variable costs, incl. depreciation	267.78	273.13	278.59	284.17	289.85
Operational margin	877.61	971.82	1071.20	1177.45	1287.00
As % of total sales	25.04	26.42	27.75	29.04	30.24
Cost of finance	27.61	0.00	0.00	0.00	0.00
Gross profit	850.01	971.82	1071.20	1177.45	1287.00
Allowances	0.00	0.00	0.00	0.00	0.00
Taxable profit	850.01	971.82	1071.20	1177.45	1287.00
Tax	425.00	485.91	535.60	588.72	643.50
Net profit	425.00	485.91	535.60	588.72	643.50
Dividends paid	0.00	0.00	0.00	0.00	0.00
Undistributed profit	425.00	485.91	535.60	588.72	643.50
Accumulated undistributed profit	1555.29	2041.20	2577.15	3166.08	3801.97
Gross profit, % of total sales	24.26	26.42	27.75	29.04	30.24
Net profit, % of total sales	12.13	13.21	13.86	14.52	15.12
ROE, Net profit, % of equity	34.00	38.87	42.85	47.11	51.48
ROI, Net profit+interest, % of invest.	14.62	15.52	17.07	18.62	20.31



Net Income Statement in 1000 German Marks

Year	2000	2001	2002	2003	2004
Total sales, incl. sales tax	0.00	0.00	0.00	0.00	0.00
Less: variable costs, incl. sales tax.	0.00	0.00	0.00	0.00	0.00
Variable margin	0.00	0.00	0.00	0.00	0.00
As % of total sales	0.00	0.00	0.00	0.00	0.00
Non-variable costs, incl. depreciation	133.36	138.43	143.66	149.51	155.45
Operational margin	-133.36	-138.43	-143.66	-149.51	-155.45
As % of total sales	0.00	0.00	0.00	0.00	0.00
Cost of finance	0.00	0.00	0.00	0.00	0.00
Gross profit	-133.36	-138.43	-143.66	-149.51	-155.45
Allowances	0.00	0.00	0.00	0.00	0.00
Taxable profit	-133.36	-138.43	-143.66	-149.51	-155.45
Tax	0.00	0.00	0.00	0.00	0.00
Net profit	-133.36	-138.43	-143.66	-149.51	-155.45
Dividends paid	0.00	0.00	0.00	0.00	0.00
Undistributed profit	-133.36	-138.43	-143.66	-149.51	-155.45
Accumulated undistributed profit	3687.70	3549.22	3405.56	3255.85	3100.40
Gross profit, % of total sales	0.00	0.00	0.00	0.00	0.00
Net profit, % of total sales	0.00	0.00	0.00	0.00	0.00
ROE. Net profit % of equity	-10.27	-11.06	-11.81	-11.76	-12.44
ROI. Net profit-interest, % of invest.	-5.25	-5.45	-5.66	-5.89	-6.11

Projected Balance Sheets, construction in 1000 German Marks

Year	1999
Total assets	3067.25
Fixed assets, net of depreciation	0.00
Construction in progress	2447.55
Current assets	0.00
Cash, bank	0.00
Cash surplus, finance available	619.70
Loss carried forward	0.00
Loss	0.00
Total liabilities	3067.25
Equity capital	1250.00
Reserves, retained profit	0.00
Profit	0.00
Long and medium term debt	1817.25
Current liabilities	0.00
Bank overdraft, finance required	0.00
Total debt	1817.25
Equity, % of liabilities	40.75

Projected Balance Sheets, Production in 1000 German Marks

Year	1990	1991	1992	1993	1994	1995
Total assets	2590.41	2461.15	2502.77	2618.42	2755.26	2922.52
Fixed assets, net of depreciation	1920.20	1733.86	1567.12	1450.59	1274.05	1212.51
Construction in progress	0.00	0.00	0.00	0.00	0.00	0.00
Current assets	614.65	629.02	658.45	674.21	690.40	[illegible]
Cash, bank	9.72	10.18	12.79	12.92	13.49	[illegible]
Cash surplus, finance available	0.00	12.15	224.80	380.71	577.02	[illegible]
Loss carried forward	0.00	45.81	0.00	0.00	0.00	0.00
Loss	45.81	0.00	0.00	0.00	0.00	0.00
Total liabilities	2590.41	2461.15	2502.77	2618.42	2755.26	2922.52
Equity capital	1250.00	1250.00	1250.00	1250.00	1250.00	1250.00
Reserves, retained profit	0.00	0.00	185.55	453.05	770.13	1130.29
Profit	0.00	231.36	267.51	317.08	360.16	425.09
Long and medium term debt	1031.54	864.91	680.57	476.52	251.50	0.00
Current liabilities	112.41	114.85	119.14	121.77	124.47	127.22
Bank overdraft, finance required.	196.46	0.00	0.00	0.00	0.00	0.00
Total debt	1340.41	979.79	799.71	598.29	374.97	127.22
Equity, % of liabilities	48.25	50.79	49.94	47.73	45.37	42.27

Projected Balance Sheets, Production in 1000 German Marks

Year	1996	1997	1998	1999	2000	2001
Total assets	3421.25	3960.12	4552.02	5210.06	5079.33	4946.33
Fixed assets, net of depreciation	1050.97	892.44	771.90	591.36	550.44	529.52
Construction in progress	0.00	0.00	0.00	0.00	0.00	0.00
Current assets	724.20	741.82	759.96	778.63	18.32	19.22
Cash, bank	14.59	15.24	15.92	16.77	3.54	3.96
Cash surplus, finance available	1629.40	2310.52	3044.14	3823.74	4333.65	4250.13
Loss carried forward	0.00	0.00	0.00	0.00	0.00	0.00
Loss	0.00	0.00	0.00	0.00	173.36	133.43
Total liabilities	3421.25	3960.12	4552.02	5210.06	5079.33	4946.75
Equity capital	1250.00	1250.00	1250.00	1250.00	1250.00	1250.00
Reserves, retained profit	1555.29	2041.20	2577.15	3166.09	3821.07	3687.72
Profit	485.91	535.95	588.92	654.99	0.00	0.00
Long and medium term debt	0.00	0.00	0.00	0.00	0.00	0.00
Current liabilities	130.06	132.96	135.94	138.99	8.27	8.58
Bank overdraft, finance required.	0.00	0.00	0.00	0.00	0.00	0.00
Total debt	130.06	132.96	135.94	138.99	8.27	8.58
Equity, % of liabilities	36.54	31.56	27.46	23.99	24.61	25.27

Projected Balance Sheets, Production in 1000 Persian Marks

Year	2003	2004	2004
Total assets	4508.33	4464.93	4515.39
Fixed assets, net of depreciation	496.61	467.67	436.76
Construction in progress	0.00	0.00	0.00
Current assets	20.19	31.23	22.31
Cash, bank	9.41	9.89	10.38
Cash surplus, finance available	4126.28	4016.14	3991.34
Loss carried forward	0.00	0.00	0.00
Loss	147.86	149.51	155.45
Total liabilities	4508.33	4464.93	4515.39
Equity capital	1250.00	1250.00	1250.00
Reserves, retained profit	3249.22	3205.71	3255.25
Profit	0.00	0.00	0.00
Long and medium term debt	0.00	0.00	0.00
Current liabilities	9.11	9.57	10.05
Bank overdraft, finance required	0.00	0.00	0.00
Total debt	9.11	9.57	10.05
Equity, % of liabilities	26.00	26.80	27.68

Projected Balance Sheets, Production in 1000 German Marks

Year	2002	2003	2004
Total assets	4808.33	4664.93	4515.89
Fixed assets, net of depreciation	498.61	467.67	436.74
Construction in progress	0.00	0.00	0.00
Current assets	89.19	81.20	72.25
Cash, bank	9.41	9.88	10.38
Cash surplus, finance available	4126.26	4016.64	3891.04
Loss carried forward	0.00	0.00	0.00
Loss	145.85	149.51	155.45
Total liabilities	4808.33	4664.93	4515.89
Equity capital	1250.00	1250.00	1250.00
Reserves, retained profit	3549.22	3405.36	3255.85
Profit	0.00	0.00	0.00
Long and medium term debt	0.00	0.00	0.00
Current liabilities	9.11	9.57	10.05
Bank overdraft, finance required	0.00	0.00	0.00
Total debt	9.11	9.57	10.05
Equity, % of liabilities	26.00	26.80	27.66

Tabl FRI10 : Text Variables

Project Name: Refrigerator Manufacturing Plant Malawi

Date: 24.05.1988

Name of Alternative: Feasibility Study

Accounting currency: 1000 German Marks

Name of Product (A): KSD Fridge/Freezer 9 cft

(B): KSD Fridge/Freezer 12 cft

(C): FKS Bottle Cooler 12 cft

Fact FRI10 : General Variables

Multiplier to compute foreign into accounting currency:	1.000
Multiplier to compute local into accounting currency:	1.000
Construction phase: 1 year(s), planned yearly	
Interest rate for computation of future values in % p.a.:	0.000
Percent rate for DF-Discounting:	15.000

Tab: FRI10 : Source of finance - foreign funds

Equity - D: first disbursement in year 1

Equity - F: not specified

Subsidies : not specified

Loan A: first disbursement in period 1
Amortization: annuity
lasting for 5 years
paying yearly rates
Period of grace: 1 year(s)
Interests payable: 8.0 % for year 2 through 7

Loan B: first disbursement in period 1
Amortization: annuity
lasting for 6 years
paying yearly rates
Period of grace: 1 year(s)
Interests payable: 10.5 % for year 2 through 7

Loan C: first disbursement in period 1
Amortization: annuity
lasting for 1 years
paying yearly rates
Period of grace: 1 year(s)
Interests payable: 8.0 % for year 1 through 2

Overdraft: not specified

Tabl FRI10 : Subtable Initial Fixed Investment - foreign

---------- COMFAR 2.0 - Project Consultancy GmbH, Wannsee,FRG -----

Col	1	2	3	4	5	6	7
	Depreci- %	Type of de	Scrap - %	Depreciati	Amount- FI	Amount- FI	Amount- FI
1	1 Land.....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	2 Site preparation and developme	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	3 Structures and civil fa.....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	4 Structures and civil fa.....	5.00	1.00	0.00	0.00	146.00	0.00	0.00
1	5 Incorporated fixed assets.-al	20.00	1.00	0.00	0.00	50.00	0.00	0.00
1	6 Incorporated fixed assets.-bl	0.00	1.00	0.00	0.00	270.00	0.00	0.00
1	7 Incorporated fixed assets.-cl	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	8 Plant machinery and equipme-al	10.00	1.00	0.00	0.00	730.00	0.00	0.00
1	9 Plant machinery and equipme-bl	10.00	1.00	0.00	0.00	99.00	0.00	0.00
1	10 Auxiliary and service facilit	10.00	1.00	0.00	0.00	65.00	0.00	0.00
1	11 Pre-production expenditures...	0.00	1.00	0.00	0.00	109.00	0.00	0.00
1	12 Inventory, working capital....	0.00	1.00	0.00	0.00	0.00	0.00	0.00

Tabl FRI10 : Subtable Initial Fixed Investment - local

---------- COMFAR 2.0 - Project Consultancy GmbH, Wannsee,FRG -----

Col	1	2	3	4	5	6	7
	Depreci- %	Type of de	Scrap - %	Depreciati	Amount- FI	Amount- FI	Amount- FI
1	13 Land.....	0.00	1.00	0.00	0.00	24.50	0.00	0.00
1	14 Site preparation and developme	5.00	1.00	0.00	0.00	2.50	0.00	0.00
1	15 Structures and civil fa.....	5.00	1.00	0.00	0.00	310.50	0.00	0.00
1	16 Structures and civil fa.....	5.00	1.00	0.00	0.00	116.77	0.00	0.00
1	17 Incorporated fixed assets.-al	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	18 Incorporated fixed assets.-bl	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	19 Incorporated fixed assets.-cl	5.00	1.00	0.00	0.00	41.50	0.00	0.00
1	20 Plant machinery and equipme-al	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	21 Plant machinery and equipme-bl	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	22 Auxiliary and service facilit	0.00	1.00	0.00	0.00	0.00	0.00	0.00
1	23 Pre-production expenditures...	0.00	1.00	0.00	0.00	114.08	0.00	0.00
1	24 Inventory, working capital....	0.00	1.00	0.00	0.00	0.00	0.00	0.00

Tab: FRI10 : Suitable Initial Fixed Investment - foreign

COMFAR 3.0 - Project Consultancy GmbH, Mainhausen.PRJ

Col	1	2	3	4	5	6	7
	Depreci- %	Type of de	Scrap - %	Depreciati	Amount- FI	Amount- FI	Amount- FI
L 1 Land.....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 2 Site preparation and developme	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 3 Structures and civil (a).....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 4 Structures and civil (b).....	5.00	1.00	0.00	0.00	14e.00	0.00	0.00
L 5 Incorporated fixed assets.-(a)	20.00	1.00	0.00	0.00	50.00	0.00	0.00
L 6 Incorporated fixed assets.-(b)	0.00	1.00	0.00	0.00	270.00	0.00	0.00
L 7 Incorporated fixed assets.-(c)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 8 Plant machinery and equipment(	10.00	1.00	0.00	0.00	930.00	0.00	0.00
L 9 Plant machinery and equipment(	10.00	1.00	0.00	0.00	99.00	0.00	0.00
L 10 Auxiliary and service facilit	10.00	1.00	0.00	0.00	65.00	0.00	0.00
L 11 Pre-production expenditures...	0.00	1.00	0.00	0.00	109.00	0.00	0.00
L 12 Inventory, working capital....	0.00	1.00	0.00	0.00	0.00	0.00	0.00

Tab: FRI10 : Suitable Initial Fixed Investment - local

COMFAR 3.0 - Project Consultancy GmbH, Mainhausen.PRJ

Col	1	2	3	4	5	6	7
	Depreci- %	Type of de	Scrap - %	Depreciati	Amount- FI	Amount- FI	Amount- FI
L 13 Land.....	0.00	1.00	0.00	0.00	24.50	0.00	0.00
L 14 Site preparation and developme	5.00	1.00	0.00	0.00	7.50	0.00	0.00
L 15 Structures and civil (a).....	5.00	1.00	0.00	0.00	313.50	0.00	0.00
L 16 Structures and civil (b).....	5.00	1.00	0.00	0.00	126.77	0.00	0.00
L 17 Incorporated fixed assets.-(a)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 18 Incorporated fixed assets.-(b)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 19 Incorporated fixed assets.-(c)	5.00	1.00	0.00	0.00	41.50	0.00	0.00
L 20 Plant machinery and equipment(	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 21 Plant machinery and equipment(	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 22 Auxiliary and service facilit	0.00	1.00	0.00	0.00	0.00	0.00	0.00
L 23 Pre-production expenditures...	0.00	1.00	0.00	0.00	114.98	0.00	0.00
L 24 Inventory, working capital....	0.00	1.00	0.00	0.00	0.00	0.00	0.00

Tab: FRI10 : Suitable Current Fixed Investment - foreign

COMFAR 3.0 - Project Consultancy GmbH, Mainhausen,FRG

Col	1	2	3	4	5	6	7
	Depreciat %	Depreciati	Scrap - %	Depreciati	Amount- Y1	Amount- Y2	Amount- Y3
25 Land..	0.00	1.00	0.00	0.00	0.00	0.00	0.00
26 Site preparation and developme	0.00	1.00	0.00	0.00	0.00	0.00	0.00
27 Structures and civil (a).....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
28 Structures and civil (b).....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
29 Incorporated fixed assets,-(a)	20.00	1.00	0.00	0.00	0.00	0.00	0.00
30 Incorporated fixed assets,-(b)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
31 Incorporated fixed assets,-(c)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
32 Plant machinery and equipm-(a)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
33 Plant machinery and equipm-(b)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
34 Auxiliary and service facilit	0.00	1.00	0.00	0.00	0.00	0.00	0.00
35 Pre-production expenditures...	0.00	1.00	0.00	0.00	0.00	0.00	0.00
36 Inventory, working capital....	0.00	1.00	0.00	0.00	0.00	0.00	0.00

Tab: FRI10 : Suitable Current Fixed Investment - local

COMFAR 3.0 - Project Consultancy GmbH, Mainhausen,FRG

Col	1	2	3	4	5	6	7
	Depreciat %	Depreciati	Scrap - %	Depreciati	Amount- Y1	Amount- Y2	Amount- Y3
37 Land.....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
38 Site preparation and developme	0.00	1.00	0.00	0.00	0.00	0.00	0.00
39 Structures and civil (a).....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
40 Structures and civil (b).....	0.00	1.00	0.00	0.00	0.00	0.00	0.00
41 Incorporated fixed assets,- a)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
42 Incorporated fixed assets,-(b)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
43 Incorporated fixed assets,-(c)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
44 Plant machinery and equipm-(a)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
45 Plant machinery and equipm-(b)	0.00	1.00	0.00	0.00	0.00	0.00	0.00
46 Auxiliary and service facilit	0.00	1.00	0.00	0.00	0.00	0.00	0.00
47 Pre-production expenditures...	0.00	1.00	0.00	0.00	0.00	0.00	0.00
48 Inventory, working capital....	0.00	1.00	0.00	0.00	0.00	0.00	0.00

Tab: FR110 : Suitable Production Costs - foreign

Col	1	2	3	4	5	6	7
	Inflator %	Adjust- %1	Adjust- %2	Adjust- %3	Adjust- %4	Adjust- %5	Adjust- %6
52 Raw material, annual cost (a).	0.00	0.00	0.00	0.00	0.00	0.00	0.00
53 Raw material, annual cost (b).	0.00	0.00	0.00	0.00	0.00	0.00	0.00
54 Utilities, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55 Energy, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
56 Labour (direct), annual cost..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
57 Maintenance, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
58 Spares, annual cost.....	0.00	0.00	0.00	10.00	10.00	10.00	10.00
59 Factory overheads, annual cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60 Administration, labour cost...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
61 Administration, non-labour cos	0.00	0.00	0.00	0.00	0.00	0.00	0.00
62 Marketing, labour cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
63 Marketing, non-labour cost....	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tab: FR110 : Suitable Standard Production Costs - foreign

Col	1	2	3	4	5	6	7
	Quantity A	Variable A	Quantity B	Variable B	Quantity C	Variable C	Quantity D
64 Raw material (a	1.85	100.00	1.61	100.00	0.20	100.00	0.00
	Product A	Not used	Product B	Not used	Product C	Not used	Product D
65 Raw material, unit price (a...	345.00	0.00	295.00	0.00	475.00	0.00	0.00
	Quantity A	Variable A	Quantity B	Variable B	Quantity C	Variable C	Quantity D
66 Raw material (b).....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Product A	Not used	Product B	Not used	Product C	Not used	Product D
67 Raw material, unit price (b ...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Standard A	Variable A	Standard B	Variable B	Standard C	Variable C	Standard D
68 Utilities, annual cost.....	9.90	100.00	7.00	100.00	3.50	100.00	0.00
69 Energy, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 Labour (direct), annual cost..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
71 Maintenance, annual cost.....	5.55	100.00	3.95	100.00	1.95	100.00	0.00
72 Spares, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73 Factory overheads, annual cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00
74 Administration, labour cost...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75 Administration, non-labour cos	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76 Marketing, labour cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
77 Marketing, non-labour cost....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Foreign A	Foreign B	Foreign C	Foreign D	Foreign E	Foreign F	Local - A
78 % of annual depreciation costs	45.47	40.55	14.04	0.00	0.00	0.00	46.17

Tab: FR110 : Suitable Production Costs - local

Col	1	2	3	4	5	6	7
	Inflator %	Adjust- %1	Adjust- %2	Adjust- %3	Adjust- %4	Adjust- %5	Adjust- %6
82 Raw material, annual cost (a).	0.00	0.00	0.00	0.00	0.00	0.00	0.00
83 Raw material, annual cost (b).	0.00	0.00	0.00	0.00	0.00	0.00	0.00
84 Utilities, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85 Energy, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86 Labour (direct), annual cost..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87 Maintenance, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
88 Spares, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
89 Factory overheads, annual cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00

L P0 Administration, labour cost...	5.00	0.00	0.00	0.00	0.00	0.00	0.00
L P1 Administration, non-labour cos	5.00	0.00	0.00	0.00	0.00	0.00	0.00
L P2 Marketing, labour cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L P3 Marketing, non-labour cost....	0.00	5.00	5.00	5.00	5.00	5.00	5.00

Fact FRI10 : Suitable Standard Production Costs - local

Col	1	2	3	4	5	6	7
	Quanti- A	Variat- A	Quanti- B	Variat- B	Quanti- C	Variat- C	Quanti- D
L P4 Raw material (a).....	0.85	100.00	0.60	100.00	0.20	100.00	0.00
	Product A	Not used	Product B	Not used	Product C	Not used	Product D
L P5 Raw material, unit price (a)...	109.00	0.00	139.00	0.00	95.00	0.00	0.00
	Quanti- A	Variat- A	Quanti- B	Variat- B	Quanti- C	Variat- C	Quanti- D
L P6 Raw material (b).....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Product A	Not used	Product B	Not used	Product C	Not used	Product D
L P7 Raw material, unit price (b)...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Standa- A	Variat- A	Standa- B	Variat- B	Standa- C	Variat- C	Standa- D
L P8 Utilities, annual cost.....	0.47	100.00	1.22	100.00	0.16	100.00	0.00
L P9 Energy, annual cost.....	1.71	100.00	1.21	100.00	0.64	100.00	0.00
L 100 Labour (direct), annual cost..	11.85	100.00	8.76	100.00	4.19	100.00	0.00
L 101 Maintenance, annual cost.....	2.82	0.00	2.12	0.00	1.07	0.00	0.00
L 102 Spares, annual cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 103 Factory overheads, annual cost	25.69	0.00	19.47	0.00	9.27	0.00	0.00
L 104 Administration, labour cost...	0.77	100.00	0.15	100.00	0.08	100.00	0.00
L 105 Administration, non-labour cos	0.97	0.00	0.68	0.00	0.34	0.00	0.00
L 106 Marketing, labour cost.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 107 Marketing, non-labour cost....	0.00	0.00	0.00	0.00	0.00	0.00	0.00

L 145 Labour included in direct -	F	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tabl FRI10 : Saleable Production Program and Sales - local

COMFAR 2.0 - Project Consultancy Gmbh, Mainhausen,FRG

Col		1	2	3	4	5	6	7
		Reference	Quanti- Y1	Quanti- Y2	Quanti- Y3	Quanti- Y4	Quanti- Y5	Quanti- Y6
L 146 Yearly production, local p-	A	0.85	0.85	0.85	0.85	0.85	0.85	0.85
		Inflat- %	1st year	2nd year	3rd year	4th year	5th year	6th year
L 147 Unit price, local product	A..	5.00	1500.00	1500.00	1500.00	1500.00	1500.00	1500.00
L 148 Sales tax, local product	A...	5.00	330.55	330.55	330.55	330.55	330.55	330.55
L 149 Other direct variable cost-	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 150 Direct non-variable cost, -	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 151 Labour included in direct -	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reference	Quanti- Y1	Quanti- Y2	Quanti- Y3	Quanti- Y4	Quanti- Y5	Quanti- Y6
L 152 Yearly production, local p-	B	0.60	0.60	0.60	0.60	0.60	0.60	0.60
		Inflat- %	1st year	2nd year	3rd year	4th year	5th year	6th year
L 153 Unit price, local product	B..	5.00	1200.00	1200.00	1200.00	1200.00	1200.00	1200.00
L 154 Sales tax, local product	B...	5.00	250.00	250.00	250.00	250.00	250.00	250.00
L 155 Other direct variable cost-	B	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 156 Direct non-variable cost, -	B	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 157 Labour included in direct -	B	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reference	Quanti- Y1	Quanti- Y2	Quanti- Y3	Quanti- Y4	Quanti- Y5	Quanti- Y6
L 158 Yearly production, local p-	C	0.30	0.30	0.30	0.30	0.30	0.30	0.30
		Inflat- %	1st year	2nd year	3rd year	4th year	5th year	6th year
L 159 Unit price, local product	C..	5.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
L 160 Sales tax, local product	C...	5.00	191.11	191.11	191.11	191.11	191.11	191.11
L 161 Other direct variable cost-	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 162 Direct non-variable cost, -	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 163 Labour included in direct -	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reference	Quanti- Y1	Quanti- Y2	Quanti- Y3	Quanti- Y4	Quanti- Y5	Quanti- Y6
L 164 Yearly production, local p-	D	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Inflat- %	1st year	2nd year	3rd year	4th year	5th year	6th year
L 165 Unit price, local product	D..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 166 Sales tax, local product	D...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 167 Other direct variable cost-	D	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 168 Direct non-variable cost, -	D	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 169 Labour included in direct -	D	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reference	Quanti- Y1	Quanti- Y2	Quanti- Y3	Quanti- Y4	Quanti- Y5	Quanti- Y6
L 170 Yearly production, local p-	E	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Inflat- %	1st year	2nd year	3rd year	4th year	5th year	6th year
L 171 Unit price, local product	E..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 172 Sales tax, local product	E...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 173 Other direct variable cost-	E	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 174 Direct non-variable cost, -	E	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 175 Labour included in direct -	E	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reference	Quanti- Y1	Quanti- Y2	Quanti- Y3	Quanti- Y4	Quanti- Y5	Quanti- Y6
L 176 Yearly production, local p-	F	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Inflat- %	1st year	2nd year	3rd year	4th year	5th year	6th year
L 177 Unit price, local product	F..	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 178 Sales tax, local product	F...	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 179 Other direct variable cost-	F	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 180 Direct non-variable cost, -	F	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 181 Labour included in direct -	F	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tabl FRI10 : Subtable Working Capital Requirements - f/l

COMFAR 2.0 - Project Consultancy GabH, Mainhausen,FRG

Col	1	2	3	4	5	6	7
	Covera- F	Covera- L	Covera- F	Covera- L	Not used	Not used	Not used
L 182 Accounts receivable C1/C2; cas	30.00	30.00	30.00	30.00	1.00	1.00	1.00
	Covera- F	Covera- L	not used	not used	Not used	Not used	Not used
L 183 Inventory, raw material (a)...	90.00	90.00	1.00	1.00	1.00	1.00	1.00
L 184 Inventory, raw material (b)...	90.00	90.00	1.00	1.00	1.00	1.00	1.00
L 185 Inventory, utilities.....	30.00	30.00	1.00	1.00	1.00	1.00	1.00
L 186 Inventory, energy.....	30.00	30.00	1.00	1.00	1.00	1.00	1.00
L 187 Inventory, spare parts.....	180.00	30.00	1.00	1.00	1.00	1.00	1.00
L 188 Inventory, work-in-progress...	20.00	20.00	1.00	1.00	1.00	1.00	1.00
L 189 Inventory, finished products..	15.00	15.00	1.00	1.00	1.00	1.00	1.00
L 190 Accounts payable.....	30.00	30.00	1.00	1.00	1.00	1.00	1.00

Tab: FRI10 : Suitable Source of Finance - foreign

Col	1	2	3	4	5	6	7
	1st disbu	2nd disbu	3rd disbu	4th disbu	5th disbu	6th disbu	7th disbu
191 Equity-I ordinary shares....	500.00	0.00	0.00	0.00	0.00	0.00	0.00
192 Equity-P preference shares .	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193 Subsidies, grants.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
194 Loan A, Foreign (AF	571.43	0.00	0.00	0.00	0.00	0.00	0.00
195 Loan B, Foreign (BF).....	571.43	0.00	0.00	0.00	0.00	0.00	0.00
196 Loan C, Foreign (CF).....	285.71	0.00	0.00	0.00	0.00	0.00	0.00
197 Overdraft during production...	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tab: FRI10 : Suitable Source of Finance - local

Col	1	2	3	4	5	6	7
	1st disbu	2nd disbu	3rd disbu	4th disbu	5th disbu	6th disbu	7th disbu
199 Equity-I ordinary shares....	750.00	0.00	0.00	0.00	0.00	0.00	0.00
200 Equity-P preference shares .	0.00	0.00	0.00	0.00	0.00	0.00	0.00
201 Subsidies, grants.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202 Loan A, local (AL.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
203 Loan B, local (BL.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
204 Loan C, local (CL.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
205 Overdraft during production...	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Task FRI10 : Suitable Income, Tax, Cashflow

Col	1	2	3	4	5	6	7
	Variab- T	Yearly- I	Tax no-liv	Years loss	Tax credit	Differ- F	Differ- L
L 205 Income tax.....	0.00	50.00	0.00	0.00	0.00	0.00	0.00
	1st year	2nd year	3rd year	4th year	5th year	6th year	7th year
L 206 Investment allowance deducted	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 207 Depreciation allowance (initia	2750.31	0.00	0.00	0.00	0.00	0.00	0.00
L 208 Adjustment of income tax.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 209 Tax rate in % (if defined var	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 210 Profit distributed Equity---FR	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 211 Profit distributed Equity---F_	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 212 Profit distributed Equity---IF	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 213 Profit distributed Equity---L_	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Task FRI10 : Subtable Production Costs - foreign

-- COMFAR 2.1 - Project Consultancy GmbH, Mainhausen, FRG -----

8	9	10	11	12	13	14	15	16	17	18
Adjust-V7	Adjust-V8	Adjust-V9	Adjust-V10	Adjust-V11	Adjust-V12	Adjust-V13	Adjust-V14	Adjust-V15	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.89	18.89	18.89	18.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Task FRI10 : Subtable Standard Production Costs - foreign

-- COMFAR 2.1 - Project Consultancy GmbH, Mainhausen, FRG -----

8	9	10	11	12	13	14	15	16	17	18
Variatn D	Quantn E	Variatn E	Quantn F	Variatn F	Not used	Not used	Not used	Not used	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Not used	Product E	Not used	Product F	Not used	Not used	Not used	Not used	Not used	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variatn D	Quantn E	Variatn E	Quantn F	Variatn F	Not used	Not used	Not used	Not used	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Not used	Product E	Not used	Product F	Not used	Not used	Not used	Not used	Not used	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Variatn D	Standa E	Variatn E	Standa F	Variatn F	Not used	Not used	Not used	Not used	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Local - B	Local - C	Local - D	Local - E	Local - F	Not used	Not used	Not used	Not used	Not used	Not used
33.71	15.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Task FRI10 : Subtable Production Costs - local

-- COMFAR 2.1 - Project Consultancy GmbH, Mainhausen, FRG -----

8	9	10	11	12	13	14	15	16	17	18
Adjust-V7	Adjust-V8	Adjust-V9	Adjust-V10	Adjust-V11	Adjust-V12	Adjust-V13	Adjust-V14	Adjust-V15	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tab. FRI10 : Suitable Production Program and Sales - local

-- COMFAR 2.0 - Project Consultancy Sach. Mainhausen,FRG -----

8	9	10	11	12	13	14	15	16	17	18
Quanti- Y7	Quanti- Y8	Quanti- Y9	Quanti-Y10	Quanti-Y11	Quanti-Y12	Quanti-Y13	Quanti-Y14	Quanti-Y15	Not used	Not used
0.35	0.35	0.35	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7th year	8th year	9th year	10th year	11th year	12th year	13th year	14th year	15th year	Not used	Not used
1500.00	1500.00	1500.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
330.55	330.55	330.55	330.55	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
Quanti- Y7	Quanti- Y8	Quanti- Y9	Quanti-Y10	Quanti-Y11	Quanti-Y12	Quanti-Y13	Quanti-Y14	Quanti-Y15	Not used	Not used
[illegible]	[illegible]	[illegible]	[illegible]	0.00	0.00	0.00	0.00	0.00	0.00	[illegible]
7th year	8th year	9th year	10th year	11th year	12th year	13th year	14th year	15th year	Not used	Not used
1500.00	1500.00	1500.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
[illegible]	[illegible]	[illegible]	[illegible]	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
Quanti- Y7	Quanti- Y8	Quanti- Y9	Quanti-Y10	Quanti-Y11	Quanti-Y12	Quanti-Y13	Quanti-Y14	Quanti-Y15	Not used	Not used
[illegible]	[illegible]	[illegible]	[illegible]	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7th year	8th year	9th year	10th year	11th year	12th year	13th year	14th year	15th year	Not used	Not used
[illegible]	[illegible]	[illegible]	[illegible]	0.00	0.00	0.00	0.00	0.00	0.00	0.
101.11	101.11	101.11	101.11	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
Quanti- Y7	Quanti- Y8	Quanti- Y9	Quanti-Y10	Quanti-Y11	Quanti-Y12	Quanti-Y13	Quanti-Y14	Quanti-Y15	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
7th year	8th year	9th year	10th year	11th year	12th year	13th year	14th year	15th year	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
Quanti- Y7	Quanti- Y8	Quanti- Y9	Quanti-Y10	Quanti-Y11	Quanti-Y12	Quanti-Y13	Quanti-Y14	Quanti-Y15	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.
7th year	8th year	9th year	10th year	11th year	12th year	13th year	14th year	15th year	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quanti- Y7	Quanti- Y8	Quanti- Y9	Quanti-Y10	Quanti-Y11	Quanti-Y12	Quanti-Y13	Quanti-Y14	Quanti-Y15	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7th year	8th year	9th year	10th year	11th year	12th year	13th year	14th year	15th year	Not used	Not used
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tab FRI10 : Subtable Working capital req., foreign

--- COMFAR 2.0 - Project Consultancy GmbH, Mainhausen,FRG ----

Col	1	2	3	4	5	6	7	8
	mdc	coto	required Y1	required Y2	required Y3	required Y4	required Y5	required Y6
L 1 receivables.......	30.00	12.00	87.38	89.64	93.16	95.02	96.92	98.86
L 2 raw material lst..	90.00	4.00	255.69	260.80	266.02	271.34	276.76	282.30
L 3 raw material other	90.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00
L 4 utilities.........	30.00	12.00	1.70	1.73	1.77	1.80	1.84	1.88
L 5 energy............	30.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00
L 6 spare-parts.......	180.00	2.00	0.00	0.00	10.35	10.56	10.77	10.99
L 7 work-in-progress..	20.00	18.00	58.59	59.76	62.10	63.35	64.61	65.91
L 8 finished products.	15.00	24.00	43.94	44.82	46.58	47.51	48.46	49.43
L 9 liabilities.......	30.00	12.00	87.38	89.64	93.16	95.02	96.92	98.86
L 10 cash in hand......	30.00	12.00	0.95	0.97	2.72	2.77	2.83	2.89
L 11 current assets....	515.00	120.00	448.25	457.73	482.70	492.35	502.20	512.24
L 12 net work'g capital	485.00	98.00	360.87	368.09	389.54	397.33	405.28	413.39
L 13 NWC increase......	0.00	0.00	360.87	7.22	21.45	7.79	7.95	8.11

Tab FRI10 : Subtable Working capital req., local

--- COMFAR 2.0 - Project Consultancy GmbH, Mainhausen,FRG ----

Col	1	2	3	4	5	6	7	8
	mdc	coto	required Y1	required Y2	required Y3	required Y4	required Y5	required Y6
L 14 receivables.......	30.00	12.00	85.91	89.63	91.62	97.75	102.07	104.60
L 15 raw material lst..	90.00	4.00	51.14	52.16	53.20	54.27	55.35	56.46
L 16 raw material other	90.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00
L 17 utilities.........	30.00	12.00	0.08	0.08	0.09	0.09	[0.10?]	[0.10?]
L 18 energy............	[30.00?]	12.00	[illegible]	[illegible]	[0.03?]	[0.04?]	[0.06?]	[0.08?]
L 19 spare-parts.......	[30.00?]	[12.00?]	[0.00?]	[0.00?]	[0.00?]	[0.00?]	[0.00?]	[0.00?]
L 20 work-in-progress..	20.00	18.00	16.25	16.57	17.02	17.34	18.07	18.91
L 21 finished products.	15.00	24.00	13.10	13.50	13.91	14.34	14.79	15.25
L 22 liabilities.......	30.00	12.00	24.80	25.25	25.99	26.75	27.55	28.37
L 23 cash in hand......	30.00	12.00	8.77	9.21	9.67	10.15	10.65	11.15
L 24 current assets....	[365.00?]	[111.00?]	175.92	181.77	188.14	194.78	201.70	208.90
L 25 net work'g capital	[335.00?]	[99.00?]	151.12	156.53	162.15	168.02	174.15	180.53
L 26 NWC increase......	0.00	0.00	151.12	5.41	5.62	5.87	6.13	6.38

Tab FRI10 : Subtable Working capital req., consolidated

--- COMFAR 2.0 - Project Consultancy GmbH, Mainhausen,FRG ----

Col	1	2	3	4	5	6	7	8
	mdc	coto	required Y1	required Y2	required Y3	required Y4	required Y5	required Y6
L 27 NWC consol........	820.00	186.00	511.99	524.61	551.70	565.36	579.42	593.91
L 28 increase consol...	0.00	0.00	511.99	12.62	27.08	13.66	14.07	14.49

Table FRI10 : Subtable Working capital req., foreign

COMFAR 2.1 - Project Consultancy GmbH, Mainhausen, FRG

9	10	11	12	13	14	15	16	17	
required Y7	required Y8	required Y9	require-Y10	require-Y11	require-Y12	require-Y13	require-Y14	require-Y15	
100.34	102.35	104.91	107.01	0.00	0.00	0.00	0.00	0.00 L	1
287.75	293.70	299.53	305.57	0.00	0.00	0.00	0.00	0.00 L	2
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L	3
1.91	1.95	1.99	2.03	0.00	0.00	0.00	0.00	0.00 L	4
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L	5
11.21	11.43	11.66	11.89	0.00	0.00	0.00	0.00	0.00 L	6
67.22	68.57	69.94	71.34	0.00	0.00	0.00	0.00	0.00 L	7
50.42	51.43	52.46	53.50	0.00	0.00	0.00	0.00	0.00 L	8
100.34	102.35	104.91	107.01	0.00	0.00	0.00	0.00	0.00 L	9
2.94	3.00	3.06	3.12	0.00	0.00	0.00	0.00	0.00 L	10
522.43	532.97	543.59	554.47	0.00	0.00	0.00	0.00	0.00 L	11
421.65	430.38	438.68	447.46	0.00	0.00	0.00	0.00	0.00 L	12
8.27	8.43	8.60	8.77	-447.46	0.00	0.00	0.00	0.00 L	13

Table FRI10 : Subtable Working capital req., local

COMFAR 2.1 - Project Consultancy GmbH, Mainhausen, FRG

9	10	11	12	13	14	15	16	17	
required Y7	required Y8	required Y9	require-Y10	require-Y11	require-Y12	require-Y13	require-Y14	require-Y15	
111.08	113.32	115.57	117.88	8.34	8.76	9.41	9.88	10.38 L	14
57.59	58.74	59.91	61.11	0.00	0.00	0.00	0.00	0.00 L	15
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L	16
0.00	0.00	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00 L	17
0.43	0.43	0.44	0.45	0.00	0.00	0.00	0.00	0.00 L	18
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L	19
19.43	20.17	20.59	21.00	5.51	5.79	6.08	6.38	6.70 L	20
15.77	16.03	16.74	17.08	4.27	4.49	4.71	4.94	5.19 L	21
29.22	30.11	30.97	31.93	8.27	8.68	9.11	9.57	10.05 L	22
11.75	12.74	12.96	13.21	8.34	8.76	9.41	9.88	10.38 L	23
216.41	224.20	232.79	240.89	26.85	28.20	29.61	31.09	32.64 L	24
187.18	194.12	201.06	208.41	18.59	19.52	20.49	21.52	22.59 L	25
6.65	6.94	7.24	7.55	-190.72	0.93	0.98	1.02	1.08 L	26

Table FRI10 : Subtable Working capital req., consolidated

COMFAR 2.1 - Project Consultancy GmbH, Mainhausen, FRG

9	10	11	12	13	14	15	16	17	
required Y7	required Y8	required Y9	require-Y10	require-Y11	require-Y12	require-Y13	require-Y14	require-Y15	
608.83	624.20	640.14	656.76	18.59	19.52	20.49	21.52	22.59 L	27
14.92	15.37	15.84	16.32	-637.79	0.93	0.98	1.02	1.08 L	28

Page FRI10 : Suitable initial fixed investment - foreign

--- COMFAR 2.0 - Project Consultancy GmbH, Maithausen, FRG -----

Col	1	2	3	4	5	6	7	8
	sum foreig	sum avail/F			invest- P1	invest- P2	invest- P3	invest- P4
1 land, site........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 civil A+B.........	146.00	146.00	0.00	0.00	146.00	0.00	0.00	0.00
3 equipment A+B.....	1030.40	1030.40	0.00	0.00	1030.40	0.00	0.00	0.00
4 equipment C.......	65.50	65.50	0.00	0.00	65.50	0.00	0.00	0.00
5 incorporate.......	450.00	450.00	0.00	0.00	450.00	0.00	0.00	0.00
6 pp-expenses.......	134.40	109.00	0.00	0.00	134.40	0.00	0.00	0.00
7 total fixed.......	1826.30	1801.20	0.00	0.00	1826.30	0.00	0.00	0.00
8 inventory.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 receivables.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10 t o t a l.........	1826.30	1801.20	0.00	0.00	1826.30	0.00	0.00	0.00

Page FRI10 : Suitable initial fixed investment - local, consolidated

--- COMFAR 2.0 - Project Consultancy GmbH, Maithausen, FRG -----

Col	1	2	3	4	5	6	7	8
	sum local	sum avail/L	sum consol	sum avail/C	invest- P1	invest- P2	invest- P3	invest- P4
11 land, site........	78.00	78.00	78.00	78.00	78.00	0.00	0.00	0.00
12 civil A+B.........	427.07	427.07	573.07	573.07	573.07	0.00	0.00	0.00
13 equipment A+B.....	0.00	0.00	1030.40	1030.40	1030.40	0.00	0.00	0.00
14 equipment C.......	0.00	0.00	65.50	65.50	65.50	0.00	0.00	0.00
15 incorporate.......	41.50	41.50	491.50	491.50	491.50	0.00	0.00	0.00
16 pp-expenses.......	114.05	114.05	248.45	223.05	248.45	0.00	0.00	0.00
17 total fixed.......	620.95	620.95	2447.55	2422.15	2447.55	0.00	0.00	0.00
18 inventory.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19 receivables.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 t o t a l.........	620.95	620.95	2447.55	2422.15	2447.55	0.00	0.00	0.00

Page FRI10 : Suitable initial fixed investment - consolidated, foreign, lo

--- COMFAR 2.0 - Project Consultancy GmbH, Maithausen, FRG -----

Col	1	2	3	4	5	6	7	8
	grand tota	FAL	sum avai	sum avai	sum P1	sum P2	sum P3	sum P4
21 sum, cons f.......	2447.55	2447.55	1826.30	1826.30	1826.30	0.00	0.00	0.00
22 sum, local........	0.00	0.00	620.95	620.95	620.95	0.00	0.00	0.00

Text FR110 : Schedule investment during production, foreign

COMFAR 2.0 - Project Consultancy GmbH. Wainhausen, FRG

Col	1	2	3	4	5	6	7	8
	For Calcul	cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 151 land, site........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 152 civil A+B.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 153 equipmt A+B.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 154 equipment C.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 155 incorporate.......	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
L 156 pr-expenses.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 157 total fixed.......	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
L 158 in progress.......	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
L 159 inventory.........	0.00	359.92	7.22	19.71	7.74	7.39	8.75	8.21
L 160 receivables.......	0.00	87.88	1.76	3.52	1.56	1.50	1.64	1.78
L 161 cash, bank........	0.00	1.95	[illegible]	1.74	1.15	[illegible]	[illegible]	[illegible]
L 162 tot.current.......	0.00	449.75	8.98	24.97	9.65	9.55	10.14	[illegible]
L 163	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 164 total asset.......	0.00	449.75	8.98	24.97	109.65	9.55	10.14	10.14
L 165 depreciation......	0.00	122.92	122.92	122.92	132.92	152.92	156.92	156.92

Text FR110 : Schedule investment during production, consolidated

COMFAR 2.0 - Project Consultancy GmbH. Wainhausen, FRG

Col	1	2	3	4	5	6	7	8
	For Calcul	cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 166 land, site........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 167 civil A+B.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 168 equipmt A+B.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 169 equipment C.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 170 incorporate.......	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
L 171 pr-expenses.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 172 total fixed.......	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
L 173 in progress.......	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
L 174 inventory.........	0.00	449.33	9.12	21.33	9.76	9.97	11.19	12.41
L 175 receivables.......	0.00	173.30	5.52	7.46	5.99	[illegible]	[illegible]	[illegible]
L 176 cash, bank........	0.00	9.72	0.46	2.21	1.54	1.56	1.57	[illegible]
L 177 tot.current.......	0.00	624.40	15.19	31.04	16.29	16.76	17.25	17.75
L 178 loss c f..........	0.00	45.51	0.00	0.00	0.00	0.00	0.00	0.00
L 179 total asset.......	0.00	624.40	15.19	31.04	116.29	16.76	17.25	17.75
L 180 depreciation......	0.00	156.54	156.54	156.54	156.54	176.54	180.54	180.54

Text FR110 : Schedule investment during production, local

COMFAR 2.0 - Project Consultancy GmbH. Wainhausen, FRG

Col	1	2	3	4	5	6	7	8
	For Calcul	cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 181 total fixed.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 182 tot.current.......	0.00	175.65	[illegible]	[illegible]	[illegible]	[illegible]	7.20	[illegible]

Table FRI10 : Variable production costs, foreign

-- COMFAR 2.1 - Project Consultancy Dept. [illegible],FRG -----

Col	1	2	3	4	5	6	7	8
		cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 106 raw material......	0.00	1020.75	1042.20	1064.07	1085.35	1107.36	1129.20	1151.78
L 107 other RM..........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 108 utilities.........	0.00	20.40	20.81	21.22	21.65	22.08	22.52	22.97
L 109 energy............	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 110 labour............	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 111 maintenance.......	0.00	11.43	11.66	11.89	12.13	12.37	12.62	12.87
L 112 spares............	0.00	0.00	0.00	20.70	21.12	21.54	21.97	22.41
L 113 factory OH........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 114 sub-total.........	0.00	1054.58	1075.67	1117.89	1140.25	1163.05	1186.31	1210.04
L 115 variable	0.00	1054.58	1075.67	1097.19	1119.13	1141.51	1164.34	1187.63
L 116 admin. OH.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 117 [illegible].........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 118 operating c.......	0.00	1054.58	1075.67	1117.89	1140.25	1163.05	1186.31	1210.04
L 119 depreciation......	0.00	132.92	132.92	132.92	132.92	152.92	176.92	176.92
L 120 sub-total.........	0.00	1187.50	1208.59	1250.81	1273.17	1315.97	1363.23	1386.96
L 121 interest..........	0.00	177.69	111.13	93.47	73.75	51.79	27.21	0.00
L 122 total cost........	0.00	1365.19	1319.77	1344.28	1346.92	1367.76	1390.54	1386.96
L 123 variable..........	0.00	1054.58	1075.67	1097.19	1119.13	1141.51	1164.34	1187.63
L 124 labour	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tab FRI10 : Subtable **production costs, consolidated**

COMFAR 2.0 - Project Consultancy [illegible]

Col	1	2	3	4	5	6	7	8
		cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 126 raw material......	0.00	[illegible]	1251.35	1276.58	1302.42	1328.47	[illegible]	[illegible]
L 127 other RM..........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 128 utilities.........	0.00	[illegible]	21.82	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 129 energy............	0.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.54	[illegible]
L 130 labour............	0.00	24.79	25.61	26.57	[illegible]	[illegible]	[illegible]	[illegible]
L 131 maintenance.......	0.00	17.64	[illegible]	18.74	[illegible]	[illegible]	20.55	[illegible]
L 132 spares............	0.00	0.00	0.00	20.70	[illegible]	21.54	21.97	[illegible]
L 133 factory ovh.......	0.00	54.57	57.42	60.29	[illegible]	66.47	[illegible]	[illegible]
L 134 subtotal..........	0.00	[illegible]	[illegible]	1429.72	1461.23	[illegible]	[illegible]	[illegible]
L 135 variable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 136 admin. ovh........	[illegible]	[illegible]	20.96	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 137 marketing.........	[illegible]	5.00	5.00	5.00	5.00	5.00	5.00	[illegible]
L 138 operating c.......	[illegible]	[illegible]	1404.57	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 139 depreciation......	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 140 subtotal..........	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 141 interest..........	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 142 total PCost.......	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 143 variable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 144 labour............	[illegible]	[illegible]	44.46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 145	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Tab FRI10 : Subtable **local costs: marketing distribution foreign, consolidated**

COMFAR 2.0 - Project Consultancy [illegible]

Col	1	2	3	4	5	6	7	8
		cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 146 variable..........	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 147 labour............	[illegible]	[illegible]	44.48	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L 148 total PCost.......	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Tab FRI10 : [illegible] sales (= production programme) local

-- COMFAR 2.0 - Project Consultancy [illegible] -----

Col	1	2	3	4	5	6	7	8
		cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 77 A,sales qu........	0.00	1275.00	1338.75	1405.69	1475.97	1549.77	1627.26	1708.62
L 78 -net of tax.......	0.00	944.45	991.67	1041.25	1093.31	1147.98	1205.38	1265.65
L 79 -net cur.c........	0.00	944.45	991.67	1041.25	1093.31	1147.98	1205.38	1265.65
L 80 B,sales qu........	0.00	1080.00	1134.00	1190.70	1250.23	1312.75	1378.38	1447.30
L 81 -net of tax.......	0.00	800.00	840.00	882.00	926.10	972.40	1021.03	1072.08
L 82 -net cur.c........	0.00	800.00	840.00	882.00	926.10	972.40	1021.03	1072.08
L 83 C,sales qu........	0.00	390.00	409.50	429.97	451.47	474.05	497.75	522.64
L 84 -net of tax.......	0.00	288.89	303.33	318.50	334.43	351.15	368.70	387.14
L 85 -net cur.c........	0.00	288.89	303.33	318.50	334.43	351.15	368.70	387.14
L 86 D,sales qu........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 87 -net of tax.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 88 -net cur.c........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 89 E,sales qu........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 90 -net of tax.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 91 -net cur.c........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 92 F,sales qu........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 93 -net of tax.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 94 -net cur.c........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 95 total sales.......	0.00	2745.00	2882.25	3026.36	3177.68	3336.56	3503.39	3678.56
L 96 -net of tax.......	0.00	2033.33	2135.00	2241.75	2353.84	2471.53	2595.11	2724.86
L 97 -net cur.c........	0.00	2033.33	2135.00	2241.75	2353.84	2471.53	2595.11	2724.86

Tab FRI10 [illegible] sales (= production programme) consolidated

-- COMFAR 2.0 - Project Consultancy [illegible] -----

Col	1	2	3	4	5	6	7	8
		cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 98 total sales.......	0.00	2745.00	2882.25	3026.36	3177.68	3336.56	3503.39	3678.56
L 99 -net of tax.......	0.00	2033.33	2135.00	2241.75	2353.84	2471.53	2595.11	2724.86
L 100 -net cur.c.......	0.00	2033.33	2135.00	2241.75	2353.84	2471.53	2595.11	2724.86
L 101 tax foreign......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 102 tax cons.........	0.00	711.67	747.25	784.61	823.84	865.03	908.28	953.70
L 103 labour, for......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 104 labour, loc......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 105 labour,cons......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table FRI10 : Sources finance - initial investment = foreign

-- COMFAR 2.1 - Project Consultancy Germ., Mainhausen,FRG -----

Col	1	2	3	4	5	6	7	8
	total funds	total FVAL			funds F1	funds F2	funds F3	funds F4
L 23 equ.L. paid.......	500.00	500.00	0.00	0.00	500.00	0.00	0.00	0.00
L 24 equ.F. paid.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 25 subsidies.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 26 loan A paid.......	591.12	591.12	0.00	0.00	591.12	0.00	0.00	0.00
L 27 loan B paid.......	591.13	591.13	0.00	0.00	591.13	0.00	0.00	0.00
L 28 loan C paid.......	635.00	658.40	0.00	0.00	635.00	0.00	0.00	0.00
L 29 total loan........	1817.25	1840.65	0.00	0.00	1817.25	0.00	0.00	0.00
L 30 debt A............	0.00	0.00	0.00	0.00	591.12	0.00	0.00	0.00
L 31 debt B............	0.00	0.00	0.00	0.00	591.13	0.00	0.00	0.00
L 32 debt C............	0.00	0.00	0.00	0.00	635.00	0.00	0.00	0.00
L 33 total debt........	0.00	0.00	0.00	0.00	1817.25	0.00	0.00	0.00
L 34 debt/funds%.......	0.00	0.00	0.00	0.00	78.42	0.00	0.00	0.00

Table FRI10 : Sources finance - initial investment = local

-- COMFAR 2.1 - Project Consultancy Germ., Mainhausen,FRG -----

Col	1	2	3	4	5	6	7	8
	total funds	total FVAL	local+forg	total FVAL	funds F1	funds F2	funds F3	funds F4
L 35 equ.L paid........	750.00	750.00	500.00	500.00	750.00	0.00	0.00	0.00
L 36 equ.F paid........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 37 subsidies.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 38 loan A paid.......	0.00	0.00	591.12	591.12	0.00	0.00	0.00	0.00
L 39 loan B paid.......	0.00	0.00	591.13	591.13	0.00	0.00	0.00	0.00
L 40 loan C paid.......	0.00	0.00	635.00	658.40	0.00	0.00	0.00	0.00
L 41 total loan........	750.00	750.00	1817.25	1840.65	750.00	0.00	0.00	0.00
L 42 debt A............	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 43 debt B............	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 44 debt C............	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 45 total debt........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 46 debt/funds%.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table FRI10 : Sources finance - initial investment = consolidated

-- COMFAR 2.1 - Project Consultancy Germ., Mainhausen,FRG -----

Col	1	2	3	4	5	6	7	8
	total funds	total FVAL			funds F1	funds F2	funds F3	funds F4
L 47 sum equity........	1250.00	1250.00	500.00	500.00	1250.00	0.00	0.00	0.00
L 48 sum loan CF.......	1817.25	1840.65	1817.25	1840.65	1817.25	0.00	0.00	0.00
L 49 total funds.......	3067.25	0.00	2317.25	0.00	3067.25	0.00	0.00	0.00
L 50 debt/funds%.......	0.00	0.00	0.00	0.00	59.25	0.00	0.00	0.00
L 51 interest A........	25.40	0.00	0.00	0.00	25.40	0.00	0.00	0.00
L 52 interest L........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 53 interest C........	25.40	0.00	0.00	0.00	25.40	0.00	0.00	0.00

Table FRI10 : Suitable funds during production, foreign

COMFAR 2.0 - Project Consultancy GmbH, Mainhausen, FRG

Col	1	2	3	4	5	6	7	8
	For Calcul	casnfl- Y1	casnfl- Y2	casnfl- Y3	casnfl- Y4	casnfl- Y5	casnfl- Y6	casnfl- Y7
U 185 equ.B paid........	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 186 equ.F paid........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 187 balance net........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 188 profit dist........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 189 loanA.oflow........	571.13	-80.58	-87.02	-93.99	-101.51	-109.63	-118.40	0.00
U 190 loanB.oflow........	571.13	-70.13	-79.50	-90.35	-102.55	-116.39	-132.10	0.00
U 191 loanC.oflow........	605.00	-605.00	0.00	0.00	0.00	0.00	0.00	0.00
U 192 debt A............	571.13	490.55	403.53	309.53	208.02	118.40	0.00	0.00
U 193 debt B............	571.13	500.99	441.39	331.04	248.49	132.10	0.00	0.00
U 194 debt C............	605.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 195 subsidies.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 196 net worth.........	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 197 total loan........	1747.25	1021.54	884.91	650.57	476.50	250.50	0.00	0.00
U 198 s.term.bank.......	0.00	87.85	1.75	3.52	1.86	1.90	1.94	1.99
U 199 total funds.......	2247.25	-697.80	-164.37	-181.32	-202.19	-224.12	-248.56	1.99

Table FRI10 : Suitable funds during production, local

COMFAR 2.0 - Project Consultancy GmbH, Mainhausen, FRG

Col	1	2	3	4	5	6	7	8
	For Calcul	casnfl- Y1	casnfl- Y2	casnfl- Y3	casnfl- Y4	casnfl- Y5	casnfl- Y6	casnfl- Y7
U 200 equ.B paid........	750.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 201 equ.F paid........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 202 balance net........	0.00	481.54	337.89	424.05	477.62	536.69	595.54	646.45
U 203 profit dist........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 204 loanA.oflow........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 205 loanB.oflow........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 206 loanC.oflow........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 207 debt A............	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 208 debt B............	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 209 debt C............	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 210 subsidies.........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 211 net worth.........	750.00	481.54	337.89	424.05	477.62	536.69	595.54	646.45
U 212 total loan........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 213 s.term.bank.......	0.00	24.57	0.72	0.74	0.77	0.79	0.82	0.85
U 214 total funds.......	750.00	506.17	338.61	424.79	474.73	537.49	596.37	647.30

Table FRI10 : Suitable funds during production, consolidated

COMFAR 2.0 - Project Consultancy GmbH, Mainhausen, FRG

Col	1	2	3	4	5	6	7	8
	For Calcul	casnfl- Y1	casnfl- Y2	casnfl- Y3	casnfl- Y4	casnfl- Y5	casnfl- Y6	casnfl- Y7
U 215 equity paid........	1250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U 216 net worth.........	1250.00	481.54	337.89	424.05	477.62	536.69	595.54	646.45
U 217 long term.........	1747.25	-755.71	-166.60	-184.34	-204.15	-226.02	-250.50	0.00
U 218 short term........	0.00	112.41	2.47	4.26	2.62	2.70	2.76	2.83
U 219 total funds.......	2997.25	-161.76	223.74	243.97	275.19	313.37	347.80	649.28
U 220 loan repay........	2367.25	755.71	166.60	184.34	204.15	226.02	250.50	0.00

Col	1	2	3	4	5	6	7	8
	cflow. c/f	cashfl- Y1	cashfl- Y2	cashfl- Y3	cashfl- Y4	cashfl- Y5	cashfl- Y6	cashfl- Y7
L 221 gross profit......	0.00	-45.31	462.71	535.02	634.15	720.31	850.01	971.82
L 222 foreign inc.......	0.00	-1365.39	-1319.77	-1344.23	-1346.92	-1357.76	-1350.54	-1346.76
L 223 allowances........	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 224 taxable inc.......	0.00	-45.31	462.71	535.02	634.15	720.31	850.01	971.82
L 225 income tax........	0.00	0.00	231.36	267.51	317.08	360.16	425.00	485.91
L 226 net income........	0.00	-45.31	231.36	267.51	317.08	360.16	425.00	485.91
L 227 tx/dividend.......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 228 net dividend......	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L 229 acc. income.......	0.00	-45.31	185.55	453.05	770.13	1130.29	1555.29	2041.20
L 230 total interest....	0.00	122.38	474.62	825.59	1026.42	1628.77	2090.68	2576.59
L 231 CF-out,prod.......	2422.15	1385.39	1648.55	1751.02	1920.13	1897.11	1996.74	2093.02
L 232 CF-in,prod........	0.00	1532.83	2135.00	2241.75	2353.84	2471.57	2595.11	2724.86
L 233 net CF,prod.......	-2422.15	147.44	486.45	490.43	433.71	574.42	598.36	631.53
L 234 acc. net-CF.......	-2422.15	-2274.71	-1788.26	-1297.83	-864.12	-289.71	308.66	940.19
L 235 acc. NPV/IRR......	0.00	174.11	17.77	-335.42	11.02	0.00	0.06	0.00
L 236 NCF/sales %.......	0.00	5.77	16.33	16.21	17.65	17.22	17.08	17.17
L 237 NCF/invest %......	0.00	5.03	16.51	15.49	14.05	13.52	17.01	20.17
L 238 net income REI....	0.00	-45.31	231.36	267.51	317.08	360.16	425.00	485.91
L 239 NPV, IRR..........	0.00	140.13	15.19	0.00	0.00	0.00	0.00	0.00
L 240 netCF (REI).......	0.00	-316.16	238.64	212.37	155.90	296.61	320.56	331.87
L 241 total CF out......	2447.55	2349.52	1906.76	2029.17	2197.94	2174.92	2274.55	2392.92
L 242 total CF, in......	3067.25	2033.37	2135.00	2241.75	2353.84	2471.57	2595.11	2724.86
L 243 total netCF.......	619.70	-316.16	228.64	212.57	155.90	296.61	320.56	331.87
L 244 acc. netCF........	619.70	-196.46	32.13	224.30	380.71	677.32	997.87	1329.40
L 245 depr. allow.......	0.00	507.75	156.54	156.54	156.54	176.54	150.54	150.54
L 246 tax? of ref.......	0.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
L 247 tax due...........	0.00	0.00	231.36	267.51	317.08	360.16	425.00	485.91
L 248 acc. investm......	2422.15	2924.14	2946.76	2973.34	3087.51	3101.57	3116.06	3130.93

Table FRI10 : Suitable initial fixed investment - foreign

COMFAR 2.1 - Project Consultancy GmbH, Wainhausen,FRG

9	10	11	12	13	14	15	16	17	18		
invest- P5	invest- P6	invest- P7	invest- P8	Not used	Not used	Not used	Not used	Not used	scrap valu		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	1
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.50	L	2
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	3
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	4
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	370.00	L	5
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	134.40	L	6
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	515.50	L	7
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	8
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	9
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	515.50	L	10

Table FRI10 : Suitable initial fixed investment - local, consolidated

COMFAR 2.1 - Project Consultancy GmbH, Wainhausen,FRG

9	10	11	12	13	14	15	16	17	18		
invest- P5	invest- P6	invest- P7	invest- P8	Not used	Not used	Not used	Not used	Not used	scrap valu		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.35	L	11
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	145.74	L	12
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	13
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	14
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	330.73	L	15
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	245.43	L	16
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	755.17	L	17
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	18
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L	19
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	755.17	L	20

Table FRI10 : Suitable initial fixed investment - consolidated, foreign, lo
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COMFAR 2.1 - Project Consultancy GmbH, Wainhausen,FRG

9	10	11	12	13	14	15	16	17	18		
sum P5	sum P6	sum P7	sum P8	Not used	Not used	Not used	Not used	Not used	scrap val		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	515.50	L	21
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	[illegible]	L	22

Table FRI10 : Subtable investment during production, foreign

COMFAR 2.0 - Project Consultancy Comp. Mainhausen,FRG

9	10	11	12	13	14	15	16	17	18
cashfl- Y8	cashfl- Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	For Calcul	For Calcul
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 151
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 152
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 153
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 154
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 155
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 156
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 157
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 158
3.27	3.54	3.71	-444.74	0.00	0.00	0.00	0.00	0.00	0.00 L 159
2.02	2.16	2.22	-107.21	0.00	0.00	0.00	0.00	0.00	0.00 L 160
7.26	7.15	[illegible]	-7.12	0.00	0.00	0.00	0.00	0.00	0.00 L 161
13.45	13.66	13.27	-554.47	0.00	0.00	0.00	0.00	0.00	0.00 L 162
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 163
13.45	13.66	13.27	-554.47	0.00	0.00	0.00	0.00	0.00	0.00 L 164
175.92	175.92	115.92	7.00	7.00	7.00	7.00	7.00	0.00	540.92 L 165

Table FRI10 : Subtable investment during production, consolidated

COMFAR 2.0 - Project Consultancy Comp. Mainhausen,FRG

9	10	11	12	13	14	15	16	17	18
cashfl- Y8	cashfl- Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	For Calcul	For Calcul
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 166
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 167
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 168
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 169
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 170
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 171
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 172
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 173
10.64	10.87	11.11	-524.65	0.49	0.51	0.54	0.57	0.00	0.00 L 174
5.99	7.26	7.55	-225.45	0.43	0.45	0.47	0.49	0.00	0.00 L 175
0.65	0.63	[illegible]	-8.19	0.43	0.45	0.47	0.49	0.00	0.00 L 176
18.27	18.81	19.07	-758.50	1.34	1.41	1.48	1.55	0.00	0.00 L 177
0.00	0.00	0.00	120.26	133.48	140.62	149.21	155.45	0.00	0.00 L 178
18.27	18.81	19.07	-758.50	1.34	1.41	1.48	1.55	0.00	0.00 L 179
150.54	150.54	140.54	70.92	70.92	70.92	70.92	70.92	0.00	907.57 L 180

Table FRI10 : Subtable investment during production, local

COMFAR 2.0 - Project Consultancy Comp. Mainhausen,FRG

9	10	11	12	13	14	15	16	17	18
cashfl- Y8	cashfl- Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	For Calcul	For Calcul
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 L 181
7.82	8.05	8.50	-314.14	1.34	1.41	1.48	1.55	0.00	0.00 L 182

Task FR110 : Suitable production costs, foreign

9	10	11	12	13	14	15	16	17	18	
cashfl-Y8	cashfl-Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	Not used	Not used	
1174.82	1198.31	1222.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 106
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 107
22.47	22.90	24.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 108
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 109
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 110
13.13	13.39	13.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 111
22.33	22.32	23.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 112
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 113
					0.00	0.00	0.00	0.00	0.00	L 114
1224.24	1248.72	1273.70	0.00	0.00						
1211.79	1235.81	1260.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 115
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 116
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 117
1224.24	1248.72	1273.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 118
176.92	176.92	176.92	7.38	7.38	7.38	7.38	7.38	0.00	25.49	L 119
1371.16	1398.64	1426.62	7.38	7.38	7.38	7.38	7.38	0.00	25.49	L 120
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 121
1371.16	1398.64	1426.62	7.38	7.38	7.38	7.38	7.38	0.00	25.49	L 122
1211.79	1235.81	1260.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 123
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 124

Tabs FRI10 : Subtable production costs, consolidated

-- COMFAR 2.0 - Project Consultancy GmbH, Mainhausen, FRG -----

9	10	11	12	13	14	15	16	17	18	
cashfl- Y8	cashfl- Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	Not used	Not used	
1409.78	1437.99	1466.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 126
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 127
24.79	25.77	25.87	-0.00	-0.00	-0.00	-0.00	-0.00	0.00	0.00	L 128
5.01	5.26	5.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 129
34.02	35.04	37.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 130
21.37	22.57	23.29	10.12	10.62	11.15	11.71	12.30	0.00	0.00	L 131
22.36	23.02	23.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 132
76.95	80.80	84.84	89.08	93.53	98.21	103.12	108.28	0.00	0.00	L 133
1595.57	1621.28	1667.88	99.19	104.15	109.36	114.83	120.57	0.00	0.00	L 134
1487.02	1517.99	1549.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 135
23.79	19.19	20.97	3.25	3.41	3.58	3.76	3.95	0.00	0.00	L 136
5.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 137
1628.66	1665.77	1720.35	102.44	107.57	112.94	118.59	124.52	0.00	0.00	L 138
160.54	160.54	140.54	30.92	30.92	30.92	30.92	30.92	0.00	25.40	L 139
1789.20	1826.31	1844.79	133.36	138.48	143.86	149.51	155.45	0.00	25.40	L 140
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 141
1789.20	1826.31	1844.79	133.36	138.48	143.86	149.51	155.45	0.00	25.40	L 142
1510.01	1544.54	1577.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 143
59.60	62.58	65.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 144
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 145

Tabs FRI10 : Subtable local costs; marketing distribution foreign, consolidated

-- COMFAR 2.0 - Project Consultancy GmbH, Mainhausen, FRG -----

9	10	11	12	13	14	15	16	17	18	
cashfl- Y8	cashfl- Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	Not used	Not used	
[illegible]	[illegible]	[illegible]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 146
59.60	62.58	65.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 147
415.04	400.47	447.77	126.36	131.18	136.55	140.21	145.15	0.00	0.00	L 148

Task FRI10 : Suitable sales (= production programme) local

9	10	11	12	13	14	15	16	17	18	
casefl- 09	casefl- 10	casefl-r10	casefl-r11	casefl-r12	casefl-r13	casefl-r14	casefl-r15	Not used	Not used	
1794.05	1880.76	1977.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77
1328.97	1795.08	1485.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78
1328.97	1795.08	1485.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79
1519.67	1595.65	1675.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80
1125.56	1181.96	1241.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81
1125.56	1181.96	1241.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82
548.77	576.21	605.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83
406.30	426.62	448.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84
406.30	426.62	448.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	86
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	89
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	93
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94
7982.49	4185.61	4393.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	95
7981.11	7984.16	7184.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96
7981.11	7984.16	7184.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97

Task FRI10 : Suitable sales (= production programme) consolidated

9	10	11	12	13	14	15	16	17	18	
casefl- 09	casefl- 10	casefl-r11	casefl-r12	casefl-r13	casefl-r14	casefl-r15	casefl-r16	Not used	Not used	
7982.49	4185.61	4393.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98
7981.11	7984.16	7184.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99
7981.11	7984.16	7184.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	101
1281.79	1181.95	1004.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	102
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	103
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105

Table FRI10 : Suitable funds during production, foreign

COMFAR 2.0 - Project Consultancy Bach, Mainhausen, FRG

9	10	11	12	13	14	15	16	17	18	
cashfl-Y8	cashfl-Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	For Calcul	For Calcul	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 155
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 156
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 157
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 158
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 159
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 160
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 161
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	591.12	L 162
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	591.12	L 163
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	575.10	L 164
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 165
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 166
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 167
2.02	2.06	2.10	-107.01	0.00	0.00	0.00	0.00	0.00	0.00	L 168
2.02	2.06	2.10	-107.01	0.00	0.00	0.00	0.00	0.00	0.00	L 169

Table FRI10 : Suitable funds during production, local

COMFAR 2.0 - Project Consultancy Bach, Mainhausen, FRG

9	10	11	12	13	14	15	16	17	18	
cashfl-Y8	cashfl-Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	For Calcul	For Calcul	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 200
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 201
596.49	747.46	795.57	-102.44	-107.57	-112.94	-118.59	-124.52	0.00	1175.73	L 202
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 203
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 204
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 205
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 206
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 207
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 208
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 209
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 210
596.49	747.46	795.57	-102.44	-107.57	-112.94	-118.59	-124.52	0.00	0.00	L 211
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 212
0.89	0.92	0.95	-20.72	0.41	0.43	0.46	0.48	0.00	0.00	L 213
597.37	750.38	796.48	-123.16	-107.15	-112.51	-118.14	-124.04	0.00	0.00	L 214

Table FRI10 : Suitable funds during production, consolidated

COMFAR 2.0 - Project Consultancy Bach, Mainhausen, FRG

9	10	11	12	13	14	15	16	17	18	
cashfl-Y8	cashfl-Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	For Calcul	For Calcul	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 215
596.49	747.46	795.57	-102.44	-107.57	-112.94	-118.59	-124.52	0.00	0.00	L 216
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 217
2.90	2.98	3.05	-127.72	0.41	0.43	0.46	0.48	0.00	0.00	L 218
599.39	750.44	798.53	-230.17	-107.15	-112.51	-118.14	-124.04	0.00	0.00	L 219
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	L 220

Table FRI10 : [illegible] funds income, cashflows, consolidated

--- COMFAR 2.1 - Project Consultancy [illegible] -----

9	10	11	12	13	14	15	16	17	18	
cashfl- Y8	cashfl- Y9	cashfl-Y10	cashfl-Y11	cashfl-Y12	cashfl-Y13	cashfl-Y14	cashfl-Y15	salvage va	for Calcul	
1071.90	1177.35	1309.98	-133.36	-138.45	-143.86	-149.51	-155.45	0.00	-25.40	C 221
-1371.16	-1375.34	-1401.02	-7.30	-7.30	-7.30	-7.30	-7.30	0.00	-25.40	C 222
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C 223
1071.90	1177.35	1309.98	-133.36	-138.45	-143.86	-149.51	-155.45	0.00	0.00	C 224
535.95	588.92	654.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C 225
535.95	588.92	654.99	-133.36	-138.45	-143.86	-149.51	-155.45	0.00	0.00	C 226
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C 227
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C 228
2577.15	2166.09	2321.07	2687.73	2549.22	2405.36	2255.85	2100.40	0.00	0.00	C 229
3112.54	3701.46	4356.45	4222.09	4084.60	3940.74	3791.23	3635.78	0.00	0.00	C 230
2179.99	2270.54	2375.17	102.44	108.50	113.92	119.62	125.60	0.00	0.00	C 231
2561.10	2084.16	2154.77	637.73	0.00	0.00	0.00	0.00	0.00	0.00	C 232
681.12	720.62	779.20	575.27	-108.50	-113.92	-119.62	-125.60	400.95	0.00	C 233
1621.20	2254.97	3024.10	2689.46	2581.97	2447.04	2327.42	2201.82	2605.79	0.00	C 234
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C 235
17.60	18.09	18.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C 236
21.69	22.03	24.81	21.97	-4.27	-4.49	-4.70	-4.94	0.00	0.00	C 237
535.95	588.92	654.99	-133.36	-138.45	-143.86	-149.51	-155.45	0.00	0.00	C 238
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C 239
681.12	720.62	779.20	575.27	-108.50	-113.92	-119.62	-125.60	400.95	0.00	C 240
2179.99	2270.54	2375.17	102.44	108.50	113.92	119.62	125.60	0.00	0.00	C 241
2561.10	2084.16	2154.77	637.73	0.00	0.00	0.00	0.00	0.00	0.00	C 242
681.12	720.62	779.20	575.27	-108.50	-113.92	-119.62	-125.60	0.00	0.00	C 243
3311.82	3744.12	3920.74	4295.69	4250.13	4136.26	4016.64	3891.14	0.00	0.00	C 244
161.54	161.54	161.54	30.92	30.92	30.92	30.92	30.92	0.00	0.00	C 245
50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	0.00	0.00	C 246
535.95	588.92	654.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C 247
3146.75	3162.19	3178.81	2540.74	2541.67	2542.64	2543.67	2544.74	0.00	0.00	C 248

10.4 Comfar Evaluation

I. Construction Phase

1989 will be the year of the construction phase which will take 12 months.

The height of non-variable cost is explained by the fact that DM 370,000.00 are included for know-how fees and supervision of erection and commissioning, which will be fully depreciated in the first year of operation.

On the basis of equity capital, cash is needed in short and medium terms of DM 1,817.000.00 to finance implementation.

II. Income Statement

1,750 units will be manufactured per year.

The increase of sales depends on a 5 % increase of the ex-factory prices over the period of 10 years. Variable margins will increase because of the lower increase of costs for raw materials.

The losses of the first year originate from the full depreciation of know-how fees and supervisory costs.

On the given assumption, the project shows full feasibility from the first year of operation.

From the first year of operation the plant will run at 100 % capacity.

The net profit after taxes accumulates within the project period of 10 years DM DM 3,800,000.00.

The first year's net profit of 8 % will have increased to 15 % in the 10th year of production.

The costs of finance for foreign loans are not any more applicable from the year of 1996. They are compensated by the accumulated profits.

III. Balance Sheet Projections

The projection shows a very sound development over the whole project period of 10 years. On the assumption of full retained profit, long-term debts will be repaid after the 6th year of operation.

Dividends could be distributed on the assumption of a 50 % ratio equity to liabilities from the third year onwards. The cash surplus is based on the loan financing structure.

IV. Cashflow Tables

The cashflow situation of the company will be good.

Cashflow projection shows positive net cashflows in the first year already. Despite large repayments and the total cash needed to start operation, it will have been recovered by mid of the sixth year of operation.

V. Break-Even and Sensitivity

The break-even point is the point at which sales revenues equal production costs.

In this determination cost of finance has been included in the fixed cost.

At 39.2 % capacity utilization, the break-even point will be reached.

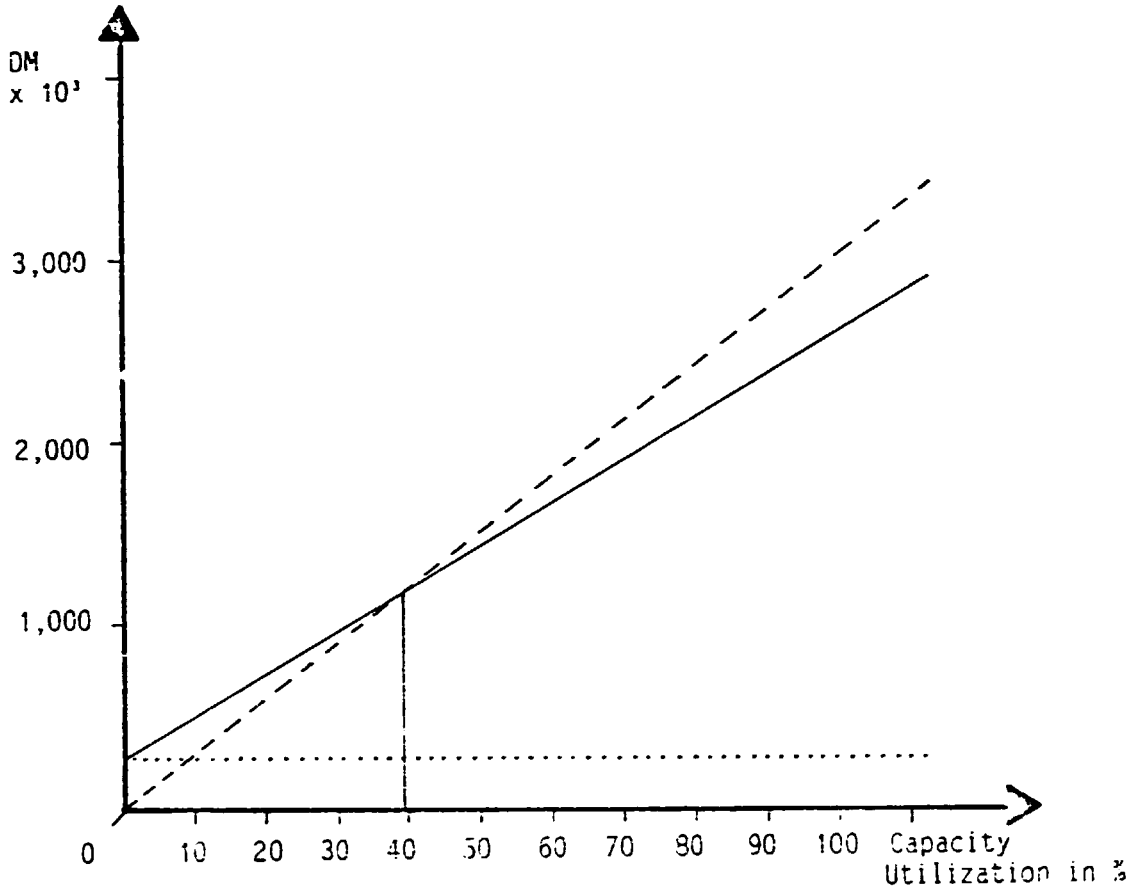
In order to determine the sensitivity of the project, two methods have been applied:

- the variation of prices,
- variation of variable costs.

The charts on the following pages show the results that:

- the project will face losses if the average sales price is lower than DM 1,423.00 per unit;
- the variable costs may exceed the given variable costs by 25 % to reach the BEP at the given quantity.

Break-Even Point



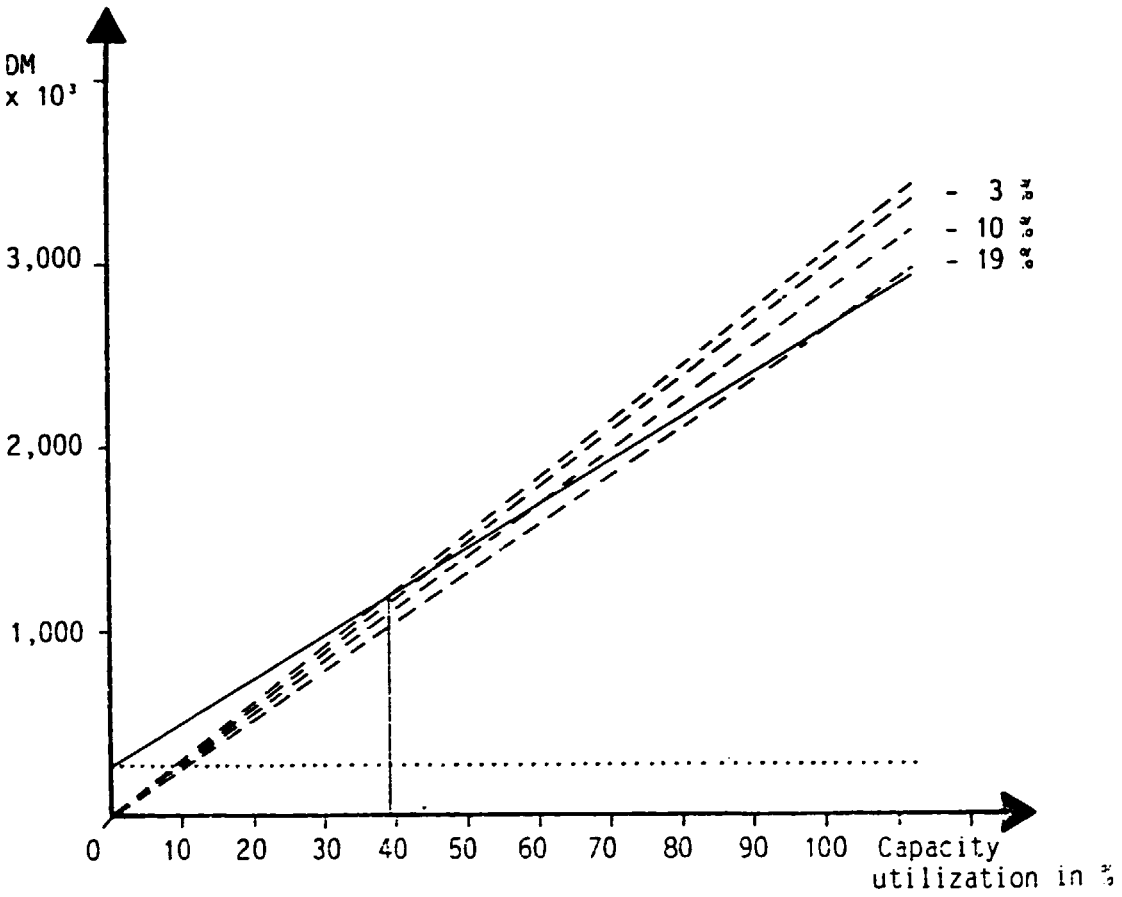
——— Total costs

– – – – – – Annual sales

..... Fixed costs

The break-even point will be reached at 39.2 % utilization of capacity.

Variation of Prices



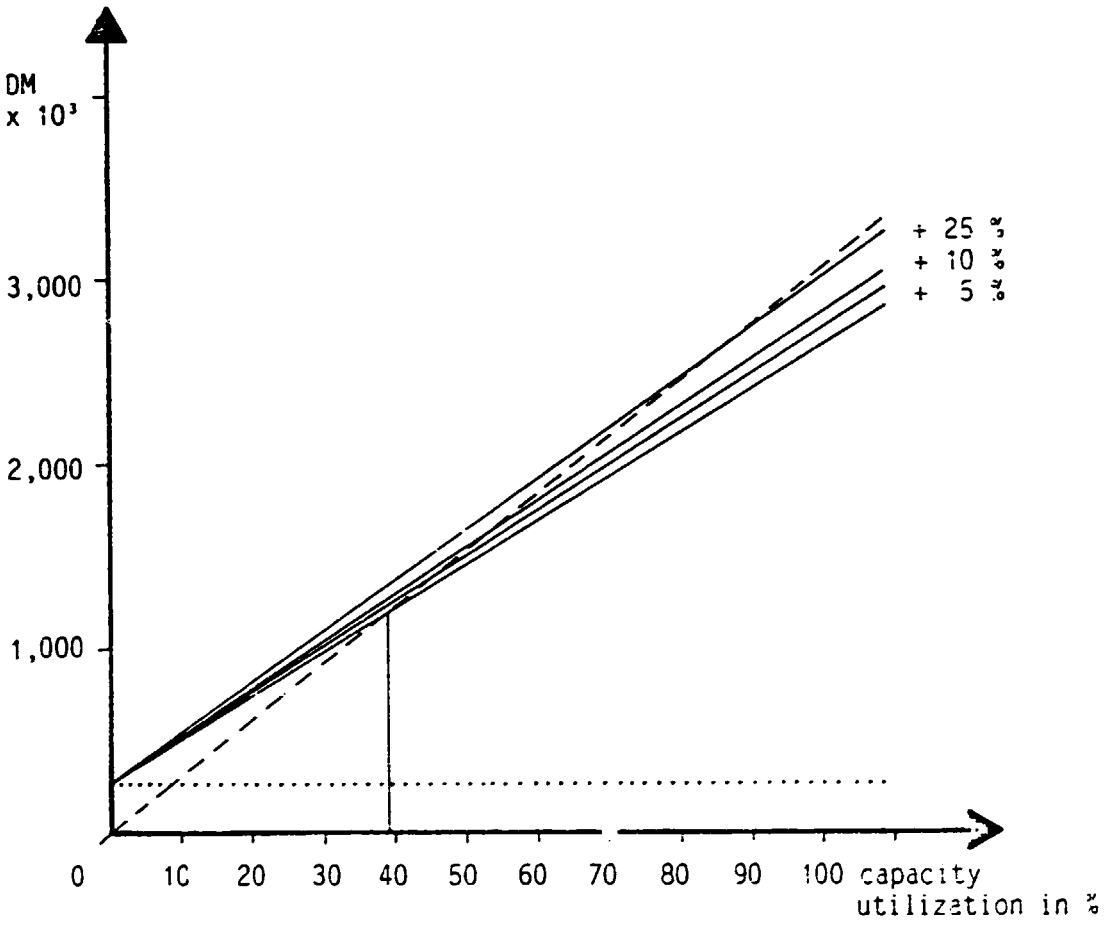
——— Total costs

– – – – – Variation of prices

..... Fixed costs

The average sales price can be lowered by max. 19 %
to reach BEP.
(Basis: year 1992)

Variation of Variable Costs



———— Variation of costs

– – – – – Annual sales

..... Fixed costs

The variable costs may increase by max. 25 % to reach the BEP.

VI. Fiscal Effects

The fiscal effects on the Malawian economy will be positive, measured as net tax income of the government starting from year 2 of production. The main tax contribution will be the corporate tax on profits, the tax on imported raw materials and surtax on the manufactured goods.

VII. Capital Requirements

The total fixed assets amount to DM 3,067,250.00, of which the amount of DM 2,447,550.00 will be required in year 1989.

Apart from the initial investment requirements, foreign currency has to be provided in future mainly for the purchase of raw materials and spare parts, packing material, materials for maintenance, and freight cost or CKD-kits.

VIII. Financing Plan

Based on the input data and the remarks in chapter 9.2, the total given finance will be sufficient in order to establish and run the plant.

The equity - debt ratio 40.8 : 59.2 % as well as the share of the potential Malawian and German promotors 60 : 40 % was established in accordance with the provisional statements of the parties concerned.

IX. Production and Sales Forecast

Beginning with the first year of production (at a 100 % level of production capacity), the annual net sales amount to DM 2,033,330.00 (= MK 2,946,300.00).

The computations for 10 year are based on the assumption of constant production figures (1,750 units per year) and price increases of 5 % per year.

Higher future inflation, which cannot yet be anticipated, will affect production costs in the same manner as sales prices. Increases of costs, therefore, have to be balanced by respective increases of sales prices.

ANNEX 1

GOVERNMENT DEPARTMENTS, MINISTRIES,
INSTITUTIONS, BANKS, PARASTATALS,
INDUSTRIALISTS ETC.
CONTACTED BY THE TEAM

1.	UNDP/UNIDO	Lilongwe 3	Mrs. Leitner, Res. Rep.; Mr. Ganda Mrs. Barsotelli
2.	German Embassy	Lilongwe 3	Dr. van Rossum, Ambassador
3.	Ministry of Trade, Industry & Tourism	Lilongwe 3	Mr. Phiri, P. S.; Mr. Givah, Industr. Dev. Officer; Mr. Chilimgulo
4.	Ministry of Finance (Treasury)	Lilongwe 3	Prof. Chipande
5.	Economic Planning & Development (Office of the President)	Lilongwe 3	Mr. Upindi, P. S.; Mr. Stryk (German Advisor); Mr. Armstrong (British Advisor)

ANNEX 1 continued

6.	Reserve Bank of Malawi	Lilongwe 3	Mr. Sibweza, Dep. Gen. Manager; Mr. Biziwick, Dep. Manager (Exchange Control); Mr. Lomoliwa, Officer Exch. Contr.
7.	Ministry of Works & Supply	Lilongwe 3	Mr. Kundje, Chief Factory Inspector; Mr. Ndini, Inspector
8.	Commissioner of Taxes	Lilongwe	Mr. Chimombo
9.	Chamber of Commerce & Industry of Malawi	Blantyre	Mr. Makunje, Manager
10.	Malawi Bureau of Standards	Blantyre	Mr. H. E. Gaga, Mr. S. Shokotho
11.	Malawi Development Corporation	Blantyre	Mr. Kapa[illegible]la, Mr. Mwaka[illegible]ngula, Mr. A. Jacob (UNIDO expert)
12.	Small Enterprise Development Organization of Malawi (SEDOM)	Blantyre	Mr. Chunga, Gen. Manager; Mr. Jung, Manager Technical Dept.
13.	Investment and Development Bank of Malawi Ltd.	Blantyre	Mr. Mphande, Gen. Manager

ANNEX 1 continued

14.	National Bank of Malawi, Economics Department	Blantyre	Mr. Kalombola, Gen. Manager; Mr. Ku'ujili, Mr. Mkandawire
15.	Electrical Supply Commission of Malawi (ESCOM)	Blantyre	Mr. Uko, Act. Gen. Manager
16.	National Bureau of Statistics	Zomba	Mr. Golosi
17.	Central Government Stores Headquarters	Blantyre	Mr. Chirwa, Controller of Stores
18.	Department of Customs & Excise	Blantyre	Mr. Mzungu, Controller
19.	Central Army Stores	Zomba	
20.	R. F. Fitzsimons Chartered Quantity Surveyor		Mr. Fitzsimons, Mr. Kambalametore
21.	M-Konsult Ltd. Civil Eng.		Mr. Sapao
22.	Southern Bottlers Limited (Coca Cola, Carlsberg Beer)	Blantyre	Mr. Cormack, Chief Executive; Mr. Forbes, Gen. Manager

ANNEX 1 continued

23.	Brown & Clapperton Group	Blantyre	Mr. Wrixon, Dir. and Group Gen. Manager
24.	Hardware & General Dealer Ltd.	Blantyre	Mr. Mamtora, Gen. Manager
25.	Automotive Products Ltd.	Blantyre	Mr. von Ribbeck, Gen. Manager
26.	Superfreeze Ltd.	Blantyre	Mr. Muwamba, Gen. Manager
27.	Comet Ltd.	Blantyre	Mr. K. Okhai, Chairman; Mr. P. Chimbe, Manager
28.	Plastic Products Ltd.	Blantyre	Mr. Kumwenda, General Manager
29.	Webu Company, Metal Fabricators & Manufacturers of Fridges	Blantyre	Mr. Bukhu, Man. Director; Mr. Mlene, Mr. Theu
30.	WTC Freight (Malawi) Ltd.	Blantyre	Mr. Kroeger, Operations Manager

ANNEX 1 continued

31.	City Motors Ltd.	Lilongwe	Mr. Sabadia, Gen. Manager
32.	Malawi New Agency		

ANNEX 2

IMPORTERS, DISTRIBUTORS/RETAILERS
OF FRIDGES AND DEEP FREEZERS
IN THE REPUBLIC OF MALAWI

BLANTYRE / LIMBE

1.	Radio & Electric Services Ltd.	Blantyre	(Okhai Group)
2.	Okhai Electronics Ltd.	Limbe	
3.	Hardware & General Dealers	Blantyre	
4.	City Service	Limbe	
5.	Overglo Electric Co. (Malawi) Ltd.	Blantyre	(Brown & Clapperton Group)
6.	Noor Agencies Ltd.	Limbe	(Swedish)
7.	Automotive Products Ltd.	Blantyre	(Jos. Hansen & Soehne, Hamburg)
8.	Ross D. & Co. Ltd.	Blantyre	(British)

ANNEX 2 continued

LILONGWE

1. Brown & Clapperton
2. Delta Corporation
3. Khuma Ways Agencies
4. Hardware & General Dealers Ltd.
5. Radio & Electric Services Ltd.
6. H. H. Wholesalers (Agstil Hardware)
7. Bhedas Ltd.
8. Gabrol Ltd.

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11. Transport Statistics 1985
National Statistical Office, Zomba
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12. Economic Report 1988
Office of the President and Cabinet
(Department of Economic Planning and Development)
Budget Document No. 4
March 1988

13. A Guide for Prospective Investors
Ministry of Trade, Industry and Tourism, Lilongwe
June 1985

14. Department of Customs and Excise
Guide to Importers (Part A - D)
Industrial Rebates and Drawbacks
(Appendix A, Cap. 42 : 01)

15. Customs and Excise (Tariffs)
Order 1987, Government Notice 48
Customs and Excise Act (Cap. 42 : 01)
Chapter 84

16. Ministry of Works and Supplies
Factories Regulations Chapter 55 : 07
Lilongwe 1985

17. Investment & Development Bank of Malawi Limited
Annual Report and Accounts 1986

18. National Bank of Malawi
Annual Report 1986

19. Malawi Development Corporation
Annual Report 1985

20. Malawi Development Organization
Information Guide on Investment
Criteria and Terms

21. Electrical Supply Commission of Malawi (ESCOM)
Annual Report 1985

22. Aide Memoire
for the Preparation of SADCC
Industry Programme -
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23. Deutsche Finanzierungsgesellschaft
für Beteiligungen in Entwicklungsländern GmbH (DEG)
"Joint Ventures in Developing Countries"
March 1986

24. Manual for the Preparation of Industrial
Feasibility Studies
United Nations Industrial Development Organization
Vienna 1986

25. Bundesstelle für Aussenhandelsinformation
Malawi - Kurzmerkblatt und Wirtschaftslage