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# UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

VIENNA, AUSTRIA

AND

# ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

RABAT, MOROCCO

## PROJECT PROFILE

## ON

## BARE WIRES

FINAL REPORT


DEVELOPMENT CONSULTANTS INTERNATIONAL LIMITED

MANAGEMENT CONSULTANCY DIVISION

24-B PARK STREET, CALCUTTA 700 016, INDIA

# PROJECT PROFILE
# ON
# BARE WIRES

FEBRUARY 1996

DEVELOPMENT CONSULTANTS INTERNATIONAL LIMITED
MANAGEMENT CONSULTANCY DIVISION

DEVELOPMENT CONSULTANTS INTERNATIONAL LIMITED

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DCIL-105/AC-5/1100

February 27, 1996

United Nations Industrial
Development Organisation
Vienna International Centre
P.O. Box 300
A-1400 Vienna
Austria

Attn : Mr V. Koloskov

Project Profile on Bare Wires

Dear Sirs :

We take pleasure in submitting to you twenty (20) copies of our Final Report on the above subject.

We trust that you will find the present report useful and responsive to your requirement.

We look forward to further association with your organisation in future.

Thanking you,

Very truly yours :
DEVELOPMENT CONSULTANTS
INTERNATIONAL LIMITED

Siddhartha Ganguly
Project Coordinator

# INDEX

**INDEX : TEXT**

# INDEX : EXHIBITS

## LIST OF ABBREVIATIONS

| | |
|---|---|
| AAC | All Aluminium Conductor |
| ACSR | Aluminium Conductor Steel Reinforced |
| ASTM | American Society for Testing and Materials |
| AWG | American Wire Gauge |
| BS | British Standards |
| CIF | Cost, Insurance and Freight |
| DPR | Detailed Project Report |
| EC | Electrical Conductor |
| EOT | Electric Overhead Travelling |
| FOB | Free on Board |
| HV | High Voltage |
| Hz | Hertz |
| IEC | International Electrotechnical Commission |
| IRR | Internal Rate of Return |
| Km | Kilometre |
| KVA | Kilovolt Ampeare |
| LV | Low Voltage |
| m | Metre |
| mm | Milimetre |
| MT | Metric Tonne |
| MV | Medium Voltage |
| MW | Megawatt |
| p.a. | Per Annum |
| Sqm | Square metre |
| TPA | Tonnes per annum |
| TR | Tonnes Rating |
| UAE | United Arab Emirates |
| UHV | Ultra High Voltage |
| V | Volt |
| °C | Centrigrade |

# SECTION - 1
# INTRODUCTION

## INTRODUCTION

The Sixth Arab Industrial Development Conference held in Damascus in October 1984, stressed on the importance of setting up facilities in the Arab region for manufacture of products used in electricity generation, transmission and distribution. Subsequently, the Arab Industrial Development & Mining Organization (AIDMO), prepared a Sectoral Report on the status of electricity generation, growth prospects in the region and requirement of equipment/facilities thereof. The study covered 21 Arab countries for the period 1986-2010 AD.

Based on the findings of the Sectoral study, the AIDMO in consultation with United Nations Industrial Development Organization (UNIDO), shortlisted 8 products for which it wanted to get project profiles prepared. One of the designated products is **Bare Wires**. The objective of the project profile is to provide sufficient information so that prospective promoters and sponsors find themselves in a position to evaluate the project.

The Scope of Work for this Project Profile includes the following :

- Description, special characteristics, features and uses of the product
- Identification of major end-user industries
- Assessment of present capacity
- Assessment of supply and demand for the product in the designated region

- Identification of demand-supply gap and evaluation of the possibility of entering the market
- Description of basic manufacturing process
- Process flow chart
- Brief specifications of plant and machinery, and their indicative prices
- Estimated requirements of raw materials, their sources and prices
- Estimated requirements of utilities such as power, water, compressed air, fuel oil, etc.
- Estimated requirement of manpower
- Estimated requirement of space, and plant layout
- Plant location
- Project cost estimate
- Project financial analysis and evaluation
- Project implementation schedule

This study is confined to the following 13 countries -

| | |
|---|---|
| Algeria | Bahrain |
| Egypt | Iraq |
| Jordan | Kuwait |
| Libya | Morocco |
| Saudi Arabia | Sudan |
| Syria | Tunisia |
| U.A.E. | |

A separate market survey, according to the AIDMO, was not required to be carried out prior to preparing this project profile, since the information and projections contained in the Sectoral study conducted by them was indicated to be adequate for the purpose. Therefore, the Section on 'Market Analysis' is based entirely on the Sectoral study carried out by the AIDMO.

The contents of this Report have been organised in a manner as to present the reader with a logical sequence of analysis and findings.

Salient features of the project have been summarised in the following Section. The Section presented thereafter describes the product with a view to familiarise the reader with its features, characteristics and uses. The Section on 'Market Analysis' provides demand projections. Plant capacities and recommended locations for establishing the proposed manufacturing facilities are discussed in the next Section.

Manufacturing process is dealt with in a separate Section, titled 'Manufacturing Process'. This is followed by a Section on 'Plant and Equipment'. Estimates of raw materials and other inputs, requirement of utilities, and estimates of space and layout are presented in separate Sections. These are followed by a Section on estimated requirement of manpower and the recommended organisation structure.

# SECTION - 2
# SUMMARY OF FINDINGS

## SUMMARY OF FINDINGS

Our findings show that 5 plants may be set up in order to cater to the demand for AAC and ACSR types of conductors in the designated region. We recommend that these plants be set up in

- Morocco
- Bahrain
- Kuwait
- Iraq
- Syria

Each of these plants shall have capacities of about 16,000 tonnes per annum. In terms of kilometres, the capacities may vary from around 28,000 to 60,000 Km per annum depending on the product-mix. Since the estimated demand for UHV conductors does not justify installation of special machinery in all the plants, it is recommended that UHV conductors be manufactured only at the plant in Bahrain. Since drawing of steel wires may turn out to be an expensive proposition, it is proposed that galvanised steel core wires of required diameter be purchased from external suppliers. Stranded steel cores, too, may be procured from outside.

Our findings reveal that with the increase in power consumption, the overhead transmission network would be expanded, justifying the establishment of these plants.

Summary of basic parameters and significant features of the project is presented in Exhibit-1.

JOB NO. : DCIL-105 EXHIBIT : 1

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### SUMMARY OF FINDINGS

| Sl. No. | Particulars | Plant 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Location | Morocco | Bahrain | Kuwait | Iraq | Syria |
| 2 | Plant Capacity | | | | | |
| | - TPA | 17600 | 15900 | 15600 | 15200 | 16900 |
| | - KM | 53500 | 27700 | 49900 | 49800 | 60500 |
| 3 | Area Requirement (sq mts) | 21600 | 21600 | 21600 | 21600 | 21600 |
| 4 | Manpower Requirement (Nos) | 138 | 138 | 138 | 138 | 138 |
| 5 | Implementation Period (Months) | 27 | 27 | 27 | 27 | 27 |
| 6 | Project Cost ($ million) | 10.69 | 11.45 | 11.99 | 13.40 | 10.56 |
| 7 | Break-Even Point (%) | 24.30 | 30.10 | 46.90 | 38.40 | 28.40 |
| 8 | IRR (%) | 73.50 | 84.50 | 61.80 | 72.50 | 93.20 |

# SECTION - 3
# PRODUCT ANALYSIS

## PRODUCT ANALYSIS

Bare wire conductors are used for overhead transmission and distribution of electrical energy. These conductors are manufactured in various shapes and forms like round wires, flat strips, square or rectangular bars, etc.

These conductors may consist of a single solid wire or a bunch of stranded wires. Stranded conductors are extensively used because of their flexibility and consequent ease in handling. Greater the number of wires in any cross section, more will be the flexibility of the finished conductor. Most conductors above 4/0 AWG size are stranded.

Some of the important electrical properties of conductors are :

- Resistivity
- Current carrying capacity
- Inductance
- Capacitance
- Corona effect

Conductivity is the inverse of resistivity. Both these depend on the material of which the conductor is made and the temperature, while the other properties depend on the material, the shape of the conductor and the environment of work.

The current rating of overhead line conductors is obtained by equating the sum total of heat generated in the conductor due to the flow of current and the heat absorbed from the sun, to the heat lost by convection and radiation.

The voltage drop is also an important factor for the determination of the current rating of an overhead conductor.

Conductor capacitance leakage and Corona effect of an overhead transmission system are afffected by factors such as distance between conductors, shape of the conductor, magnitude and frequency of current, working environment and dielectric property of the insulator being used.

In addition to these electrical requirements, conductors should be able to withstand mechanical stress. Higher mechanical strength of the conductor enables longer spans and use of fewer number of supports, thereby making overhead transmission economical. In order to withstand other environmental conditions like rise in temperature, wind pressure, snow, etc., the conductor should have high tensile strength, high elasticity, low specific weight and low co-efficient of linear expansion.

The electrical and physical properties of various conductor materials are given in Exhibit-2.

**TYPES OF CONDUCTORS**

Conductors are classified according to their material of consutruction. The most commonly used conductors are -

- o Aluminium Conductor Steel Reinforced (ACSR)
- o All Aluminium Conductor (AAC)
- o Copper Conductor

ACSR : This conductor has a galvanised steel core, which is surrounded by stranded aluminium wires. The conductors are manufactured in conformity with specifications such as BS 215 or ASTM B549. ASTM specifications for these conductors are given in Exhibit-3.

The main advantage of steel reinforced aluminium conductors is their high tensile strength and low weight. This results in smaller sags, which permits longer spans. Hence, fewer number of supports are required for these conductors.

**AAC** : These conductors are constructed of heat treated aluminium-magnesium-silicon alloy wires containing approximately 0.5% magnesium and 0.5% silicon. They conform to BS 3242 or ASTM B396/B398 specifications. ASTM specifications for these conductors are given in Exhibit-4.

AACs are used where the span normally does not exceed 150 ft. They also find application when the tension in the line is to be kept low, as in the case of low and medium voltage transmission.

**Copper Conductor** : Hard drawn copper wires of identical diameter, conforming to BS 125 or ASTM B1/B105, are stranded together to manufacture copper conductors. Copper conductors have relatively low line tension resulting in large sags. This limitation coupled with the relatively high cost of copper have led to a gradual replacement of copper conductors by aluminium conductors.

All Aluminium Alloy Conductor (BS 3242, IEC 208), and All Aluminium Alloy Conductor Steel Reinforced (IEC 210) are the other two types of aluminium-based conductors which also find application.

**CONSTRUCTION OF STRANDED CONDUCTORS**

Stranded conductors have a core comprising one or more wires around which wires of the same or different material are wound in the form of continuous helices. Core wires are made of steel, aluminium, copper or alloys of these materials.

Stranding results in a marginal increase in weight and electrical resistance, and decrease in tensile strength. The number of strands in a conductor depends on whether the conductor is of single core construction or of three-wire core construction.

**CONDUCTOR MATERIALS**

Aluminium and copper are most commonly used for manufacture of conductors. Factors that favour the choice of material are low weight, high mechanical strength, low resistivity and low cost of material. In order to get the required properties which are usually not present in the base metal, some alloying elements/reinforcing materials are used with the base metal.

The choice of a conductor from the mechanical viewpoint depends on external loading conditions such as wind speed, ice loading and ambient temperature, and on internal conditions such as stranding, modulus of elasticity, thermal expansion and creep. For lines of 33 KV and above, hard drawn AAC is generally not used. ACSR is preferred in such cases since they are cheaper and have better creep resistance. A wide range of breaking strength to weight ratio can be achieved by modifying the aluminium and steel contents and by using aluminium alloy strands wherever conditions so demand.

**BUNDLE CONDUCTORS**

An increase in the geometric mean radius of an overhead conductor reduces the inductance and increases the capacitance, thereby raising the power transmission capability of the line. The extent to which thickness of the

conductor may be increased is, however, limited by factors like the necessity of heavier supports, larger sags, shorter distance between the towers, etc. In order to overcome these limitations, bundle conductors can be used instead of a single conductor. Bundle conductors consist of two or more spaced sub-conductors per phase, which effectively increases the geometric mean radius.

Bundle conductors have the following advantages :

- Reduced inductance and increased capacitance which improve the surge impedance loading. This raises the power transmission capability of long lines.
- Higher thermal rating, because of larger cooling surface area compared to that of a single conductor which has the same total cross-sectional area.
- Reduction in Corona loss and radio interference due to lower surface voltage gradient

Their main disadvantages are an occasionally inferior aerodynamic performance and the occurrence of inter-bundle oscillations between sub-conductor spacers. However, these can be controlled by judicious arrangement of spacers and spacer-dampers.

JOB NO. : DCIL-105

EXHIBIT : 2

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
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PROJECT PROFILE ON BARE WIRES

ELECTRICAL AND PHYSICAL PROPERTIES OF CONDUCTOR MATERIALS

| Conductor Material | Conductivity % IACS, min at 0°C | Resistivity (Ohms) cmil/ft 20°C | cmil/ft 25°C | mm²/m 20°C | mm²/m 25°C | Temp Coefficient of Resistance per °C 20°C | 25°C | Weight at 20 °C (g/cm³) | Coefficient of Linear Expansion per °C x 10⁻⁶ | Modulus of Elasticity (kg/mm²) |
|---|---|---|---|---|---|---|---|---|---|---|
| Commercial 1350 aluminium wire | 61.0 | 17.002 | 17.345 | 0.028264 | 0.028834 | 0.00403 | 0.00395 | 2.703 | 2.30 | 7030 |
| Aluminium alloy wire 6201 | 52.5 | 19.754 | 20.097 | 0.032840 | 0.033373 | 0.00347 | 0.00340 | 2.703 | 2.30 | 7030 |
| Commercial hard drawn copper wire | 97.0 | 10.692 | 10.895 | 0.017774 | 0.018113 | 0.00381 | 0.00374 | 8.89 | 1.69 | 11950 |
| Standard annealed copper wire | 100.0 | 10.371 | 10.575 | 0.017241 | 0.017579 | 0.00393 | 0.00385 | 8.89 | 1.69 | 11950 |
| Aluminium coated steel core wire | 9.0* | 115.23* | - | 0.19157* | - | - | - | 7.78 | 1.15 | 20400 |
| Zinc coated steel core wire | 9.0* | 115.23* | - | 0.19157* | - | - | - | 7.78 | 1.15 | 20400 |
| Aluminium clad steel core wire | 20.33 | 51.01 | 51.52 | 0.0848 | 0.08563 | 0.0036 | 0.00356 | 6.59 | 1.30 | 16500 |

Note - * Typical IACS - International Annealed Copper Standard

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 3

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

ASTM SPECIFICATIONS : ALUMINIUM CONDUCTOR STEEL REINFORCED

| Code Word | Size (Circular Mills or AWG) | Stranding | | Cross Section (square inches) | | Outside Diameter (inches) | Weight per 1000 Feet (lbs) | | | Per Cent Weight | | Ultimate Strength | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Aluminium | Steel | Aluminium | Total | | Total | Aluminium | Steel | Aluminium | Steel | Stranded Weight Coating | B. Coating Aluminised | C. Coating |
| TURKEY | 6 | 6x.0661 | 1x.0661 | .0206 | .0240 | .198 | 36.1 | 24.5 | 11.6 | 67.90 | 32.10 | 1,170 | 1,170 | 1,150 |
| THRUSH | 5 | 6x.0743 | 1x.0743 | .0260 | .0303 | .223 | 45.5 | 30.9 | 14.6 | 67.90 | 32.10 | 1,460 | 1,460 | 1,440 |
| SWAN | 4 | 6x.0834 | 1x.0834 | .0328 | .0383 | .250 | 57.4 | 39.0 | 18.4 | 67.90 | 32.10 | 1,830 | 1,830 | 1,810 |
| SWANATE | 4 | 7x.0772 | 1x.1029 | .0328 | .0411 | .257 | 67.0 | 38.9 | 28.1 | 58.13 | 41.87 | 2,288 | 2,245 | 2,205 |
| SWALLOW | 3 | 6x.0937 | 1x.0937 | .0413 | .0482 | .281 | 72.4 | 49.2 | 23.2 | 67.90 | 32.10 | 2,250 | 2,220 | 2,190 |
| SPARROW | 2 | 6x.1052 | 1x.1052 | .0521 | .0608 | .316 | 91.3 | 62.0 | 29.3 | 67.90 | 32.10 | 2,790 | 2,745 | 2,705 |
| SPARATE | 2 | 7x.0974 | 1x.1299 | .0521 | .0653 | .325 | 106.7 | 62.0 | 44.7 | 58.13 | 41.87 | 3,525 | 3,385 | 3,255 |
| ROBIN | 1 | 6x.1182 | 1x.1182 | .0657 | .0767 | .355 | 115.2 | 78.2 | 37.0 | 67.90 | 32.10 | 3,480 | 3,440 | 3,380 |
| RAVEN | 1/0 | 6x.1327 | 1x.1327 | .0829 | .0967 | .398 | 145.2 | 98.6 | 46.6 | 67.90 | 32.10 | 4,280 | 4,140 | 4,000 |
| QUAIL | 2/0 | 6x.1490 | 1x.1490 | .1045 | .1219 | .447 | 183.1 | 124.3 | 58.8 | 67.90 | 32.10 | 5,345 | 4,910 | 4,820 |
| PIGEON | 3/0 | 6x.1672 | 1x.1672 | .1318 | .1538 | .502 | 230.8 | 156.7 | 74.1 | 67.90 | 32.10 | 6,675 | 6,135 | 6,020 |
| PENGUIN | 4/0 | 6x.1878 | 1x.1878 | .1662 | .1939 | .563 | 291.1 | 197.7 | 93.4 | 67.90 | 32.10 | 8,420 | 7,730 | 7,590 |
| WAXWING | 266,800 | 18x.1217 | 1x.1217 | .2095 | .2211 | .609 | 290.0 | 251 | 39.0 | 86.45 | 13.55 | 6,830 | 6,715 | 6,600 |
| PARTRIDGE | 266,800 | 26x.1013 | 7x.0788 | .2095 | .2436 | .642 | 367.0 | 252 | 115 | 68.53 | 31.47 | 11,250 | 11,250 | 11,075 |
| OSTRICH | 300,000 | 26x.1074 | 7x.0835 | .2356 | .2740 | .680 | 413.0 | 283 | 130 | 68.53 | 31.47 | 12,650 | 12,650 | 12,450 |
| MERLIN | 336,400 | 18x.1367 | 1x.1367 | .2642 | .2789 | .684 | 365.0 | 316 | 49 | 86.45 | 13.55 | 8,625 | 8,480 | 8,333 |
| LINNET | 336,400 | 26x.1138 | 7x.0885 | .2642 | .3072 | .721 | 463.0 | 317 | 146 | 68.53 | 31.47 | 14,050 | 14,050 | 13,830 |
| ORIOLE | 336,400 | 30x.1059 | 7x.1059 | .2642 | .3259 | .741 | 527.0 | 318 | 209 | 60.35 | 39.65 | 17,040 | 16,740 | 16,430 |
| CHICKADEE | 397,500 | 18x.1486 | 1x.1486 | .3122 | .3295 | .743 | 432.0 | 373 | 59 | 86.45 | 13.55 | 10,035 | 9,603 | 9,516 |
| BRANT | 397,500 | 24x.1287 | 7x.0858 | .3122 | .3525 | .772 | 512.0 | 375 | 137 | 73.23 | 26.77 | 14,700 | 14,660 | 14,460 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 3

| Code Word | Size (Circular Mills or AWG) | Stranding | | Cross Section (square inches) | | Outside Diameter (inches) | Weight per 1000 Feet (lbs) | | | Per Cent Weight | | Ultimate Strength | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Aluminium | Steel | Aluminium | Total | | Total | Aluminium | Steel | Aluminium | Steel | Stranded Weight Coating | B. Coating Aluminised | C. Coating |
| IBIS | 397,500 | 26x.1236 | 7x.0961 | .3122 | .3630 | .783 | 547.0 | 375 | 172 | 68.53 | 31.47 | 16,190 | 15,930 | 15,680 |
| LARK | 397,500 | 30x.1151 | 7x.1151 | .3122 | .3850 | .806 | 623.0 | 376 | 247 | 60.35 | 39.65 | 19,980 | 19,600 | 19,240 |
| PELICAN | 477,000 | 18x.1628 | 1x.1628 | .3746 | .3954 | .814 | 518.0 | 448 | 70 | 86.45 | 13.55 | 11,870 | 11,350 | 11,245 |
| FLICKER | 477,000 | 24x.1410 | 7x.0940 | .3746 | .4232 | .846 | 615.0 | 450 | 165 | 73.23 | 26.77 | 17,200 | 16,950 | 16,700 |
| HAWK | 477,000 | 26x.1355 | 7x.1054 | .3746 | .4356 | .858 | 657.0 | 450 | 207 | 68.53 | 31.47 | 19,430 | 19,100 | 18,820 |
| HEN | 477,000 | 30x.1261 | 7x.1261 | .3746 | .4620 | .883 | 747.0 | 451 | 296 | 60.35 | 39.65 | 23,300 | 22,500 | 21,600 |
| OSPREY | 556,500 | 18x.1758 | 1x.1758 | .4371 | .4614 | .879 | 604.0 | 522 | 82 | 86.45 | 13.55 | 13,850 | 13,245 | 13,125 |
| PARAKEET | 556,500 | 24x.1523 | 7x.1015 | .4371 | .4938 | .914 | 717.0 | 525 | 192 | 73.23 | 26.77 | 19,850 | 19,550 | 19,300 |
| DOVE | 556,500 | 26x.1463 | 7x.1138 | .4371 | .5083 | .927 | 766.0 | 525 | 241 | 68.53 | 31.47 | 22,400 | 22,100 | 21,700 |
| EAGLE | 556,500 | 30x.1362 | 7x.1362 | .4371 | .5391 | .953 | 872.0 | 526 | 346 | 60.35 | 39.65 | 27,200 | 26,200 | 25,200 |
| PEACOCK | 605,000 | 24x.1588 | 7x.1059 | .4752 | .5368 | .953 | 780.0 | 571 | 209 | 73.23 | 26.77 | 21,500 | 21,250 | 20,950 |
| SQUAB | 605,000 | 26x.1525 | 7x.1186 | .4752 | .5525 | .966 | 833.0 | 571 | 262 | 68.53 | 31.47 | 24,100 | 23,800 | 23,400 |
| WOODDUCK | 605,000 | 30x.1420 | 7x.1420 | .4752 | .5861 | .994 | 948.0 | 572 | 376 | 60.35 | 39.65 | 29,400 | 26,610 | 26,060 |
| TEAL | 605,000 | 30x.1420 | 19x.0852 | .4752 | .5835 | .994 | 940.0 | 572 | 368 | 60.89 | 39.11 | 30,000 | 30,000 | 29,500 |
| KINGBIRD | 636,000 | 18x.1880 | 1x.1880 | .4995 | .5272 | .940 | 690.0 | 597 | 93 | 86.45 | 13.55 | 15,820 | 15,130 | 14,990 |
| ROOK | 636,000 | 24x.1628 | 7x.1085 | .4995 | .5643 | .977 | 819.0 | 600 | 219 | 73.23 | 26.77 | 22,600 | 22,300 | 22,000 |
| GROSBEAK | 636,000 | 26x.1564 | 7x.1216 | .4995 | .5809 | .990 | 875.0 | 600 | 275 | 68.53 | 31.47 | 25,000 | 24,200 | 23,400 |
| SCOTER | 636,000 | 30x.1456 | 7x.1456 | .4995 | .6161 | 1.019 | 993.0 | 599 | 394 | 60.35 | 39.65 | 30,800 | 27,950 | 27,400 |
| EGRET | 636,000 | 30x.1456 | 19x.0874 | .4995 | .6135 | 1.019 | 988.0 | 602 | 386 | 60.89 | 39.11 | 31,500 | 31,500 | 31,000 |
| FLAMINGO | 636,000 | 24x.1667 | 7x.1111 | .5235 | .5914 | 1.000 | 858.0 | 628 | 230 | 73.23 | 26.77 | 23,700 | 23,400 | 23,000 |
| GANNET | 666,600 | 26x.1601 | 7x.1245 | .5235 | .6037 | 1.014 | 917.0 | 628 | 289 | 68.53 | 31.47 | 26,200 | 24,590 | 23,790 |
| STILT | 715,500 | 24x.1727 | 7x.1151 | .5620 | .6348 | 1.036 | 922.0 | 675 | 247 | 73.23 | 26.77 | 25,500 | 25,140 | 24,770 |
| STARLING | 715,500 | 26x.1659 | 7x.1290 | .5620 | .6535 | 1.051 | 985.0 | 675 | 310 | 68.53 | 31.47 | 28,100 | 27,200 | 26,300 |
| REDWING | 715,500 | 30x.1544 | 19x.0926 | .5620 | .6901 | 1.081 | 1,111 | 676 | 435 | 60.89 | 39.11 | 34,600 | 34,000 | 33,300 |
| CUCKOO | 795,000 | 24x.1820 | 7x.1213 | .6244 | .7053 | 1.092 | 1,023 | 749 | 274 | 73.23 | 26.77 | 27,950 | 27,130 | 26,320 |

JOB NO. : DCIL-105

EXHIBIT : 3

| Code Word | Size (Circular Mils or AWG) | Stranding | | Cross Section (square inches) | | Outside Diameter (inches) | Weight per 1000 Feet (lbs) | | | Per Cent Weight | | Ultimate Strength | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Aluminium | Steel | Aluminium | Total | | Total | Aluminium | Steel | Aluminium | Steel | A. Stranded Weight Coating | B. Coating Aluminised | C. Coating |
| DRAKE | 795,000 | 26x.1749 | 7x.1360 | .6244 | .7261 | 1.108 | 1,094 | 750 | 344 | 68.53 | 31.47 | 31,200 | 30,200 | 29,200 |
| TERN | 795,000 | 45x.1329 | 7x.0886 | .6244 | .6676 | 1.063 | 896 | 750 | 146 | 83.69 | 16.31 | 22,900 | 22,900 | 22,700 |
| CONDOR | 795,000 | 54x.1214 | 7x.1214 | .6244 | .7053 | 1.093 | 1,024 | 750 | 274 | 73.25 | 26.75 | 28,500 | 27,700 | 26,900 |
| MALLARD | 795,000 | 30x.1628 | 19x.0977 | .6244 | .7668 | 1.140 | 1,235 | 752 | 483 | 60.89 | 39.11 | 38,400 | 37,700 | 37,000 |
| RUDDY | 900,000 | 45x.1414 | 7x.0943 | .7066 | .7555 | 1.131 | 1,015 | 849 | 166 | 83.69 | 16.31 | 25,400 | 25,100 | 24,900 |
| CANARY | 900,000 | 54x.1291 | 7x.1291 | .7069 | .7985 | 1.162 | 1,159 | 849 | 310 | 73.25 | 26.75 | 32,300 | 31,400 | 30,500 |
| RAIL | 954,000 | 45x.1456 | 7x.0971 | .7493 | .8011 | 1.165 | 1,075 | 900 | 175 | 83.69 | 16.31 | 26,900 | 26,600 | 26,400 |
| CARDINAL | 954,000 | 54x.1329 | 7x.1329 | .7493 | .8463 | 1.196 | 1,229 | 900 | 329 | 73.25 | 26.75 | 34,200 | 33,300 | 32,300 |
| ORTOLAN | 1033,500 | 45x.1516 | 7x.1011 | .8117 | .8678 | 1.213 | 1,165 | 975 | 190 | 83.69 | 16.31 | 28,900 | 28,600 | 28,300 |
| CURLEW | 1033,500 | 54x.1384 | 7x.1384 | .8117 | .9169 | 1.246 | 1,331 | 975 | 356 | 73.25 | 26.75 | 37,100 | 36,000 | 35,000 |
| BLUE JAY | 1113,000 | 45x.1573 | 7x.1049 | .8741 | .9346 | 1.259 | 1,255 | 1,050 | 205 | 83.69 | 16.31 | 30,900 | 30,600 | 30,300 |
| FINCH | 1113,000 | 54x.1436 | 19x.0862 | .8741 | .9849 | 1.293 | 1,431 | 1,055 | 376 | 73.75 | 26.25 | 40,200 | 40,200 | 39,700 |
| BUNTING | 1192,500 | 45x.1628 | 7x.1085 | .9366 | 1.001 | 1.302 | 1,344 | 1,125 | 219 | 83.69 | 16.31 | 33,200 | 32,800 | 32,500 |
| GRACKLE | 1192,500 | 54x.1486 | 19x.0892 | .9366 | 1.055 | 1.333 | 1,533 | 1,131 | 402 | 73.75 | 26.25 | 43,100 | 43,100 | 43,000 |
| BITTERN | 1272,000 | 45x.1681 | 7x.1121 | .9990 | 1.068 | 1.345 | 1,434 | 1,200 | 234 | 83.69 | 16.31 | 35,000 | 35,000 | 34,700 |
| PHEASANT | 1272,000 | 54x.1535 | 19x.0921 | .9990 | 1.126 | 1.382 | 1,635 | 1,206 | 429 | 73.75 | 26.25 | 44,800 | 44,200 | 43,600 |
| DIPPER | 1351,500 | 45x.1733 | 7x.1151 | 1.061 | 1.135 | 1.386 | 1,523 | 1,275 | 248 | 83.69 | 16.31 | 37,600 | 37,200 | 36,800 |
| MARTIN | 1351,500 | 54x.1582 | 19x.0949 | 1.061 | 1.196 | 1.424 | 1,737 | 1,281 | 456 | 73.75 | 26.25 | 47,600 | 47,000 | 46,300 |
| BOBOLINK | 1431,000 | 45x.1783 | 7x.1189 | 1.124 | 1.202 | 1.427 | 1,613 | 1,350 | 263 | 83.69 | 16.31 | 39,800 | 39,400 | 39,000 |
| PLOVER | 1431,000 | 54x.1628 | 19x.0977 | 1.124 | 1.266 | 1.465 | 1,840 | 1,357 | 483 | 73.75 | 26.25 | 50,400 | 49,700 | 49,000 |
| NUTHATCH | 1510,500 | 45x.1832 | 7x.1221 | 1.186 | 1.268 | 1.466 | 1,702 | 1,424 | 278 | 83.69 | 16.31 | 41,600 | 40,700 | 39,900 |
| PARROT | 1510,500 | 54x.1675 | 19x.1004 | 1.186 | 1.337 | 1.506 | 1,942 | 1,432 | 510 | 73.75 | 26.25 | 53,200 | 52,500 | 51,800 |
| LAPWING | 1590,000 | 45x.1878 | 7x.1252 | 1.249 | 1.335 | 1.502 | 1,792 | 1,500 | 292 | 83.69 | 16.31 | 43,800 | 42,700 | 41,800 |
| FALCON | 1590,000 | 54x.1716 | 19x.1030 | 1.249 | 1.407 | 1.545 | 2,044 | 1,507 | 537 | 73.75 | 26.25 | 56,000 | 55,200 | 54,400 |
| GROOSE | 80,000 | 8x.1000 | 1x.1670 | .0628 | .0847 | .367 | 149.0 | 75.3 | 73.7 | 50.56 | 49.44 | 5,200 | 4,655 | 4,550 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 3

| Code Word | Size (Circular Mills or AWG) | Stranding | | Cross Section (square inches) | | Outside Diameter (inches) | Weight per 1000 Feet (lbs) | | | Per Cent Weight | | Ultimate Strength | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Aluminium | Steel | Aluminium | Total | | Total | Aluminium | Steel | Aluminium | Steel | Stranded Weight Coating | B. Coating Aluminised | C. Coating |
| PETREL | 101,800 | 12x.0921 | 7x.0921 | .0800 | .1266 | .461 | 254.1 | 96.0 | 158.1 | 37.79 | 62.21 | 9,860 | 9,615 | 9,385 |
| MINORCA | 110,800 | 12x.0961 | 7x.0961 | .0870 | .1378 | .481 | 276.6 | 104.5 | 172.1 | 37.79 | 62.21 | 10,730 | 10,475 | 10,225 |
| LEGHORN | 134,600 | 12x.1059 | 7x.1059 | .1057 | .1674 | .530 | 336.0 | 127.0 | 209.0 | 37.79 | 62.21 | 12,920 | 12,620 | 12,310 |
| GUINEA | 159,000 | 12x.1151 | 7x.1151 | .1249 | .1977 | .576 | 396.8 | 150.0 | 246.8 | 37.79 | 62.21 | 15,200 | 14,485 | 14,485 |
| DOTTEREL | 176,900 | 12x.1214 | 7x.1214 | .1389 | .2200 | .607 | 441.4 | 166.8 | 274.6 | 37.79 | 62.21 | 16,440 | 15,640 | 14,830 |
| DORKING | 190,800 | 12x.1261 | 7x.1261 | .1499 | .2373 | .631 | 476.3 | 180.0 | 296.3 | 37.79 | 62.21 | 17,730 | 16,850 | 16 000 |
| BRAHMA | 203,200 | 16x.1127 | 19x.0977 | .1596 | .3020 | .714 | 676.8 | 191.7 | 485.1 | 28.33 | 71.67 | 27,500 | 26,800 | 26,100 |
| COCHIN | 211,300 | 12x.1327 | 7x.1327 | .1660 | .2628 | .663 | 527.5 | 199.3 | 328.2 | 37.79 | 62.21 | 19,640 | 18,700 | 17,700 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 4

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

ASTM SPECIFICATIONS : ALL ALUMINIUM CONDUCTORS

| Cable Code Word | Conductor Size: Circular Mills or AWG | Conductor Size: Square inches | Copper Equivalent based on equal dc Resistance: Cu 97% | Copper Equivalent based on equal dc Resistance: Al 61% | Stranding: Class | Stranding: No. and Dia of Wires (inches) | Cable Dia (inches) | Ultimate Strength (pounds) | Weight per 1000 feet (pounds) |
|---|---|---|---|---|---|---|---|---|---|
| PEACHBELL | 6 | 0.0206 | 8 | | A | 7x0.0612 | 0.184 | 528 | 24.6 |
| ROSE | 4 | 0.0328 | 6 | | A | 7x0.0772 | 0.232 | 826 | 39.2 |
| LILY | 3 | 0.0413 | 5 | | A | 7x0.0867 | 0.260 | 1,022 | 49.4 |
| IRIS | 2 | 0.0521 | 4 | | AA,A | 7x0.0964 | 0.292 | 1,267 | 62.3 |
| PANSY | 1 | 0.0657 | 3 | | AA,A | 7x0.1094 | 0.328 | 1,537 | 78.5 |
| POPPY | 1/0 | 0.0829 | 2 | | AA,A | 7x0.1228 | 0.368 | 1,865 | 99.1 |
| ASTER | 2/0 | 0.1045 | 1 | | AA,A | 7x0.1379 | 0.414 | 2,350 | 124.9 |
| PHLOX | 3/0 | 0.1318 | 1/0 | | AA,A | 7x0.1548 | 0.464 | 2,845 | 157.5 |
| OXLIP | 4/0 | 1.1662 | 2/0 | | AA,A | 7x0.1739 | 0.522 | 3,590 | 198.6 |
| DAISY | 266,800 | 0.2095 | 3/0 | | .. | 7x0.1953 | 0.586 | 4,525 | 250.5 |
| LAUREL | 266,820 | 0.2095 | 3/0 | | A | 19x0.1185 | 0.593 | 4,800 | 250.5 |
| PEONY | 300,000 | 0.2356 | 188700 | | A | 19x0.1257 | 0.629 | 5,301 | 281.6 |
| TULIP | 336,400 | 0.2642 | 4/0 | | AA,A | 19x0.1331 | 0.666 | 5,940 | 315.8 |
| DAFFODIL | 350,000 | 0.2749 | 220000 | | A | 19x0.1357 | 0.679 | 6,185 | 328.6 |
| CANNA | 397,500 | 0.3122 | 250000 | | AA,A | 19x0.1447 | 0.724 | 6,880 | 373.2 |
| COSMOS | 477,000 | 0.3746 | 300000 | | AA | 19x0.1585 | 0.793 | 8,090 | 447.8 |
| SYRINGA | 477,000 | 0.3746 | 300000 | | A | 37x0.1135 | 0.795 | 8,600 | 447.8 |
| ZINNIA | 500,000 | 0.3927 | 314000 | | AA | 19x0.1622 | 0.811 | 8,482 | 469.4 |
| HYACINTH | 500,000 | 0.3927 | 314000 | | A | 37x0.1162 | 0.813 | 9,012 | 469.4 |
| DAHLIA | 556,500 | 0.4371 | 350000 | | .. | 19x0.1711 | 0.856 | 9,440 | 522.4 |

JOB NO. : DCIL-105 EXHIBIT : 4

| Cable Code Word | Conductor Size: Circular Mills or AWG | Conductor Size: Square inches | Copper Equivalent based on equal dc Resistance: Cu 97% | Copper Equivalent based on equal dc Resistance: Al 61% | Stranding: Class | Stranding: No. and Dia of Wires (inches) | Cable Dia (inches) | Ultimate Strength (pounds) | Weight per 1000 feet (pounds) |
|---|---|---|---|---|---|---|---|---|---|
| MISTLETOE | 556,500 | 0.4371 | 350000 | | AA,A | 37x0.1226 | 0.858 | 9,830 | 522.4 |
| ORCHID | 636,000 | 0.4995 | 400000 | | AA,A | 37x0.1311 | 0.918 | 11,240 | 597.0 |
| VIOLET | 715,500 | 0.5620 | 450000 | | AA | 37x0.1391 | 0.974 | 12,640 | 671.6 |
| NASTURTIUM | 715,500 | 0.5620 | 450000 | | A | 61x0.1083 | 0.975 | 13,150 | 671.6 |
| ARBUTUS | 795,000 | 0.6244 | 500000 | | AA | 37x0.1466 | 1.026 | 13,770 | 746.3 |
| LILAC | 795,000 | 0.6244 | 500000 | | A | 61x0.1142 | 1.028 | 14,330 | 746.3 |
| ANEMONE | 874,500 | 0.6868 | 550000 | | AA | 37x0.1538 | 1.077 | 14,830 | 820.9 |
| CROCUS | 874,500 | 0.6868 | 550000 | | A | 61x0.1198 | 1.078 | 15,760 | 820.9 |
| MAGNOLIA | 954,000 | 0.7493 | 600000 | | AA | 37x0.1606 | 1.124 | 16,180 | 895.5 |
| GOLDENROD | 954,000 | 0.7493 | 600000 | | A | 61x0.1251 | 1.126 | 16,860 | 895.6 |
| BLUEBELL | 1033,500 | 0.8117 | 650000 | | AA | 37x0.1672 | 1.170 | 17,530 | 970.1 |
| LARKSPUR | 1033,500 | 0.8117 | 650000 | | A | 61x0.1302 | 1.172 | 18,260 | 970.2 |
| MARIGOLD | 1133,000 | 0.8741 | 700000 | | AA,A | 61x0.1351 | 1.216 | 19,660 | 1045 |
| HAWTHORN | 1192,500 | 0.9366 | 750000 | | AA,A | 61x0.1398 | 1.258 | 21,000 | 1194 |
| NARCISSUS | 1272,000 | 0.999 | 800000 | | AA,A | 61x0.1444 | 1.300 | 22,000 | 1193 |
| COLUMBINE | 1351,500 | 1.062 | 850000 | | AA,A | 61x0.1489 | 1.340 | 23,400 | 1269 |
| CARNATION | 1431,000 | 1.124 | 900000 | | AA,A | 61x0.1532 | 1.379 | 24,300 | 1343 |
| GLADIOLUS | 1510,500 | 1.186 | 950000 | | AA,A | 61x0.1574 | 1.417 | 25,600 | 1418 |
| CORKOPSIS | 1590,000 | 1.249 | 1000000 | | AA | 61x0.1615 | 1.454 | 27,000 | 1493 |

# SECTION - 4
# MARKET ANALYSIS

## MARKET ANALYSIS

Bare wire conductors are an essential part of the overhead power transmission system. They link the points of power generation with the points of power consumption through the transmission and distribution network. Therefore, an increase in power generation capacity and power consumption is generally accompanied by an increase in the length of transmission and/or distribution network.

According to the Sectoral study carried out by the AIDMO, the estimated average annual increase in power generating capacity in the 13 countries which were required to be covered, is likely to range from 6,700 MW in the early 1990s to about 9,300 MW by 2010 AD. Correspondingly, demand for various electrical equipment and accessories, including conductors, is estimated to increase substantially so as to be able to distribute the additional power generated.

Projected additional length of overhead transmission and distribution network, as extracted from the AIDMO Report on Sectoral study for the period 1991-2010, is given in Exhibit-5. Different transmission/distribution voltages have been classified in this Exhibit in the following manner :

| | | |
|---|---|---|
| Ultra High Voltage (UHV) | - | > 300 KV |
| High Voltage (HV) | - | 60 KV to 225 KV |
| Medium Voltage (MV) | - | 1.1 KV to 33 KV |
| Low Voltage (LV) | - | < 440 Volts |

This Exhibit gives country-wise additions to overhead transmission/distribution network by voltage class, for 4 five-year periods - 1991-95, 1996-2000, 2001-2005 and 2006-2010 AD. Exhibit-6 presents the projected average annual addition to the transmission and distribution network, by voltage class and by country, for the same periods.

These projections are based on the additional generating capacities projected by the AIDMO. However, it was observed that the actual additions to capacity in many countries during the period 1986-90, were only about 50 - 80% of the projections made by the AIDMO. As a conservative estimate, it is assumed that 70% of the additional generating capacity proposed in the AIDMO Report will actually be implemented. Accordingly, the annual demand for conductors is taken at about 70% of the projections made by the AIDMO. Exhibit-7 gives the estimated annual demand for overhead transmission and distribution network till 2010.

The transmission network in the designated region is partly of the double-circuit and partly of the single-circuit type. UHV and EV networks are by and large of the double-circuit type, while HV and MV networks are generally of the single-circuit type. Accordingly, demand for bare wire conductors has been estimated as shown in Exhibit-8.

Annual demand for conductors in terms of weight is presented in Exhibit-9. This has been arrived at, based on the following norms :

| Type of Conductor | | Tonnes/ckt. Km |
|---|---|---|
| UHV | - | 20.00 |
| HV | - | 6.50 |
| MV | - | 1.22 |
| LV | - | 1.75 |

The average annual demand for conductors for the period 1991-95 works out to about 467,000 Km. This is equivalent to about 159,000 tonnes.

At present, important part of the demand in the region is met through imports. On a conservative basis, it is recommended that manufacturing facilities are set up initially with the capacity fixed at about 50% of the estimated average annual demand for the period 1991-95. The plants will operate on a 2-shift basis. The number of shifts may be increased to three, thereby satisfying 75% of the projected demand without additional investment in plant and equipment. If necessary, the capacity may be further expanded to meet the balance demand by the end of the period.

With a view to standardise plant sizes over the designated region, plants of identical capacity are recommended with minor variations in the product-mix. Identical plant sizes will not only facilitate implementation but also help in handling operational problems.

It is recommended that 5 manufacturing plants are set up, each with a capacity of about 16,000 tonnes per annum. In terms of kilometers the capacities may vary from about 28,000 Km to over 60,000 Km per annum, depending on the product-mix of each plant.

JOB NO. : DCIL-105

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

EXHIBIT : 5

PROJECT PROFILE ON BARE WIRES

PROJECTED ADDITIONAL OVERHEAD TRANSMISSION AND DISTRIBUTION NETWORK

(Figures in KM)

| Country | 1991-95 | | | | 1996-2000 | | | | 2001-2005 | | | | 2006-2010 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UHV | HV | MV | LV | UHV | HV | MV | LV | UHV | HV | MV | LV | UHV | HV | MV | LV |
| Algeria | - | 4218 | 20985 | 22187 | - | 4287 | 21361 | 22585 | - | 4287 | 21361 | 22585 | - | 4287 | 21361 | 22585 |
| Bahrain | - | 100 | 715 | 865 | - | 160 | 1151 | 1393 | - | 160 | 1151 | 1393 | - | 160 | 1151 | 1393 |
| Egypt | - | 6778 | 34763 | 107824 | - | 8531 | 43750 | 135700 | - | 8531 | 43750 | 135700 | - | 8531 | 43750 | 135700 |
| Iraq | 3489 | 9866 | 21102 | 59520 | 4116 | 11639 | 24894 | 70215 | 4116 | 11639 | 24894 | 70215 | 4116 | 11639 | 24894 | 70215 |
| Jordan | - | 1457 | 1942 | 4928 | - | 1553 | 2021 | 5353 | - | 1553 | 2021 | 5353 | - | 1553 | 2021 | 5353 |
| Kuwait | 189 | 504 | 669 | 190 | 189 | 504 | 669 | 190 | 189 | 504 | 669 | 190 | 189 | 504 | 669 | 190 |
| Libya | - | 5112 | 5099 | 18360 | - | 5112 | 5099 | 18360 | - | 5112 | 5099 | 18360 | - | 5112 | 5099 | 18360 |
| Morocco | - | 2768 | 6605 | 17020 | - | 3816 | 9104 | 23460 | - | 3816 | 9104 | 23460 | - | 3816 | 9104 | 23460 |
| S. Arabia | 1175 | 2743 | 8086 | 922 | 1430 | 3337 | 9837 | 1122 | 1430 | 3337 | 9837 | 1122 | 1430 | 3337 | 9837 | 1122 |
| Sudan | - | 306 | 2694 | 4041 | - | 470 | 4142 | 6215 | - | 470 | 4142 | 6215 | - | 470 | 4142 | 6215 |
| Syria | 742 | 6673 | 46266 | 55700 | 1077 | 9693 | 67200 | 80902 | 1077 | 9693 | 67200 | 80902 | 1077 | 9693 | 67200 | 80902 |
| Tunisia | - | 859 | 6461 | 12496 | - | 822 | 6239 | 12065 | - | 916 | 6963 | 13465 | - | 916 | 6963 | 13465 |
| U.A.E. | - | 2630 | 4617 | 5277 | 1938 | 1938 | 6785 | 7754 | 1938 | 1938 | 6785 | 7754 | 1938 | 1938 | 6785 | 7754 |
| Total | 5595 | 44014 | 160004 | 309330 | 8750 | 51862 | 202252 | 385314 | 8750 | 51956 | 202976 | 386714 | 8750 | 51956 | 202976 | 386714 |

JOB NO. : DCIL-105 EXHIBIT : 6

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

PROJECTED AVERAGE ANNUAL ADDITION TO OVERHEAD TRANSMISSION AND DISTRIBUTION NETWORK

(Figures in KM)

| Country | 1991-95 | | | | 1996-2000 | | | | 2001-2005 | | | | 2006-2010 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DHV | HV | MV | LV | DHV | HV | MV | LV | DHV | HV | MV | LV | DHV | HV | MV | LV |
| Algeria | - | 844 | 4197 | 4437 | - | 857 | 4272 | 4517 | - | 857 | 4272 | 4517 | - | 857 | 4272 | 4517 |
| Bahrain | - | 20 | 143 | 173 | - | 72 | 230 | 279 | - | 32 | 230 | 279 | - | 32 | 230 | 279 |
| Egypt | - | 1356 | 6953 | 21565 | - | 1706 | 8750 | 27140 | - | 1706 | 8750 | 27140 | - | 1706 | 8750 | 27140 |
| Iraq | 698 | 1973 | 4220 | 11904 | 823 | 2328 | 4979 | 14043 | 823 | 2328 | 4979 | 14043 | 823 | 2328 | 4979 | 14043 |
| Jordan | - | 291 | 388 | 986 | - | 311 | 404 | 1071 | - | 311 | 404 | 1071 | - | 311 | 404 | 1071 |
| Kuwait | 38 | 101 | 134 | 38 | 38 | 101 | 134 | 38 | 38 | 101 | 134 | 38 | 38 | 101 | 134 | 38 |
| Libya | - | 1022 | 1020 | 3672 | - | 1022 | 1020 | 3672 | - | 1022 | 1020 | 3672 | - | 1022 | 1020 | 3672 |
| Morocco | - | 554 | 1321 | 3404 | - | 763 | 1821 | 4692 | - | 763 | 1821 | 4692 | - | 763 | 1821 | 4692 |
| S. Arabia | 235 | 549 | 1617 | 184 | 286 | 667 | 1967 | 224 | 286 | 667 | 1967 | 224 | 286 | 667 | 1967 | 224 |
| Sudan | - | 61 | 539 | 808 | - | 94 | 828 | 1243 | - | 94 | 828 | 1243 | - | 94 | 828 | 1243 |
| Syria | 148 | 1335 | 9253 | 11140 | 215 | 1939 | 13440 | 16180 | 215 | 1939 | 13440 | 16180 | 215 | 1939 | 13440 | 16180 |
| Tunisia | - | 172 | 1292 | 2499 | - | 164 | 1248 | 2413 | - | 183 | 1393 | 2693 | - | 183 | 1393 | 2693 |
| U.A.E | - | 526 | 923 | 1055 | 388 | 388 | 1357 | 1551 | 388 | 388 | 1357 | 1551 | 388 | 388 | 1357 | 1551 |
| Total | 1119 | 8804 | 32000 | 61865 | 1750 | 10372 | 40450 | 77063 | 1750 | 10391 | 40695 | 77343 | 1750 | 10391 | 40695 | 77343 |

JOB NO. : DCIL-105 EXHIBIT : 7

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

ESTIMATED AVERAGE ANNUAL DEMAND FOR OVERHEAD TRANSMISSION AND DISTRIBUTION NETWORK

(Figures in KM)

| Country | 1991-95 | | | | 1996-2000 | | | | 2001-2005 | | | | 2006-2010 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UHV | HV | MV | LV | UHV | HV | MV | LV | UHV | HV | MV | LV | UHV | HV | MV | LV |
| Algeria | - | 591 | 2938 | 3106 | - | 600 | 2990 | 3162 | - | 600 | 2990 | 3162 | - | 600 | 2990 | 3162 |
| Bahrain | - | 14 | 100 | 121 | - | 22 | 161 | 195 | - | 22 | 161 | 195 | - | 22 | 161 | 195 |
| Egypt | - | 949 | 4867 | 15095 | - | 1194 | 6125 | 18998 | - | 1194 | 6125 | 18998 | - | 1194 | 6125 | 18998 |
| Iraq | 489 | 1381 | 2954 | 8333 | 576 | 1630 | 3485 | 9830 | 576 | 1630 | 3485 | 9830 | 576 | 1630 | 3485 | 9830 |
| Jordan | - | 204 | 272 | 690 | - | 218 | 283 | 750 | - | 218 | 283 | 750 | - | 218 | 283 | 750 |
| Kuwait | 27 | 71 | 94 | 27 | 27 | 71 | 94 | 27 | 27 | 71 | 94 | 27 | 27 | 71 | 94 | 27 |
| Libya | - | 715 | 714 | 2570 | - | 715 | 714 | 2570 | - | 715 | 714 | 2570 | - | 715 | 714 | 2570 |
| Morocco | - | 388 | 925 | 2383 | - | 534 | 1275 | 3284 | - | 534 | 1275 | 3284 | - | 534 | 1275 | 3284 |
| S. Arabia | 164 | 384 | 1132 | 129 | 200 | 467 | 1377 | 157 | 200 | 467 | 1377 | 157 | 200 | 467 | 1377 | 157 |
| Sudan | - | 43 | 377 | 566 | - | 66 | 580 | 870 | - | 66 | 580 | 870 | - | 66 | 580 | 870 |
| Syria | 104 | 934 | 6477 | 7798 | 150 | 1357 | 9408 | 11326 | 150 | 1357 | 9408 | 11326 | 150 | 1357 | 9408 | 11326 |
| Tunisia | - | 120 | 904 | 1749 | - | 115 | 874 | 1689 | - | 128 | 975 | 1885 | - | 128 | 975 | 1885 |
| U.A.E | - | 368 | 646 | 738 | 272 | 272 | 950 | 1086 | 272 | 272 | 950 | 1086 | 272 | 272 | 950 | 1086 |
| Total | 784 | 6162 | 22400 | 43305 | 1225 | 7261 | 28316 | 53944 | 1225 | 7274 | 28417 | 54140 | 1225 | 7274 | 28417 | 54140 |

JOB NO. : DCIL-105

EXHIBIT : 8

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

ESTIMATED AVERAGE ANNUAL DEMAND FOR BARE WIRE CONDUCTORS

(Figures in KM)

| Country | 1991-95 | | | | 1996-2000 | | | | 2001-2005 | | | | 2006-2010 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UHV | HV | MV | LV | UHV | HV | MV | LV | UHV | HV | MV | LV | UHV | HV | MV | LV |
| Algeria | - | 2364 | 11752 | 24848 | - | 2400 | 11960 | 25296 | - | 2400 | 11960 | 25296 | - | 2400 | 11960 | 25296 |
| Bahrain | - | 56 | 400 | 968 | - | 88 | 644 | 1560 | - | 88 | 644 | 1560 | - | 88 | 644 | 1560 |
| Egypt | - | 3796 | 19468 | 12076 | - | 4776 | 24500 | 151984 | - | 4776 | 24500 | 151984 | - | 4776 | 24500 | 151984 |
| Iraq | 3912 | 5524 | 11816 | 66664 | 4608 | 6520 | 13940 | 78640 | 4608 | 6520 | 13940 | 78640 | 4608 | 6520 | 13940 | 78640 |
| Jordan | - | 816 | 1088 | 5520 | - | 872 | 1132 | 6000 | - | 872 | 1132 | 6000 | - | 872 | 1132 | 6000 |
| Kuwait | 216 | 284 | 376 | 216 | 216 | 284 | 376 | 216 | 216 | 284 | 376 | 216 | 216 | 284 | 376 | 216 |
| Libya | - | 2860 | 2856 | 20560 | - | 2860 | 2856 | 20560 | - | 2860 | 2856 | 20560 | - | 2860 | 2856 | 20560 |
| Morocco | - | 1552 | 3700 | 19064 | - | 2136 | 5100 | 26272 | - | 2136 | 5100 | 26272 | - | 2136 | 5100 | 26272 |
| S. Arabia | 1312 | 1536 | 4528 | 1032 | 1600 | 1868 | 5508 | 1256 | 1600 | 1868 | 5508 | 1256 | 1600 | 1868 | 5508 | 1256 |
| Sudan | - | 172 | 1508 | 4528 | - | 264 | 2320 | 6960 | - | 264 | 2320 | 6960 | - | 264 | 2320 | 6960 |
| Syria | 832 | 3736 | 25908 | 62384 | 1200 | 5428 | 37632 | 90608 | 1200 | 5428 | 37632 | 90608 | 1200 | 5428 | 37632 | 90608 |
| Tunisia | - | 480 | 3616 | 13992 | - | 460 | 3496 | 13512 | - | 512 | 3900 | 15080 | - | 512 | 3900 | 15080 |
| U.A.E | - | 1472 | 2584 | 5904 | 2176 | 1088 | 3800 | 8688 | 2176 | 1088 | 3800 | 8688 | 2176 | 1088 | 3800 | 8688 |
| Total | 6272 | 24648 | 89600 | 346440 | 9800 | 29044 | 113264 | 431552 | 9800 | 29096 | 113668 | 433120 | 9800 | 29096 | 113668 | 433120 |

DEVELOPMENT CONSULTANTS

JOB NO. : DC1L-105 EXHIBIT : 9

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

ESTIMATED AVERAGE ANNUAL DEMAND FOR BARE WIRE CONDUCTORS BY WEIGHT

(Figures in MT)

| Country | 1991-95 | | | | 1996-2000 | | | | 2001-2005 | | | | 2006-2010 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UHV | HV | MV | LV | UHV | HV | MV | LV | UHV | HV | MV | LV | UHV | HV | MV | LV |
| Algeria | - | 3842 | 3584 | 5436 | - | 3900 | 3648 | 5534 | - | 3900 | 3648 | 5534 | - | 3900 | 3648 | 5534 |
| Bahrain | - | 91 | 122 | 212 | - | 143 | 196 | 341 | - | 143 | 196 | 341 | - | 143 | 196 | 341 |
| Egypt | - | 6168 | 5938 | 26416 | - | 7761 | 7473 | 33247 | - | 7761 | 7473 | 33247 | - | 7761 | 7473 | 33247 |
| Iraq | 9780 | 8977 | 3604 | 14583 | 11520 | 10595 | 4252 | 17202 | 11520 | 10595 | 4252 | 17202 | 11520 | 10595 | 4252 | 17202 |
| Jordan | - | 1326 | 332 | 1208 | - | 1417 | 345 | 1313 | - | 1417 | 345 | 1313 | - | 1417 | 345 | 1313 |
| Kuwait | 540 | 462 | 114 | 47 | 540 | 462 | 115 | 47 | 540 | 462 | 115 | 47 | 540 | 462 | 115 | 47 |
| Libya | - | 4647 | 871 | 4498 | - | 4648 | 871 | 4498 | - | 4648 | 871 | 4498 | - | 4648 | 871 | 4498 |
| Morocco | - | 2522 | 1129 | 4170 | - | 3471 | 1556 | 5747 | - | 3471 | 1556 | 5747 | - | 3471 | 1556 | 5747 |
| S. Arabia | 3280 | 2496 | 1381 | 226 | 4000 | 3035 | 1680 | 275 | 4000 | 3035 | 1680 | 275 | 4000 | 3035 | 1680 | 275 |
| Sudan | - | 279 | 460 | 991 | - | 429 | 708 | 1523 | - | 429 | 708 | 1523 | - | 429 | 708 | 1523 |
| Syria | 2080 | 6071 | 7902 | 13646 | 3000 | 8820 | 11478 | 19820 | 3000 | 8820 | 11478 | 19820 | 3000 | 8820 | 11478 | 19820 |
| Tunisia | - | 780 | 1103 | 3060 | - | 748 | 1066 | 2956 | - | 832 | 1190 | 3299 | - | 832 | 1190 | 3299 |
| U.A.E | - | 2392 | 788 | 1292 | 5440 | 1768 | 1159 | 1900 | 5440 | 1768 | 1159 | 1900 | 5440 | 1768 | 1159 | 1900 |
| Total | 15680 | 40053 | 27328 | 75784 | 24500 | 47197 | 34547 | 94402 | 24500 | 47281 | 34671 | 94745 | 24500 | 47281 | 34671 | 94745 |

DEVELOPMENT CONSULTANTS

# SECTION - 5
# PLANT LOCATION

## PLANT LOCATION

The five plants recommended for manufacturing bare wires will cater to the domestic demand in countries where the plants are set up, and also satisfy the requirements of neighbouring countries. It is also recommended that the capacities of all these plants be approximately the same, to ensure interchangeability of parts, machinery, spares, etc., amongst them.

The selection of locations for establishing the manufacturing plants was made, based on the following considerations :

- size of the domestic market in each of the 13 countries
- availability of raw materials within the designated region
- proximity to sources of raw materials, and the availability of road, rail or sea linkages
- availability of essential infrastructural facilities such as power, water, labour, etc.
- relationships and affiliations among different nations in the designated region
- mutual interest of all Arab countries and investment environment

Exhibit-10 presents the country-wise annual demand for conductors for the period 1991-95. As shown in this Exhibit, these 13 countries are suitably grouped to arrive at the

best way of serving the markets in all of them. Taking into account the dispersion of demand within these groups, it is recommended that the plants be set up at Morocco, Bahrain, Kuwait, Syria and Iraq.

Exhibit-11 presents the recommended plant locations, their respective product-mix and the markets to be served by them.

The requirements of UHV conductors in different countries do not justify installation of special machinery for their manufacture in all the 5 plants. It is suggested that UHV conductors be manufactured only at the plant in Bahrain due to its proximity to raw materials and availability of transportation linkages to the markets in Kuwait, Saudi Arabia, Syria and Iraq.

The plant in Morocco will cater to the domestic demand as well as demand from its neighbouring countries - Libya, Algeria and Tunisia.

Bahrain has vast reserves of bauxite. The plant at Bahrain will thus have the advantage of being closest to the raw material source. This plant will manufacture and supply all types of conductors to consumers in Bahrain, Kuwait, Saudi Arabia, Egypt and the UAE. In addition, it will also meet the entire demand for UHV conductors in the designated region, as already mentioned above.

The plant in Kuwait will manufacture conductors for domestic consumption while a large quantity of its production will be fed to the Egyptian market.

The Syrian plant will manufacture conductors for the domestic and the Jordanian markets. The domestic market is likely to absorb about 80% of the total output from the

Syrian plant. The excess production may be directed to Egypt.

Iraq will have its own facility to manufacture HV, MV and LV conductors. The domestic demand is large enough to justify a plant in this country.

All the plants will require to be located close to a port and/or other industrial area, to take advantage of better infrastructural support and to facilitate transportation of raw materials and finished products. It is recommended that :

- the plant in Morocco may be set up in the northern part of the country. Its proximity to the Mediterranean Sea will help in transportation of raw materials and finished products.
- the plant in Bahrain may be set up close to the industrial area to take advantage of the available infrastructure.
- the plant in Kuwait may be set up in a place where industrial infrastructure and transportation linkages will be readily available.
- the plant at Syria should be preferably located near Damascus where adequate infrastructure would be available.
- the plant in Iraq could be installed in an industrial area, close to the port of Basra. This will facilitate imports of raw materials.

The final selection of sites will need a closer look at the time the projects are planned for implementation.

JOB NO. : DCIL-105

EXHIBIT : 10

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**COUNTRY-WISE ANNUAL DEMAND FOR BARE WIRE CONDUCTORS**

| Country | By Length (KM) | | | | By Weight (MT) | | | |
|---|---|---|---|---|---|---|---|---|
| | UHV | HV | MV | LV | UHV | HV | MV | LV |
| Algeria | - | 2364 | 11752 | 24848 | - | 3842 | 3554 | 5436 |
| Libya | - | 2860 | 2856 | 20560 | - | 4647 | 671 | 4498 |
| Morocco | - | 1552 | 3700 | 19064 | - | 2522 | 1129 | 4170 |
| Tunisia | - | 480 | 3616 | 13992 | - | 780 | 1103 | 3060 |
| Sub-total | - | 7256 | 21924 | 78464 | - | 11791 | 6657 | 17164 |
| Bahrain | - | 56 | 400 | 968 | - | 91 | 122 | 212 |
| Kuwait | 216 | 284 | 376 | 216 | 540 | 462 | 114 | 47 |
| S. Arabia | 1312 | 1536 | 4528 | 1032 | 3280 | 2496 | 1381 | 226 |
| U.A.E. | - | 1472 | 2584 | 5904 | - | 2392 | 788 | 1292 |
| Syria | 832 | - | - | - | 2080 | - | - | - |
| Iraq | 3912 | - | - | - | 9780 | - | - | - |
| Egypt | - | 3796 | 19468 | 120760 | - | 6168 | 5938 | 26416 |
| Sudan | - | 172 | 1508 | 4528 | - | 279 | 460 | 991 |
| Sub-total | 6272 | 7316 | 28864 | 133408 | 15680 | 11887 | 8803 | 29184 |
| Syria | - | 3736 | 25908 | 62384 | - | 6071 | 7902 | 13646 |
| Jordan | - | 816 | 1088 | 5520 | - | 1326 | 332 | 1208 |
| Sub-total | - | 4552 | 26996 | 67904 | | 7397 | 8234 | 14854 |
| Iraq | | 5524 | 11816 | 66664 | | 8977 | 3604 | 14583 |

JOB NO. : DCIL-105 EXHIBIT : II

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

SUGGESTED PLANT LOCATIONS, PRODUCT-MIX AND CAPACITIES

| Description | Location | | | | | TOTAL | AVERAGE |
|---|---|---|---|---|---|---|---|
| | MOROCCO | BAHRAIN | SYRIA | IRAQ | KUWAIT | | |
| Countries Served | Algeria, Libya, Morocco, Tunisia | Bahrain, Kuwait, UAE Saudi Arabia, Iraq*, Syria*, Egypt** | Syria, Jordan | Iraq | Kuwait, Egypt | - | - |
| Product-mix (in KM) | | | | | | | |
| OHV Conductors | - | 3000 | - | - | - | 3000 | 600 |
| HV Conductors | 3500 | 1700 | 2000 | 2300 | 2800 | 12300 | 2500 |
| MV Conductors | 10000 | 7000 | 8400 | 13500 | 7100 | 46000 | 9200 |
| LV Conductors | 40000 | 16000 | 50100 | 34000 | 40000 | 180100 | 36000 |
| Total | 53500 | 27700 | 60500 | 49800 | 49900 | 241400 | 48300 |
| Product-mix (in MT) | | | | | | | |
| [illegible] nductors | - | 7500 | - | - | | 7500 | 1500 |
| HV Conductors | 5700 | 2800 | 3300 | 3700 | 3600 | 20100 | 4000 |
| MV Conductors | 3100 | 2100 | 2600 | 4100 | 3200 | 14100 | 2800 |
| LV Conductors | 8800 | 3500 | 11000 | 7400 | 8800 | 39500 | 7900 |
| Total | 17600 | 15900 | 16900 | 15200 | 15600 | 81200 | 16200 |

* only OHV conductors

** 50% of MV and LV conductors will be for Egypt

DEVELOPMENT CONSULTANTS

# SECTION - 6
# MANUFACTURING PROCESS

## MANUFACTURING PROCESS

The bare wire conductors used most commonly in UHV/HV power transmission and distribution systems are stranded aluminium conductors with steel wire cores. Aluminium alloy conductors and copper conductors are also used in overhead transmission of electric power.

The major stages involved in manufacture of bare wire conductors include the following :

- o Pre-treatment
- o Wire drawing
- o Annealing
- o Galvanising
- o Stranding

Generally, only wire drawing and stranding operations are required for steel reinforced and all aluminium conductors.

Bare wires are manufactured in different sizes and configurations. The quantity of output in a specific size may not be large enough to justify mass scale, continuous production. Therefore, manufacturing in batches is recommended. This will also provide necessary flexibility for quickly responding to the planned changes in the product-mix.

### PRE-TREATMENT

The diameter of steel or aluminium wire used to make steel reinforced aiuminium conductors varies from 2 mm to 5 mm. In the case of aluminium alloy conductors, the diameter of

aluminium wire varies from 1.5 mm to 4 mm. Wires of such small diameter have to be drawn from rods procured from rolling mills.

Hot rolled steel rods obtained from rolling mills usually have about 2% scale on them. This mill scale needs to be removed before processing the rods further. 'Descaling' can be done either mechanically, in a descaler or chemically, by acid pickling.

The descaler removes the scale from the rod when it is passed through pullies and an array of steel wool rotary cleaners. Residual scale is removed by dipping the rod in a hot water bath or by spraying it with hot water. The rod is then coated with borax and subsequently dried in a baking oven.

In case of acid pickling, the rods are rinsed first in a bath containing warm sulphuric acid. They are then rinsed with water and subsequently neutralised in a bath containing lime. Besides acting as a neutralising agent, the lime also acts as a lubricant. The coat of lime on the rod must be thoroughly dried in a baking oven for proper lubrication. The lime also helps to reduce the brittleness caused by acid treatment.

WIRE DRAWING

The wire drawing essentially involves 'drawing down' operation by pulling the pre-treated rod/wire through a die having a conical hole. The diameter of the rod is reduced by 10 - 25% in each drawing step, subject to the ductility of the material being drawn. Usually, the drawing is done in the cold state or when the metal is at room temperature. Due

to the friction between the wire and the die, the material near the centre of the cross setion flows more compared to that at the outer surface of the wire. This results in a bright drawn wire that requires no polishing.

The velocity of drawing is a very important parameter in the wire drawing process. This is limited by the heat generated due to friction between the wire and the die. The drawing speed for aluminium wire ranges from 130 metres per minute for 6 mm wires, to 600 metres per minute for thinner wires.

While installing machines with higher wire drawing speeds, it is necessary to provide compatible material handling facilities to ensure a smooth production flow. Two types of wire drawing machines are generally in use; they are of the slip and non-slip types. The non-slip type of machine produces better quality of wire and is commonly used. In this machine, wire is drawn by the capstan at a speed equivalent to the elongation at each reduction. If the rate of wire drawing is more than what can be taken up by the capstan, the excess length is transferred to a block for subsequent processing.

The dies used for wire drawing are made up of either tungsten carbide or diamond.

**ANNEALING**

In wire drawing, the diameter is reduced very slowly as the wire passes through a series of holes with gradually diminishing diameters, to reach a given diameter. Repeated drawing causes substantial reduction in ductility of the material and increase in ultimate strength. This wire is 'process annealed' to restore its ductility. Depending on

the rate of production, process annealing is done either on continuous or batch type furnaces. Steel wires require annealing after every third or fourth reduction in wire diameter. In case of aluminium and copper wires, annealing, if necessary, is carried out after the wire has been drawn to its finished size. In order to prevent discolouration of copper wires, a perforated can filled with charcoal is charged into the furnace. Emission of carbon monoxide gas from charcoal prevents discolouration of the copper wires.

**GALVANISING**

The steel core wire of ACSR-type conductors is given a zinc coat by hot dip galvanising. After pickling and water rinsing, the steel wires are given a flux coating in order to remove traces of impurities. The impurities occur as oxides, sulphates or sulphites and are present on the surface of the wire. Zinc ammonium chloride is commonly used as flux. The flux, floating on the surface of the zinc bath, provides a molten coating on the wires when they are dipped into the tank.

The quality of zinc coating required on the components depends on the following factors :

- purity of zinc
- bath temperature
- bath alloying elements
- immersion time
- withdrawal rate
- coating thickness
- cooling of coated wires

**Purity of Zinc** : Pure zinc gives good bending property to the coatings and facilitates the formation of thick, uniform coatings. Impurities in zinc result in the descaling of the layer of zinc coating.

**Bath Temperature** : Zinc baths are usually maintained at temperatures ranging from 443°C to 465°C. If the bath temperature is raised beyond this range, oxides are rapidly formed at the bath surface. This adversely affects the quality of the coating.

**Bath Alloying Elements** : Alloying elements such as aluminium, tin and antimony are used in small quantities ranging from 0.02% to 1%, to give brightness to the zinc coating.

**Immersion Time** : The thickness of coating increases with increase in immersion time. The duration of immersion is usually in the range of 1 to 5 minutes. For best results, the components should be submerged as rapidly as possible.

**Withdrawal Rate** : To provide a uniform coating of minimum thickness, the wires are withdrawn from the zinc bath at a controlled rate, permitting maximum drainage. The optimum withdrawal rate for most articles is about 0.025 metres per second.

**Coating Tickness** : As the wire emerges from the galvanising bath, some of the zinc carried may remain in the molten state and tend to drip, making the coating rough and uneven. In order to obtain a smooth and uniform coating, the wires are passed through 'wipes' or 'headers'. Headers are employed only when extra heavy coating is desired.

**Cooling of Coated Wires** : The coating can continue to diffuse at elevated temperatures after the surface layer of zinc has frozen. This type of post-immersion diffusion may occur if cooling is hindered due to stacking of wires, or due to retention of heat by excessive cross-sectional area of the wire. Diffusion may convert a part or whole of the pure zinc layer to iron-zinc alloys, discolouring the surface and affecting its properties. To overcome this problem, wires taken out of the zinc bath should be spaced out adequately to ensure free circulation of air. Wires with heavy cross-sectional area will require forced cooling with air or water.

**STRANDING**

The operations of bunching and stranding use the common principle of twisting, as used in rope making. The methods used are decided by the size and number of wires which make up the conductor. The principal machines used for bunching and stranding are briefly described below :

**High speed double twisting machines** : This machine is used for twisting of wires. Single wires in reels, held in fixed frames or 'creels' are drawn through the fixed guide, and then passed through a rotating arm or 'bow' to the take-up reel. The take-up reel rotates about its own axis to give a twist to the wire.

**Drum twisting buncher** : This is similar to the one described above except that the take-up reel rotates about its own axis and also about the principal axis of the machine.

**Tubular strand twisting** : The reels containing single wires are supported by a rotating cage. The reels remain stationary in space while the cage rotates to twist the wires.

There are variations in these machines to give different degrees of twist to the wires and different production speeds.

**QUALITY CONTROL**

ACSR-type conductors are tested as per ASTM B549, while AAC-type conductors are tested as per ASTM B396/B398 specifications. Copper conductors are tested as per ASTM B1/B105 specifications.

The parameters to be tested after manufacturing are as follows :

- Lay ratio
- Cross-sectional area
- Number of wires, and their diameters
- Tensile strength
- Bending property
- Weight
- Electrical resistance

# SECTION - 7
# PLANT AND EQUIPMENT

## PLANT AND EQUIPMENT

The plant has been designed to manufacture both AAC and ACSR-type conductors. As the plant capacity and product-mix vary marginally across the plants, the total length of individual strands of wire to be drawn are approximately the same. Therefore, an average plant of 16,000 tonnes per annum or 48,000 Km per year size is considered as the basis for estimating the requirement of plant and machinery.

### MAIN PLANT

It is assumed that galvanised steel wires will be procured for making the steel core. Therefore, the plant has been provided with a tubular stranding machine for stranding these steel core. This machine will be operated for only one shift in a day.

All the other equipment including wire drawing machine, stranding machine, butt welding equipment, pointing and threading machine, etc., will be operated for 2 shifts a day.

The plant in Bahrain will have a rigid stranding machine capable of stranding up to 54 wires. All other plants will have machines with the capacity to strand up to 30 wires. Even in these plants, more wires can be stranded by repeating the stranding process.

The plant will not have galvanising facility as galvanised steel wires may be procured from external sources for manufacturing the steel core.

Since the plant will handle only aluminium and aluminium alloy conductors, annealing facilities are not necessary.

## TOOL ROOM AND MAINTENANCE

The plant has been provided with equipment and facilities for production and maintenance of machinery. Wire drawing dies and stranding dies may be procured from equipment suppliers.

## MATERIAL HANDLING

Material handling is an important function in the plant. Wire bobbins and take up reels weigh between 75 kg and 600 kg. These will have to be handled mechanically. For this purpose, four pendant-controlled overhead travelling hoists are provided. An EOT crane is also provided to handle the finally stranded wire bundles which weigh up to 2 tonnes. Other material handling facilities provided include forklifts, trolleys, and mobile jib cranes.

Exhibit-12 gives a list of all the major equipment and facilities together with their brief specifications.

### Auxiliary Equipment

Auxiliary equipment required at the plants include carpentry tools, surface plates, work benches, storage racks, pellets, etc.

### Testing and Quality Control

The raw materials and other inputs purchased will be of tested and approved quality. All incoming materials will be inspected prior to accepting them. Stage-wise inspection will be carried out to check the diameter, and mechanical and electrical properties of the conductor. A tensile testing machine is provided to test the strength of conductors manufactured.

JOB NO. : DCIL-105 EXHIBIT : 12

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
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## PROJECT PROFILE ON BARE WIRES

## LIST OF EQUIPMENT AND BRIEF SPECIFICATIONS

| Sl. No. | Name of the Equipment | Brief Specifications | | | Nos Required | Unit Price (US$) | Total Price (US$) |
|---|---|---|---|---|---|---|---|
| **Main Plant** | | | | | | | |
| 1. | Rod Breakdown Machine | Type | : | Wet, slip type, continuous machine along with spooler | 3 | 184622 | 553866 |
| | | Inlet wire size (mm) | : | 9.5 aluminium | | | |
| | | Finished wire size (mm) | : | 1.4 min., 4.0 max. | | | |
| | | No. of dies | : | 13 | | | |
| | | Capstan Dia (mm) | : | 450 max. | | | |
| | | Motor power (KW) | : | 160 | | | |
| 2. | High Speed Tubular Stranding Machine | Type | : | Under roller type machine for stranding steel core wire with pay-off and take-up bobbins | 1 | 150274 | 150274 |

JOB NO. : DCIL-105 EXHIBIT : 12

| Sl. No. | Name of the Equipment | Brief Specifications | | Nos Required | Unit Price (US$) | Total Price (US$) |
|---|---|---|---|---|---|---|
| | | No. of bobbins | : 1+6 | | | |
| | | Bobbin capacity | : 215 kg. | | | |
| | | Range of wires to be stranded | : 1.5 - 4.5 mm | | | |
| | | Motor power (KW) | : 45 | | | |
| 3. | Rigid Stranding Machine | Type | : Unit complete with pay-off and take-up reels, and controls | 1 | 111632 | 111632 |
| | | No. of bobbins | : 1+12 | | | |
| | | Bobbin capacity | : 75 kg. | | | |
| | | Motor power (KW) | : 40 | | | |
| 4. | Rigid Stranding Machine | Type | : Unit complete with pay-off and take-up reels, and controls | 1 | 128806 | 128806 |
| | | No. of bobbins | : 1+12+18+24 | | | |
| | | Bobbin capacity | : 75 kg. | | | |
| | | Motor power (KW) | : 80 | | | |

JOB NO. : DCIL-105

EXHIBIT : 12

| Sl. No. | Name of the Equipment | Brief Specifications | | | Nos Required | Unit Price (US$) | Total Price (US$) |
|---|---|---|---|---|---|---|---|
| 5. | Pointing and Threading Machine | Type | : | Complete unit to prepare conical heads for wire drawing | 3 | (included in - 1) | |
| | | Motor power (KW) | : | 7 | | | |
| 6. | Cold Pressure Butt Welding Machine | Type | : | Portable | 4 | 1000 | 4000 |
| | | Capacity | : | Aluminium wire (1 - 4.7 mm dia) | | | |
| | | | | Aluminium alloy wire (1 - 3.5 mm dia) | | | |
| 7. | Cold Pressure Butt Welding Machine | Type | : | Portable | 4 | 1000 | 4000 |
| | | Capacity | : | Aluminium wire (0.5 - 1.5 mm dia) | | | |
| 8. | Tensile Testing Machine | Measuring Range | : | 0 - 250 kgf | 1 | 1000 | 1000 |
| | | Standard Speed | : | 500 mm per minute | | | |
| | | Grip Separation | : | 1000 mm (max.) | | | |
| | | Motor Power (KW) | : | 0.37 | | | |
| | | | | | | Sub-total | 353575 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 12

| Sl. No. | Name of the Equipment | Brief Specifications | | | Nos Required | Unit Price (US$) | Total Price (US$) |
|---|---|---|---|---|---|---|---|
| **Material Handling Equipment** | | | | | | | |
| 1. | E.O.T. Crane | Capacity (tons) | : | 5 | 1 | 37783 | 37783 |
| | | Span (m) | : | 16 | | | |
| | | Class | : | III | | | |
| 2. | Electric Hoist | Type | : | Overhead travelling, electrically operated with pendant control | 2 | 350 | 700 |
| | | Capacity (tons) | : | 1 | | | |
| | | Span (m) | : | 7.0 | | | |
| 3. | Electric Hoist | Type | : | Overhead travelling, electrically operated with pendant control | 2 | 380 | 760 |
| | | Capacity (tons) | : | 1 | | | |
| | | Span (m) | : | 9.0 | | | |
| | | | | | | Sub-total | 39243 |

JOB NO. : DCIL-105

EXHIBIT : 12

| Sl. No. | Name of the Equipment | Brief Specifications | | | Nos Required | Unit Price (US$) | Total Price (US$) |
|---|---|---|---|---|---|---|---|
| **Tool Room and Maintenance** | | | | | | | |
| 1. | Precision Lathe | Centre height | : | 220 mm | 1 | 29280 | 29280 |
| | | Centre distance | : | 1500 mm | | | |
| 2. | Universal Milling Machine | Table size | : | 310 mm x 1520 mm | 1 | 20830 | 20830 |
| 3. | Column Drilling Machine | Drilling capacity | : | 40 mm | 1 | 5000 | 5000 |
| 4. | Bench Grinder | Type | : | Double ended | 1 | 1200 | 1200 |
| | | Wheel size (mm) | : | 205 x 25 x 19 | | | |
| 5. | Arc Welding Set | Current Range | : | 70-450 Amps. | 1 | 4500 | 4500 |
| 6. | Rectifier DC Welding Set | Current Range | : | 55-500 Amps. | 1 | 2700 | 2700 |
| 7. | Electric Heat Treatment Furnace | Max. Temperature | : | 1350 °C | 1 | 3500 | 3500 |
| | | Rating | : | 60 KVA | | | |
| | | Chamber Size (mm) | : | 300 x 300 x 150 | | | |

JOB NO. : DCIL-105 EXHIBIT : 12

| Sl. No. | Name of the Equipment | Brief Specifications | | | Nos Required | Unit Price (US$) | Total Price (US$) |
|---|---|---|---|---|---|---|---|
| 8. | Screw Jack | Type | : | Ratchet Type, lifting and traversing screw jacks | 2 | 300 | 600 |
| | | Capacity (Tons) | : | 5 | | | |
| 9. | Collapsible Ladder | Type | : | Self-supporting extendable all aluminium ladder | 1 | 150 | 150 |
| | | Closed Height | : | 5 m | | | |
| | | Extended Height | : | 9 m | | | |
| 10. | Collapsible Ladder | Type | : | Self-supporting extendable all aluminium ladder | 1 | 140 | 140 |
| | | Closed Height | : | 3 m | | | |
| | | Extended Height | : | 5.5 m | | | |
| 11. | Battery Charger | No.of phases | : | 1 | 2 | 100 | 200 |
| | | Input voltage | : | 240 V | | | |
| | | Output voltage | : | 36 V | | | |
| 12. | Electrical Testing and Measuring Instruments | Standard | | | Lump sum | | 1000 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 12

| Sl. No. | Name of the Equipment | Brief Specifications | Nos Required | Unit Price (US$) | Total Price (US$) |
|---|---|---|---|---|---|
| 13. | Portable Electric Tools | Standard | Lump sum | | 2000 |
| 14. | Welding Accessories | Standard | Lump sum | | 1500 |
| 15. | Mechanical Measuring Devices and Instruments | Standard | Lump sum<br>Sub-total | | 1500<br>75100 |
| **Auxiliary Equipment** | | | | | |
| 1. | Wood Working Tools | - | 1 set | | |
| 2. | Weigh bridge | Type : Electronic, Road Transport<br>Capacity (Tons) : 25<br>Platform size : 8 m x 3 m | 1 | | |
| 3. | Portable Platform Weighing Scale | Type : Arm<br>Capacity (Kgs) : 500<br>Platform size : 1.25 m x 1.25 m | 1 | | |
| 4. | Work Bench | 50 mm laminated top in angle iron frame with four angle iron legs | 2 | | |

JOB NO. : DCIL-105

EXHIBIT : 12

| Sl. No. | Name of the Equipment | Brief Specifications | Nos Required | Unit Price (US$) | Total Price (US$) |
|---|---|---|---|---|---|
| | | Size of Top surface (mm) : 2000 x 850 | | | |
| | | Floor to Top height (mm) : 900 | | | |
| 5. | Surface Plate | Surface plate made of close grained cast iron of 200 BHN sturdy angle iron frame and adjusting jacks | 1 | | |
| | | Top surface size : 1000 x 600 mm | | | |
| 6. | Steel Tote Box | Welded steel construction covered with heavy duty wire mesh | 30 | | |
| | | Size (mm) : 1000 x 1000 x 450 | | | |
| 7. | Closed Storage Shelves | - | - | | |
| 8. | Open Storage Shelves | - | - | | |
| 9. | Workers' Tool Cabinet | - | - | | |
| 10. | Cutting Tools | - | - | | |
| 11. | Lubrication Equipment | - | - | | |
| 12. | Other Hand Tools | - | - | | |
| | | | | Lump sum | 3000 |
| | | | | TOTAL | 1069921 |

DEVELOPMENT CONSULTANTS

# SECTION - 8
# RAW MATERIALS AND OTHER INPUTS

## RAW MATERIALS AND OTHER INPUTS

Raw materials required for the AAC and ACSR types of conductors are electrical grade aluminium and steel. Electrical grade aluminium is normally available in the form of rods of 9 mm diameter, which are then reduced to smaller diameters and stranded to form the conductor. Steel wire drawing may turn out to be an expensive proposition, particularly when the quantities required are small. Therefore, galvanized steel wires of required sizes may be procured.

While estimating the requirement of raw materials, the following assumptions have been made :

- Electrical conductor (EC) grade aluminium/aluminium alloy will be procured in the form of rods of 9 mm diameter.
- Galvanised steel core wires of required diameter will be procured for stranding.
- Part of the output will be in the form of AAC or aluminium alloy conductors.
- Average plant capacity will be 16,000 tonnes per year or 48,000 Km per year.
- 5% allowance has been provided to take care of material wastage.

Estimated requirement of basic raw materials, packing wood and other major consumables is presented in Exhibit-13.

JOB NO. : DCIL-105 EXHIBIT : 13

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
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ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

REQUIREMENT OF RAW MATERIALS AND CONSUMABLES

| Sl. No. | Component | Material Specification | Annual Requirement (Tonnes) | Price (US$) |
|---|---|---|---|---|
| 1. | Galvanised Steel Wires | Diameter ranging from 1.5 mm to 4.5 mm | 4300 | 3074500 |
| 2. | Aluminium Rods | Electrical Conductor Grade Aluminium Rods (9 mm dia) | 12600 | 56637000 |
| 3. | Packing Wood | Teak wood for packing | 900m² | 4500 |
| 4. | Grease and lubricating oil | Lump sum | | 650 |
| 5. | Misc. items like packing nails, nuts and bolts, cutting tools, cutting oil, etc. | Lump sum | | 3000 |
| | | | TOTAL | 59719650 |

# SECTION - 9
# UTILITIES

# UTILITIES

The major utilities required for the plant include power, water and compressed air. The manufacturing process does not generate any toxic or non-toxic effluent. Therefore, effluent treatment facilities are not required.

## Power

Power is required to operate all equipment in the factory, the airconditioning system in the office, and for lighting and air-circulation. As all the equipment will not be operated simultaneously, the following load factors have been assumed while computing the requirement of power :

| | | |
|---|---|---|
| Main plant and Equipment | : | 0.5 |
| Air-circulation and lighting of Shop | : | 0.7 |
| Airconditioning and lighting of Office | : | 0.7 |
| Water pump and compressors | : | 0.4 |
| Lighting of other areas | : | 0.5 |

Based on the above load factors and a power factor of 0.8, the total requirement of power works out to 700 KVA for each plant. Considering future expansion needs, the connected load for the plant is estimated as 1000 KVA. It is assumed that power will be available to the plant from an 11 KV overhead transmission line. Two 500 KVA transformers have been provided for stepping down this voltage to 440/220 volts.

Exhibit-14 presents a summary of power requirement.

**Compressed Air**

Compressed air is required in the plant for operating pneumatic brakes in the wire drawing and stranding machines. Total compressed air requirement will be about 3 $m^3$ at a pressure of 7 $kg/cm^2$. Two compressors, each of 3.5 $m^3$ capacity, have been provided for this purpose. While one compressor is in operation, the other will be kept as stand-by.

**Water**

There is no requirement of process water in the plant. However, water will be required for washing, gardening, the airconditioner cooling system and human needs. Water for human needs is estimated at 100 litres per person per day. Exhibit-15 gives the estimated water requirement.

Exhibit-16 gives a list of equipment required for utilities.

Other miscellaneous equipment required in the plant are listed in Exhibit-17.

JOB NO. DCIL-105 EXHIBIT : 14

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### SUMMARY OF POWER REQUIREMENT

| Sl. No. | Description | Power Required (KW) |
|---|---|---|
| 1. | Requirement of power for main plant and equipment | 900 |
| 2. | Power for utilities such as water pump, compressor, etc. | 40 |
| 3. | Power for airconditioning and lighting of offices | 70 |
| 4. | Power for air-circulation and lighting of shops | 15 |
| 5. | Power for general area lighting | 8 |
| | Total | 1033 |
| | Say | 1100 KW |
| | Average requirement of power | 550 KW |
| | Average demand, based on a power factor of 0.8 | 700 KVA |

JOB NO. : DCIL-105 EXHIBIT : 15

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

ESTIMATED REQUIREMENT OF WATER

(Figures in Ltrs/hr)

| Sl. No. | Description | Requirement |
|---|---|---|
| 1. | Human needs | 185 |
| 2. | Cooling water for airconditioning system | 600 |
| 3. | Washing, gardening and other miscellaneous requirements | 200 |
| | Total | 985 |
| | Say | 1000 |

JOB NO. : DCIL-105 EXHIBIT : 16

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
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## PROJECT PROFILE ON BARE WIRES

### REQUIREMENT OF EQUIPMENT FOR UTILITIES

| Sl. No. | Description | Nos Required | Total Price (US$) |
|---|---|---|---|
| 1. | Oil cooled transformer 11 KV/440-220 Volts, 3ph, 50 Hz Capacity : 500 KVA | 2 | 23,400 |
| 2. | Switchgears, MCC, distribution boards, cables | - | 4,500 |
| 3. | Centralised airconditioning system with 2 air-handling units and cooling tower Capacity : 45 TR | 1 | 50,800 |
| 4. | Lights, air coolers and fans | - | 3,000 |
| 5. | Air cooled compressors of 3.5 $m^3$ capacity (delivery pressure 7 $Kg/cm^2$), piping and valves | 2 | 6,000 |
| 6. | 2 Nos borewell pumps of 150 lpm capacity, valves, pipes and fittings, 2 nos 4" dia tubewells, overhead RCC water tank of 8 $m^3$ capacity | - | 5,000 |
| | Total | | 92,700 |

JOB NO. : DCIL-105 EXHIBIT : 17

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**REQUIREMENT OF MISCELLANEOUS EQUIPMENT**

| Sl. No. | Description | Total Price (US$) |
|---|---|---|
| 1. | Fire fighting system with hydrant, piping, etc. | 8,000 |
| 2. | Telecommunication system with EPABX facilities, telephone instruments, cabling, etc. | 25,000 |
| 3. | Office equipment and furniture | 22,000 |
| 4. | Passenger transport vehicle - 1 no. | 26,000 |
| 5. | Cars - 2 nos. | 19,350 |
| | TOTAL | 1,00,350 |

# SECTION - 10
# SPACE AND LAYOUT

## SPACE AND LAYOUT

The main plant has two major work centres: Wire drawing and Stranding. Floor space for the machines has been worked out, taking into account the following requirement

- o area occupied by equipment
- o working area
- o space for movement of men and materials
- o space for temporary storage of materials

The Workshop will also include separate stores for raw materials and finished goods to facilitate storage handling and flow of materials.

Other buildings in the plant include :

- o office building
- o canteen
- o garage
- o security/gate office
- o transformer room
- o compressor room
- o pump house

Summary of space requirement is given in Exhibit-18.

**Workshop Building**

The Workshop building has been designed so as to ensure smooth movement of men, materials and handling equipment. Both raw materials and finished goods stores are serviced by overhead cranes/hoists. Finished conductor bundles can be loaded on to trucks using EOT crane.

Layout of the workshop building is shown in Exhibit-19. The Shop office is proposed to be located next to the Quality Control section. This office will have glass panes on all sides to aid supervision and control.

The Workshop building will be made of reinforced concrete construction. The columns, roof, floor, etc., shall also be of RCC structure. The building will be designed in a manner as to ensure adequate natural lighting and ventilation.

**Office Building**

This will be a two-storied RCC brick building with central airconditioning.

**Other Buildings**

All the other buildings will be of masonry brick construction.

Exhibit-20 presents the block layout of the plant, showing the relative locations of different buildings.

Estimated costs of civil work including land development, fencing, drainage, roads and building construction are shown in Exhibit-21.

JOB NO. : DCIL-105 EXHIBIT : 18

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### SUMMARY OF SPACE REQUIREMENT

| Sl. No. | Description | Area (Sqm) |
|---|---|---|
| A. Workshop | | |
| o | Raw Material and Consumable Store (covered) | 200 |
| o | Raw Material Store (open) | 600* |
| o | Wire Drawing | 225 |
| o | Stranding | 320 |
| o | Finished Goods Stores and Despatch (covered) | 400 |
| o | Workers' Rest Area | 25 |
| o | Tool Room | 135 |
| o | Wood Store and Carpentry Shop | 135 |
| o | Intermediate Storage Area | 300 |
| o | Workshop Office | 100 |
| o | Toilets | 56 |
| | Sub-total | 1896 |
| o | Aisles and Gangways (30% of Sub-total) | 570 |
| | Total | 2466 |
| | Say | 2500 |

JOB NO. : DCIL-105 EXHIBIT : 18

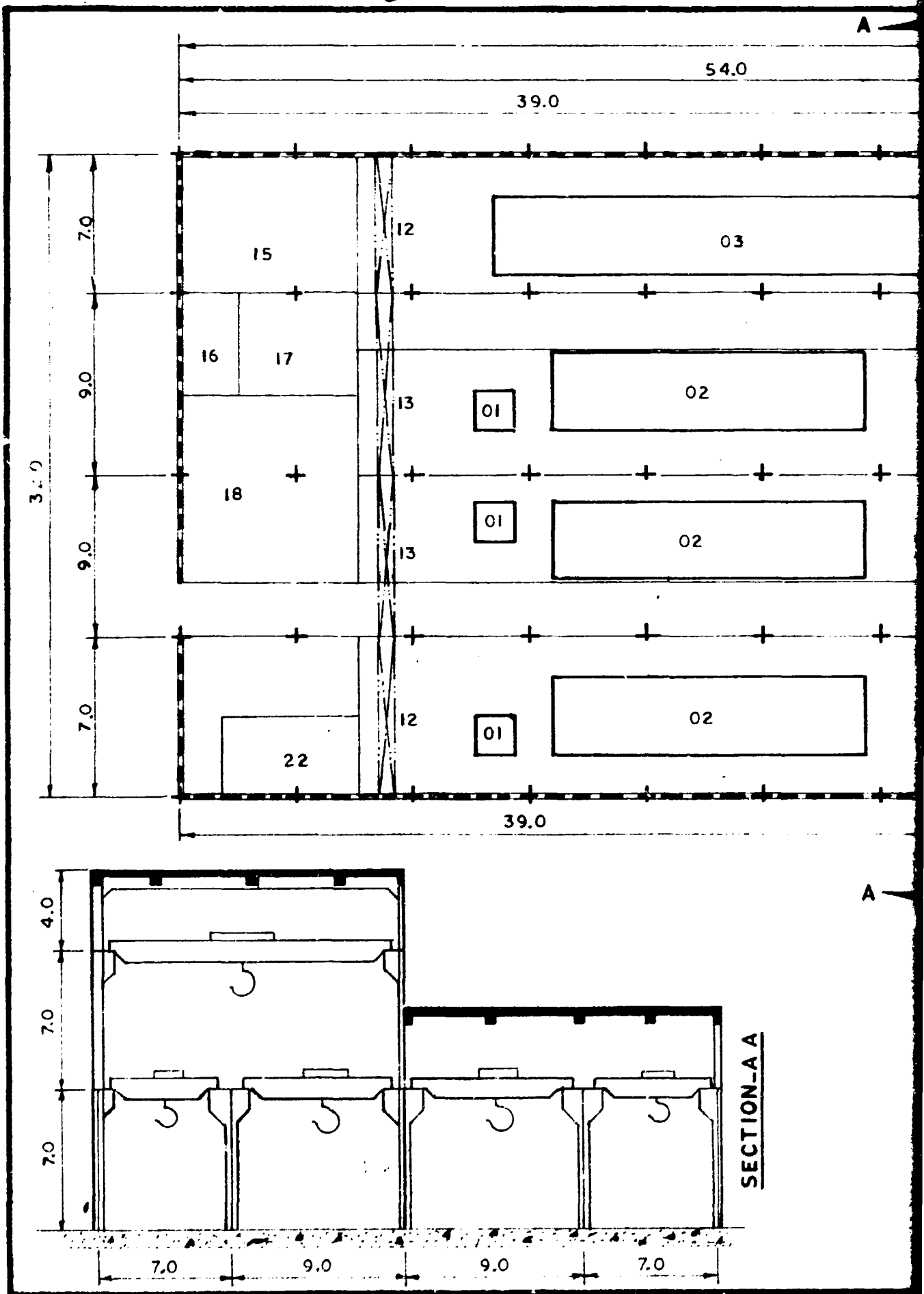
| Sl. No. | Description | Area (Sqm) |
|---|---|---|
| B. | Office Building (Two storied) | |
| | o Office | 250 |
| | o Conference Room | 28 |
| | o Lecture Room | 56 |
| | o First Aid Room | 12 |
| | o Driver's Rest Room | 10 |
| | o Reception and Lobby | 56 |
| | o Tea Room | 12 |
| | o Airconditioning Unit and Electrical Distribution | 15 |
| | o Toilets | 42 |
| | Sub-total | 481 |
| | Add 30% for staircase and aisles | 144 |
| | Total | 625 |
| | Plinth Area (since double storied) | 315 |
| C. | Other Buildings | |
| | o Time Office and Security | 36 |
| | o Garage | 80 |
| | o Canteen | 336 |
| | o Transformer Room | 24 |
| | o Compressor Room | 16 |
| | o Pump House | 16 |
| | Sub-total | 508 |

JOB NO. : DCIL-105 EXHIBIT : 18

| Sl. No. | Description | Area (Sqm) |
|---|---|---|
| D. | Total built-up area (A + B + C) | 3323 |
| E. | Area for future expansion (50% of workshop built-up area A) | 1250 |
| F. | Area for roads | 2500 |
| | Sub-total | 7073 |
| | Total Land Area | 21600 |

* open area - not included in the shop area.

SEC 1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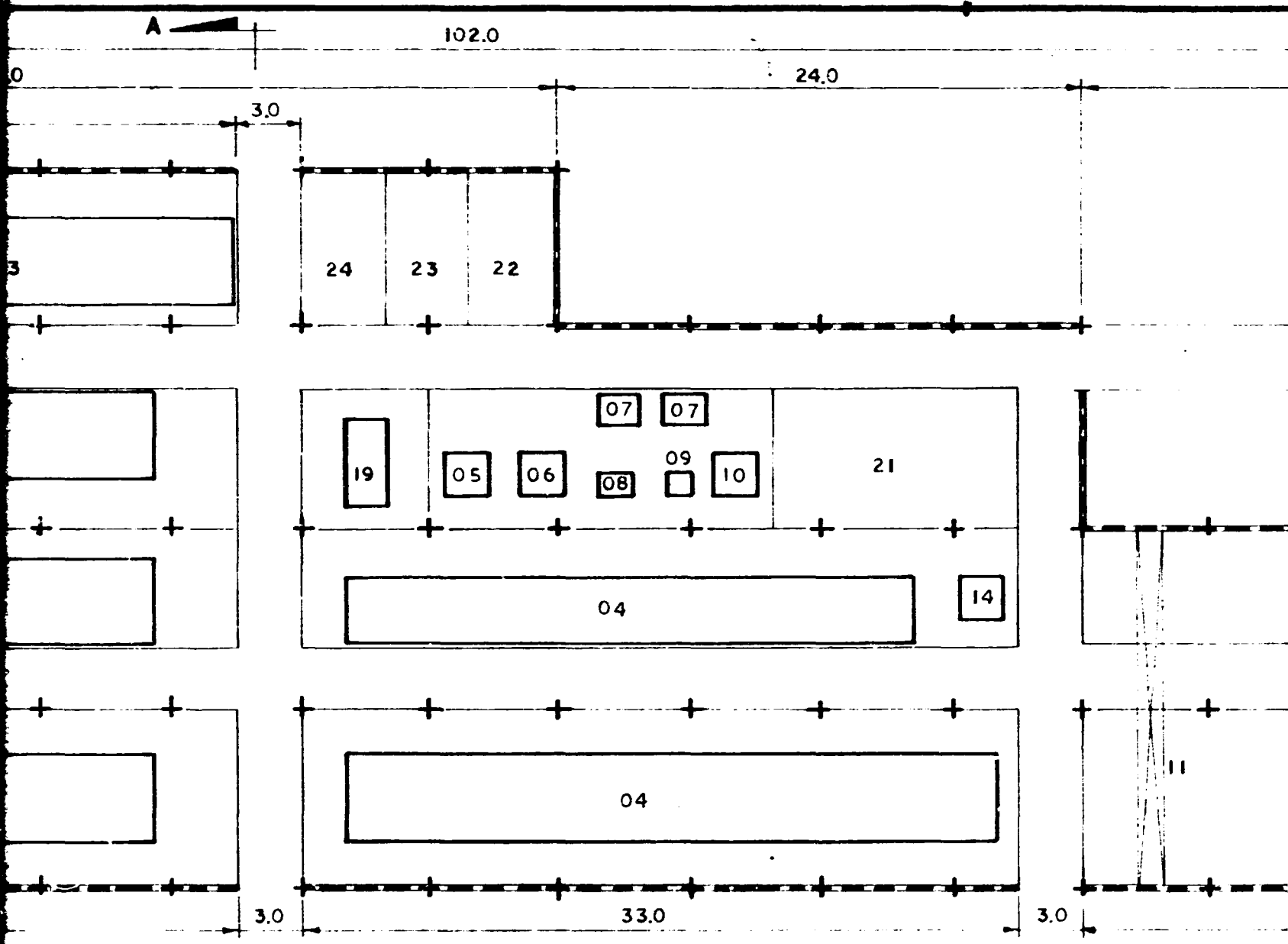
SECTION A-A

SEC 2




A

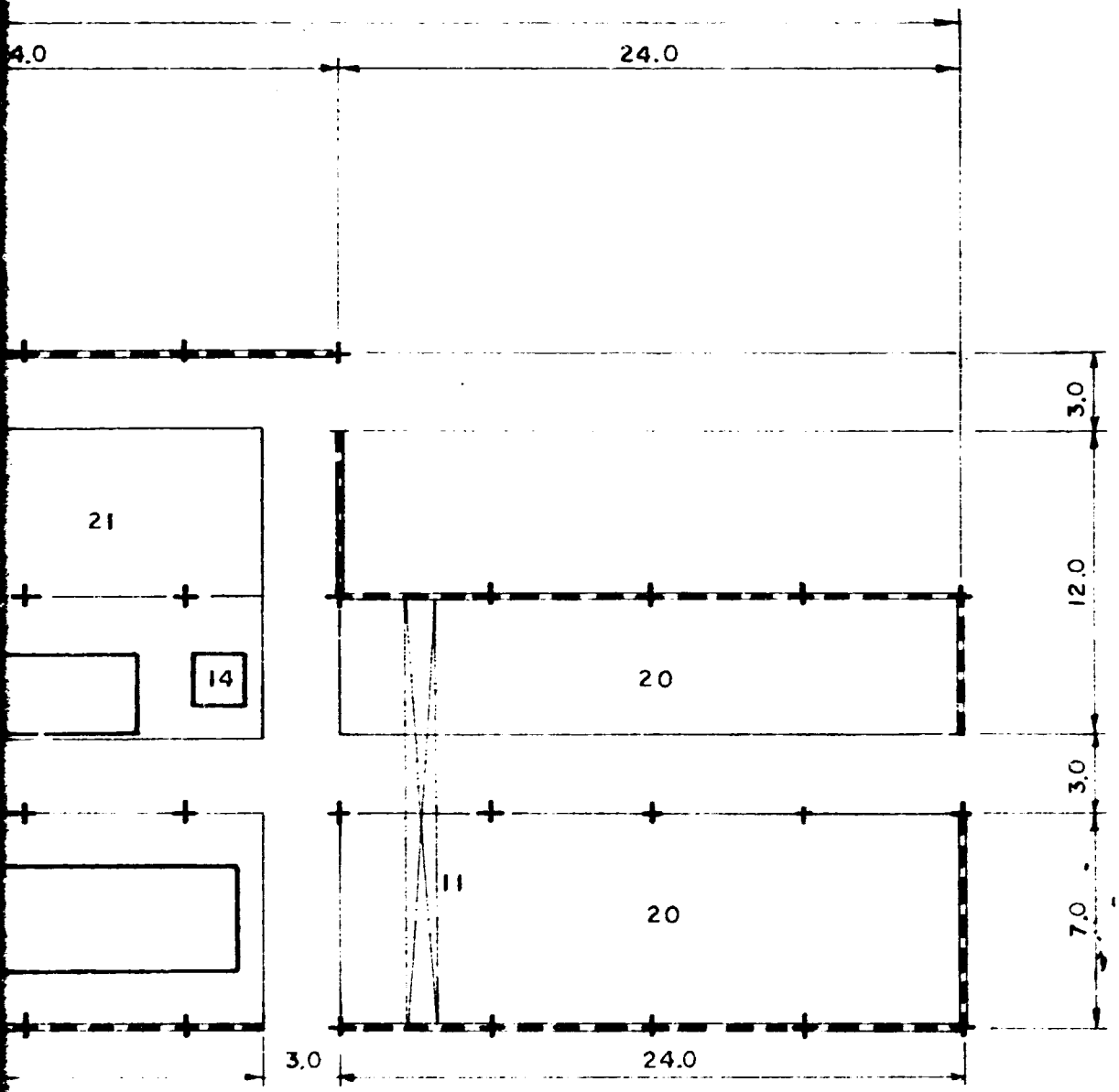
## LEGEND

01 POINTING & THREADING MACHINE-3NOS.
02 WIRE DRAWING MACHINE - 3 NoS
03 TUBULAR STRANDING MACHINE
04 RIGID STRANDING MACHINE - 2 NoS
05 TOOL RCOM LATHE
06 UNIVERSAL MILLING MACHINE
07 WORK BENCH - 2 NoS
08 COLUMN DRILLING MACHINE
09 BENCH GRINDER
10 ELECTRIC HEAT TREATMENT FURNACE
11 E.O.T CRANE
12 ELECTRIC HOIST - 7.0 M. SPAN - 2 NoS
13 ELECTRIC HOIST - 9.0 M SPAN - 2 NoS
14 TENSILE TESTING MACHINE
15 STEEL WIRE STORE
16 RAW MATERIAL STORES OFFICE
17 RAW MATERIAL CONSUMABLES STORE
18 ALUMINIUM ROD STORE
19 WORKERS REST TABLE
20 DESPATCH STORE
21 WOOD WORKING AREA
22 TOILETS - 2 NoS
23 QUALIT / CONTROL & INSPECTION
24 WORKSHOP OFFICE

SECTION A-A

SEC 3






## NOTE

ALL DIMENSIONS ARE IN METRE

16 RAW MATERIAL STORES OFFICE
17 RAW MATERIAL CONSUMABLES STORE
18 ALUMINIUM ROD STORE
19 WORKERS REST TABLE
20 DESPATCH STORE
21 WOOD WORKING AREA
22 TOILETS - 2 NOS
23 QUALITY CONTROL & INSPECTION
24 WORKSHOP OFFICE

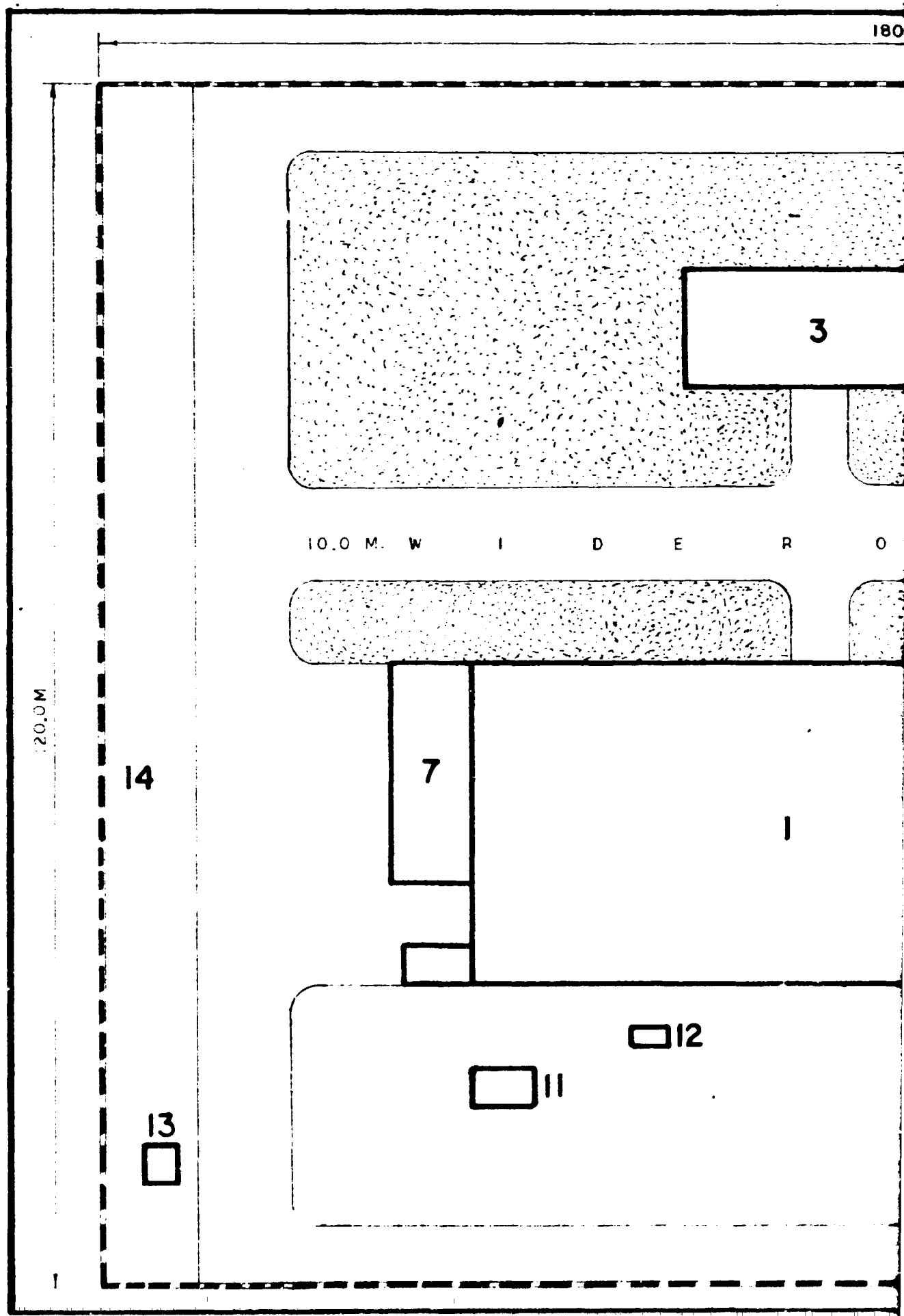
PLANT LAYOUT FOR MANUFACTURING BARE WIRES

UNITED NATION INDUSTRIAL DEVELOPMENT ORGANIZATION
&
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

**DEVELOPMENT CONSULTANTS**
**CONSULTING ENGINEERS**
BOMBAY ● CALCUTTA ● MADRAS ● NEW DELHI

| | |
|---|---|
| DRAWN MUKUL CHOWDHURY | DATE 1.12.92 |
| PROJ. ENGR. BS/MC | SCALE 1:250 |
| DEPT. HEAD | J.B NO. DCIL-105 |
| DWG. NO. EXHIBIT-19 | REV. NO. |

SEC 1



SEC 2

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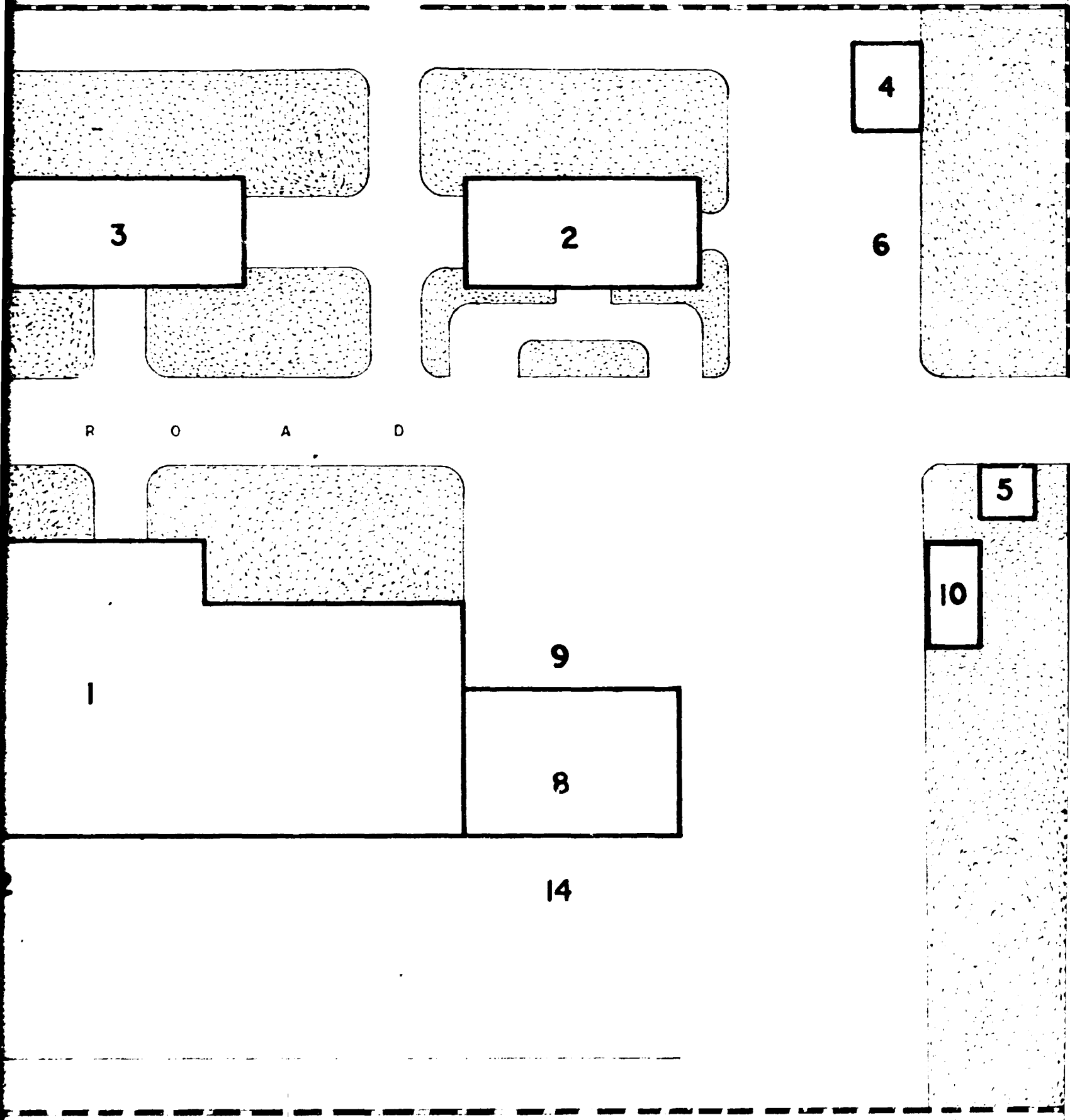

SEC 3

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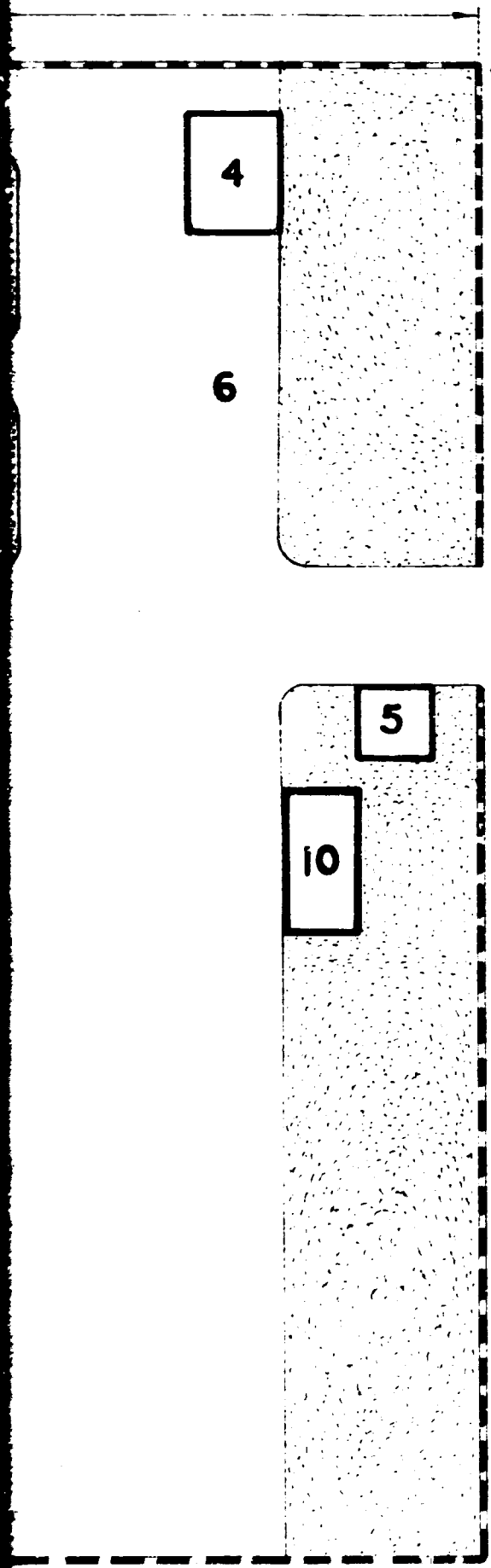



## LEGEND

1 WORKSHOP BUILDING
2 OFFICE
3 CANTEEN
4 GARAGE
5 SECURITY TIME OFFICE
6 CAR PARK
7 RAW MATERIAL STORE
8 FINISHED GOODS STORE
9 DESPATCH BAYS
10 WEIGH BRIDGE
11 TRANSFORMER ROOM
12 COMPRESSOR ROOM
13 PUMP HOUSE AND TANK
14 OPEN STORAGE YARD

BLOCK LAYOUT

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
&
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

**DEVELOPMENT CONSULTANTS**
**CONSULTING ENGINEERS**
BOMBAY ● CALCUTTA ● MADRAS ● NEW DELHI

| | |
|---|---|
| DRAWN M.C HOWDHURY | DATE 25.11.92 |
| PROJ. ENGR. M C | SCALE 1:500 |
| DEPT. HEAD | JOB NO. DCIL.105 |

DWG. NO. EXHIBIT_20 REV. NO.

JOB NO. : DCIL-105

EXHIBIT : 21

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

ESTIMATED COST OF CIVIL WORK

| Sl. No. | Description | Area (Sq.m) | Cost (Million US$) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Morocco | Bahrain | Kuwait | Iraq | Syria |
| 1. | Land and Land Development including fencing, drainage and road construction | 21,600 | 3.564 | 3.996 | 4.104 | 4.360 | 3.628 |
| 2. | Workshop Building having a maximum height of 18 metres from floor to top of crane rail | 2,500 | 2.085 | 2.247 | 2.335 | 2.812 | 2.107 |
| 3. | Administrative Building, double storied | 315 | 0.317 | 0.342 | 0.349 | 0.425 | 0.316 |
| 4. | Auxiliary Buildings comprising workshop offices, toilets and washrooms in workshop, refreshment centres, transformer house, pump house, first-aid centre, security, garage and control room | 508 | 0.511 | 0.550 | 0.562 | 0.686 | 0.509 |
| | TOTAL | | 6.477 | 7.135 | 7.350 | 8.783 | 6.560 |

# SECTION - 11
# MANPOWER AND ORGANIZATION

## MANPOWER AND ORGANISATION

The plant will manufacture a relatively low technology product. The manufacturing process involves few operations and equipment. Most of the manufacturing operations will be carried out in two shifts.

Estimates of manpower requirement have been developed, based on the following considerations :

- o plant capacity
- o nature and scope of activities involved
- o process and material handling equipment
- o plant layout and proximity to areas of supervision

The organisation will operate for 300 days in a year, on an average, and will carry out all the activities performed by a manufacturing unit.

In order to plan, organise, coordinate, execute and control, all the necessary activities are grouped under different functions. The major functional areas in the plant under which manpower is categorised, include -

- Production
- Materials
- Marketing
- Accounts
- Personnel and Administration

The plant will be under the overall supervision and control of a General Manager. Each of the above-mentioned functions will be carried on by separate departments. They will be

looked after by the Production Manager, Materials Manager, Marketing Manager, Chief Accountant-cum-Company Secretary and Personnel Manager respectively. All of them will report directly to the General Manager.

**Production**

Both wire drawing and stranding operations will be carried out in 2 shifts per day. In each shift, production will be under the overall supervision of a Shift In-charge, who will report to the Production Manager. Production planning and coordination will be handled by a Planning Engineer. Since the number and variety of equipment are limited, maintenance is also included within the control of the Production Manager. One Maintenance Engineer per shift will be required for the purpose. The product does not require much of design or engineering input. Therefore, a separate department for design has not been provided. A Technical Assistant has been included in the Production Department, to handle design drawings, if necessary.

Exhibit-22 presents the total shift-wise requirement of workmen in the plant, categorised by equipment/facility and level of skill.

**Materials**

The materials function will be handled by a Materials Manager. The stores will function in only one shift. Raw materials and consumable stores will be under the charge of the Stores Supervisor, while the finished goods' stores will be looked after by the Despatch Supervisors.

**Marketing**

Conductors manufactured in all the plants, except for the one in Iraq, are meant for both domestic and export markets. The marketing function will be headed by a Marketing Manager who will be assisted by two Marketing Executives.

**Accounts**

The Accounts Department will be headed by a Chief Accountant-cum-Company Secretary, assisted by an Accountant, two Accounts Assistants, a Cashier and a Steno-typist.

**Personnel and Administration**

This Department will deploy staff to handle personnel, labour and welfare, security and other administrative functions.

Headed by the Personnel Manager, this Department shall also include a Personnel Officer, a Security Officer and a Labour and Welfare Officer, among others.

**Quality Control**

The Quality Control section will be under the direct supervision of the General Manager. This function will be discharged by a Quality Control In-charge, who will be assisted by two Quality Control Inspectors per shift. They will inspect and approve raw materials and finished goods.

Exhibit-23 gives a comprehensive list of requirement of managerial, supervisory and other staff for the plant.

Organisational structure for the entire plant is given in Exhibit-24.

**Salaries and Benefits**

The estimated monthly salaries and allowances payable to employees in each level, is indicated in Exhibit-25. It may be observed that the personnel in the plant have been grouped into seven levels, for the purpose of salary administration.

JOB NO. : DCIL-105 EXHIBIT : 22

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

REQUIREMENT OF WORKMEN IN THE PLANT

| Equipment/Section | No. of Machines | No. of Shifts | Skilled | Unskilled |
|---|---|---|---|---|
| Rod Breakdown Machine | 3 | 2 | 6 | 6 |
| High Speed Tubular Stranding Machine | 1 | 1 | 1 | 1 |
| Rigid Stranding Machine | 2 | 2 | 4 | 4 |
| Pointing and Threading Machine | 3 | 2 | 2 | - |
| EOT Crane | 1 | 2 | 2 | 2 |
| Forklift | 2 | 2 | 4 | - |
| Mobile Crane | 1 | 1 | 1 | - |
| Truck | 1 | 1 | 1 | - |
| Trolley | - | - | - | 8 |
| Tool Room and Mechanical Maintenance | - | - | 4 | 2 |
| Carpentry and Packing | - | - | 2 | 4 |
| Plumbing | - | - | 1 | - |
| Masonry | - | - | 1 | - |
| Electricians | - | - | 2 | - |
| Pump House | - | - | 2 | - |
| Electrical Transformer | - | - | 2 | - |
| Plant Upkeep | - | - | - | 6 |
| Total | | | 35 | 33 |
| add 10% for absenteeism | | | 4 | 4 |
| | | | 39 | 37 |

JOB NO. : DCIL-105 EXHIBIT : 23

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

REQUIREMENT OF MANAGERIAL, SUPERVISORY AND OTHER STAFF

| Designation | Level | Nos. Required |
|---|---|---|
| General Manager | 1 | 1 |
| Personal Secretary to General Manager | 4 | 1 |
| Production | | |
| Production Manager | 2 | 1 |
| Planning Engineer | 3 | 1 |
| Shift In-charge | 3 | 2 |
| Maintenance Engineer | 3 | 2 |
| Technical Asst.-cum-Draftsman | 4 | 1 |
| Steno-typist | 5 | 1 |
| Sub-total | | 8 |
| Quality Control (QC) | | |
| QC In-charge | 3 | 1 |
| QC Inspector | 4 | 4 |
| Sub-total | | 5 |
| Materials | | |
| Materials Manager | 2 | 1 |
| Stores Supervisor | 3 | 1 |
| Despatch Supervisor | 3 | 1 |

JOB NO. : DCIL-105 EXHIBIT : 23

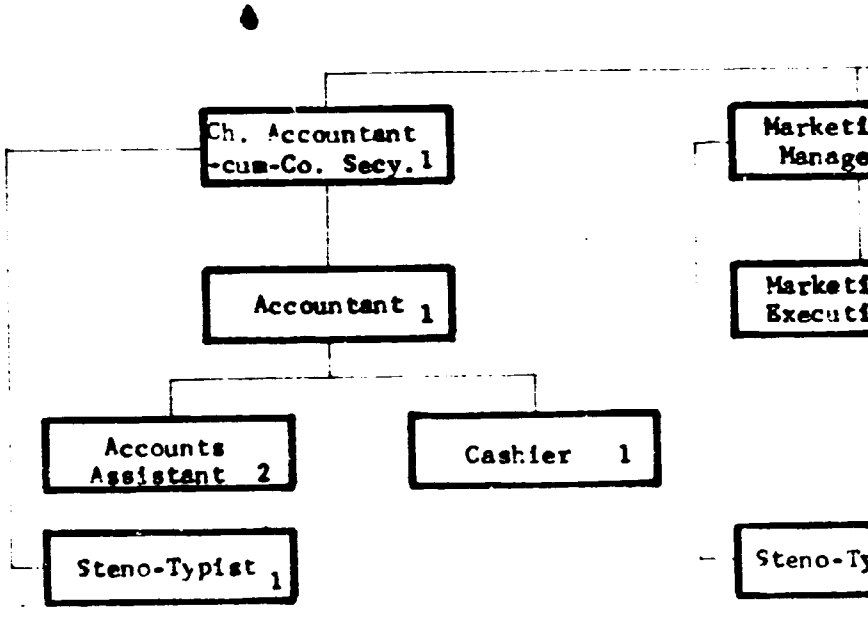
| Designation | Level | Nos. Required |
|---|---|---|
| Purchase Assistant | 4 | 2 |
| Stores Assistant | 4 | 3 |
| Steno-typist | 5 | 1 |
| Helpers | 7 | 3 |
| Sub-total | | 12 |
| **Marketing** | | |
| Marketing Manager | 2 | 1 |
| Marketing Executive | 3 | 2 |
| Steno-typist | 5 | 1 |
| Sub-total | | 4 |
| **Accounts** | | |
| Chief Accountant-cum-Company Secretary | 2 | 1 |
| Accountant | 3 | 1 |
| Accounts Assistant | 4 | 2 |
| Cashier | 4 | 1 |
| Steno-typist | 5 | 1 |
| Sub-total | | 6 |
| **Personnel and Administration** | | |
| Personnel Manager | 2 | 1 |
| Personnel Officer | 3 | 1 |
| Security Officer | 3 | 1 |
| Labour and Welfare Officer | 3 | 1 |

JOB NO. : DCIL-105 EXHIBIT : 23

| Designation | Level | Nos. Required |
|---|---|---|
| Personnel Assistant | 4 | 1 |
| First Aid Assistant | 5 | 2 |
| Steno-Typist | 5 | 2 |
| Telephone Operator | 5 | 1 |
| Canteen In-charge | 5 | 1 |
| Security Guard | 6 | 3 |
| Driver | 6 | 4 |
| Office Boy | 7 | 2 |
| Tea Boy | 7 | 2 |
| Sweeper and Gardener | 7 | 3 |
| Sub-total | | 25 |
| Total | | 62 |

SEC 1

JOB NO. : DCIL-105



SEC 2

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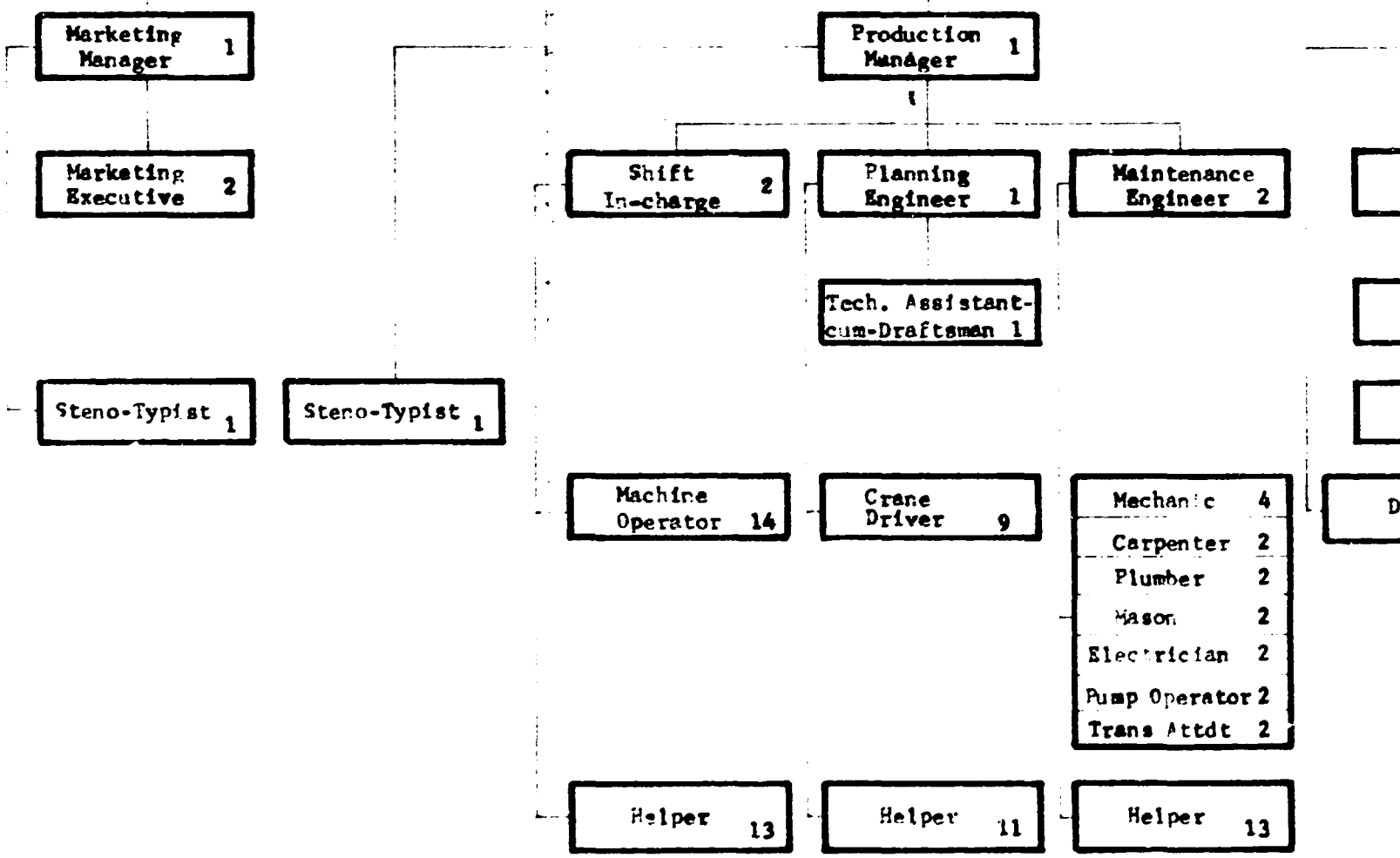
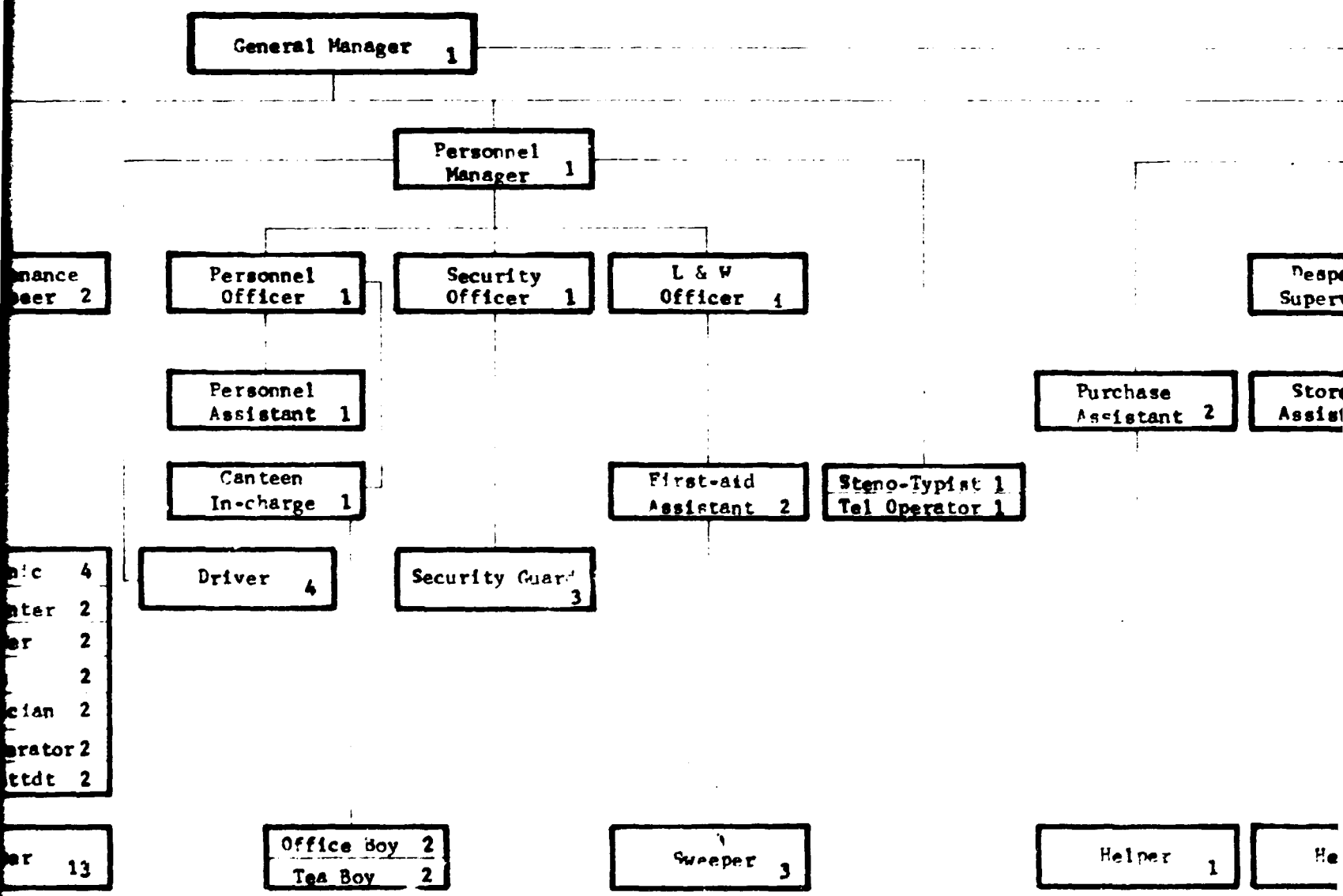


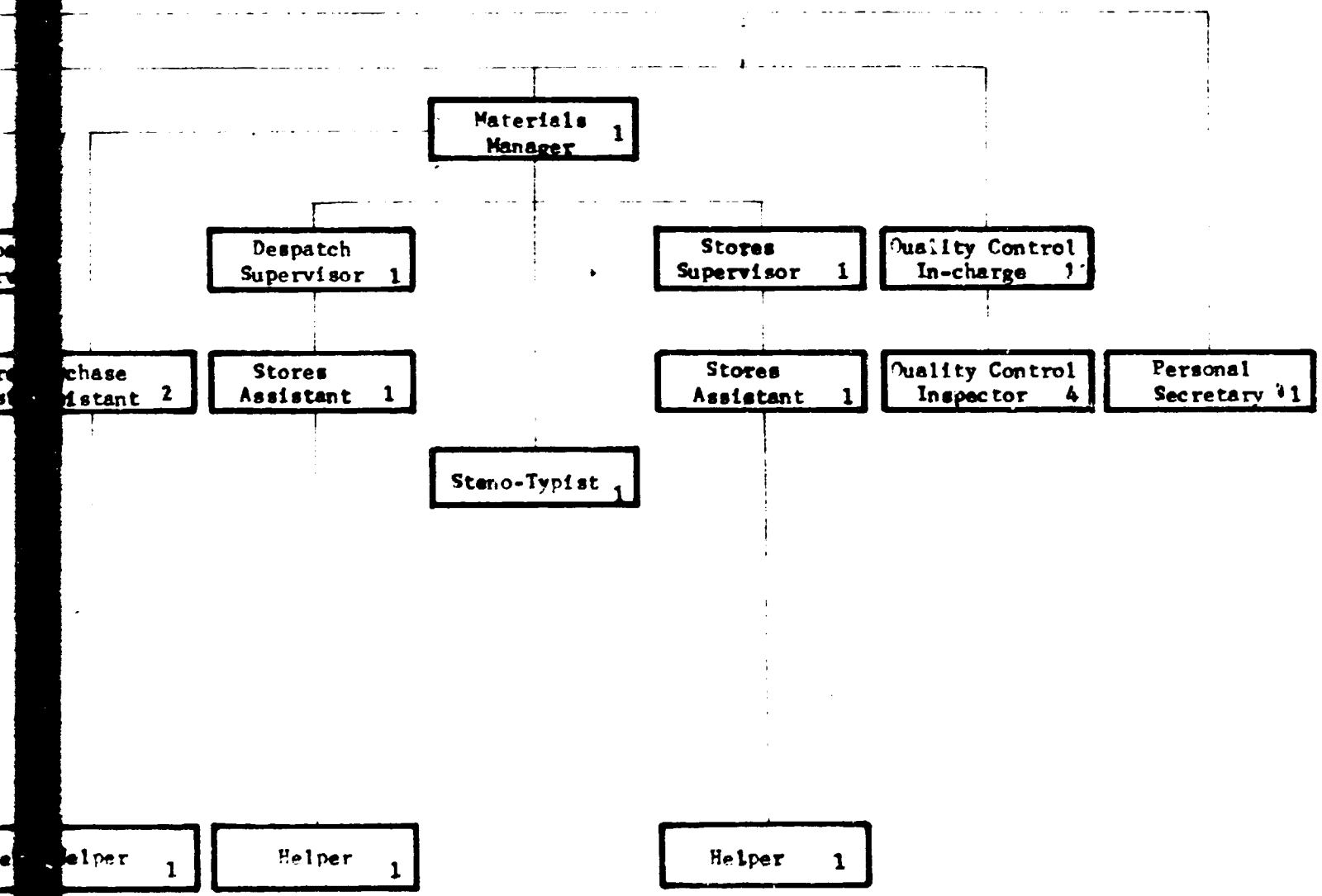
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

# PROJECT PROFILE ON BARE WIRES

## ORGANIZATION STRUCTURE



SEC 4


Materials Manager 1
Despatch Supervisor 1
Stores Supervisor 1
Quality Control In-charge 1
chase istant 2
Stores Assistant 1
Stores Assistant 1
Quality Control Inspector 4
Personal Secretary 1
Steno-Typist 1
elper 1
Helper 1
Helper 1

JOB NO. : DCIL-105 EXHIBIT : 25

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### STATEMENT OF MONTHLY SALARIES AND WAGES

| Level | Nos. Reqd. | Monthly Salary Per Person (US$) | | | | | Total Per Month (US$) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Morocco | Bahrain | Kuwait | Iraq | Syria | Morocco | Bahrain | Kuwait | Iraq | Syria |
| 1 | 1 | 9000 | 8000 | 8000 | 9000 | 8000 | 9000 | 8000 | 8000 | 9000 | 8000 |
| 2 | 5 | 6000 | 5555 | 6000 | 6000 | 3330 | 30000 | 27775 | 30000 | 30000 | 16650 |
| 3 | 14 | 3803 | 3693 | 4615 | 4823 | 2568 | 53242 | 51702 | 64610 | 67522 | 35952 |
| 4 | 15 | 2576 | 2200 | 3500 | 3215 | 1800 | 38640 | 33000 | 52500 | 48225 | 27000 |
| 5 | 10 | 920 | 1166 | 3100 | 1607 | 1244 | 9200 | 11660 | 31000 | 16070 | 12440 |
| 6 * | 46 | 800 | 900 | 1500 | 1000 | 800 | 36800 | 41400 | 69000 | 46000 | 36800 |
| 7 ** | 47 | 245 | 777 | 623 | 482 | 501 | 11515 | 36519 | 29281 | 22654 | 23547 |
| TOTAL | 138 | | | | | | 188397 | 210056 | 284391 | 239471 | 160389 |

* Including skilled workers

** Including unskilled workers

DEVELOPMENT CONSULTANTS

# SECTION - 12
# FINANCIAL ANALYSIS AND EVALUATION

# PLANT LOCATION : MOROCCO

## FINANCIAL ANALYSIS AND EVALUATION

The financial implications of the proposed projects are presented in this Section.

It may be mentioned here, that for the sake of uniformity, the prices of plant and equipment and raw materials have been considered identical for all the countries, where the plants will be set up. Since most of the plant and equipment and raw materials are to be imported, the prevailing international prices of these items have been taken as the basis of calculation. For other cost parameters, which vary from country to country, the figures, as provided by the client has been considered.

### COUNTRY : MOROCCO

The financial analysis and evaluation of the proposed project for setting up of Bare Wire Conductors plant in this country are based on the capacity utilisation, price and costs.

#### *Project Cost*

The estimated cost of the project of setting up a 16,000 TPA plant (equivalent to 48,000 Km per year) is around US $ 10.7 million as can be seen from Exhibit-26. The project cost includes the expenditure towards

- Land and land development
- Building and civil work
- Plant and machinery
- Miscellaneous fixed assets
- Preliminary expenses

- o Pre-operative expenses
- o Technical know-how fees

Preliminary expenses have been assumed on a lumpsum basis on the project cost. Pre-operative expenses have three components, viz., establishment, travelling expenses and miscellaneous expenses. Establishment costs have been computed on the basis of salaries payable and overheads to various personnel who have to be recruited at various levels, during the construction period. Travelling expenss have been taken as approximately 10% of establishment costs in all the nine quarters of the construction period. Miscellaneous expenses have also been taken on a lumpsum basis. Technical know-how fees have been taken as 3.5% of the project cost excluding interest during construction and margin money for working capital.

5% cushion has been provided towards contingency. This cost also includes interest during construction and margin money for working capital.

Phasing of capital expenditure is based on implementation plan, and interest during construction has been computed based on the phasing. These two are presented in Exhibits 27 and 28 respectively.

Margin money for working capital is presented in Exhibit-29. In computing margin money it is assumed that adequate provisions have to be kept towards storage of raw materials and consumables required to be imported.

The project is assumed to be financed by Debt-Equity Ratio of 1:1.

***Production, Sales and Revenue***

Statement of production and sales of various product range and the revenue that will be generated from the sales of the products over the 10-year period are presented in Exhibits 30 and 31 respectively. Capacity utilisation is assumed at the rate of 40% in the first year, 50% in the second year and 60% from the third year onwards.

***Costs***

The annual costs of production and sales computed over 10 years are presented in Exhibit-32. In estimating these costs it is assumed that the salaries and wages will increase at the flat rate of 5% every year.

***Profitability***

Projected profitability statement is presented in Exhibit-33. The average profit before tax works out to 17% of average revenue.

Statement of fixed assets and depreciation under straight line method is presented in Exhibit-34. Tax computation and depreciation for tax are presented in Exhibits 35 and 36 repspectively.

Working capital requirements are shown in Exhibit-37.

Projected cash flow statement and balance sheet over 10-year period are shown in Exhibits 38 and 39 respectively.

The project breaks even at around 24.3% and shows internal rate of return of 73.5% as can be seen from Exhibits 40 and 41 respectively. In computing internal rate of return, outflow is taken as the project cost and inflow is taken as the profit before interest, depreciation and tax.

JOB NO. : DCIL-105

EXHIBIT : 26

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

## PROJECT PROFILE ON BARE WIRES

### ESTIMATED PROJECT COST

('000 US $)

| | Items | Value | Total |
|---|---|---|---|
| 1. | Land and Land Development (@ US$ 165 per m² for 21,600 m²) | 3564.00 | 3564.00 |
| 2. | Building and Civil Work | | |
| i) | Workshop Building (@ US$ 834 per m² for 2,500 m²) | 2085.00 | |
| ii) | Administrative Building (@ US$ 1006 per m² for 315 m²) | 317.00 | |
| iii) | Auxiliary Buildings (@ US$ 1006 per m² for 508 m²) | 511.00 | |
| | Sub-total (2) | | 2913.00 |
| 3. | Plant and Machinery | | |
| i) | Imported | | |
| | - Production equipment | 953.58 | |
| | - Material handling equipment | 39.24 | |
| | - Tool room and maintenance equipment | 74.10 | |
| | - Auxiliary equipment and handtools | 3.00 | |
| | Total F.O.B. Value | 1069.92 | |
| ii) | Insurance & Freight (@ 10% of FOB Value) | 106.99 | |
| iii) | C.I.F. Value | 1176.91 | |
| iv) | Import duty @ 6% on CIF value | 70.61 | |
| v) | Transportation @ 1% of CIF Value | 11.77 | |
| | Landed Cost at Site [Sub-total (3)] | | 1259.30 |

JOB NO. : DCIL-105 EXHIBIT : 26

('000 US $)

| Items | | Value | Total |
|---|---|---|---|
| 4. | Miscellaneous Fixed Assets | | |
| i) | Transformers | 21.40 | |
| ii) | Switchgears | 4.50 | |
| iii) | Central Airconditioning system | 50.80 | |
| iv) | Illumination,Fans and Room Coolers | 3.00 | |
| v) | Water Pumps and Tank | 5.00 | |
| vi) | Compressors | 6.00 | |
| vii) | Fire fighting system | 8.00 | |
| viii) | Telecommunication system | 25.00 | |
| ix) | Office Furniture and Equipment | 22.00 | |
| x) | Vehicles | 45.40 | |
| | Sub-total (4) | | 193.10 |
| 5. | Preliminary Expenses | 25.00 | 25.00 |
| 6. | Pre-operative Expenses | | |
| i) | Establishment | 883.31 | |
| ii) | Travelling Expenses | 87.00 | |
| iii) | Miscellaneous | 45.00 | |
| | | | 1015.31 |
| 7. | Technical Know-how Fees | 343.00 | 343.00 |
| 8. | Sub-total (1 thru 7) | - | 9312.71 |
| 9. | Contingency @ 5% on above | - | 465.64 |
| 10. | Sub-total (8 & 9) | - | 9778.35 |
| 11. | Interest during Construction | - | 685.49 |
| 12. | Margin Money for Working Capital | - | 232.48 |
| | TOTAL COST | - | 10696.32 |

JOB NO. : DCIL-105

EXHIBIT : 27

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PHASING OF CAPITAL EXPENDITURE

('000 US $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1. Land and Land Development | 3564.00 | 0.00 | 712.80 | 1425.60 | 1425.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2. Building and Civil Work | 2913.00 | | | | | | | | | |
| i) Workshop Building | 2085.00 | 0.00 | 0.00 | 0.00 | 521.25 | 521.25 | 521.25 | 521.25 | 0.00 | 0.00 |
| ii) Administrative Building | 317.00 | 0.00 | 0.00 | 0.00 | 0.00 | 126.80 | 126.80 | 63.40 | 0.00 | 0.00 |
| iii) Auxiliary Buildings | 511.00 | 0.00 | 0.00 | 0.00 | 0.00 | 170.33 | 170.33 | 170.33 | 0.00 | 0.00 |
| 3. Plant and Machinery | 1259.30 | | | | | | | | | |
| i) Ordering | 377.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 377.79 | 0.00 | 0.00 | 0.00 |
| ii) Supply, delivery and installation at site | 881.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 859.47 | 22.04 |

JOB NO. : DCIL-105

EXHIBIT : 27

('000 US $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. Miscellaneous Fixed Assets | 193.10 | | | | | | | | | |
| i) Transformers | 23.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.68 | 0.00 | 18.72 | 0.00 |
| ii) Switchgears | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.90 | 0.00 | 1.60 | 0.00 |
| iii) Central Airconditioning system | 50.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.16 | 0.00 | 40.64 | 0.00 |
| iv) Illumination,Fans and Room Coolers | 3.00 | 0.30 | 0.00 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.00 | 0.00 |
| v) Water Pumps and Tank | 5.00 | 0.00 | 0.00 | 0.00 | 2.50 | 2.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| vi) Compressors | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 4.80 | 0.00 |
| vii) Fire fighting system | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.00 | 4.00 | 0.00 |
| viii) Telecommunication system | 25.00 | 0.00 | 2.50 | 0.00 | 0.00 | 2.50 | 5.00 | 5.00 | 5.00 | 5.00 |
| ix) Office Furniture and Equipment | 22.00 | 0.00 | 1.10 | 1.10 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 8.80 |
| x) Vehicles | 45.40 | 0.00 | 9.70 | 9.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 |
| 5. Preliminary Expenses | 25.00 | 12.50 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6. Pre-operative Expenses | 1015.31 | | | | | | | | | |
| i) Establishment | 883.31 | 0.00 | 23.62 | 57.36 | 83.09 | 83.09 | 122.12 | 122.12 | 122.12 | 269.81 |
| ii) Travelling Expenses | 87.00 | 0.00 | 2.00 | 6.00 | 8.00 | 8.00 | 12.00 | 12.00 | 12.00 | 27.00 |
| iii) Miscellaneous | 45.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| 7. Technical Know-how Fees | 343.00 | 17.15 | 68.60 | 68.60 | 34.30 | 34.30 | 34.30 | 34.30 | 34.30 | 17.15 |
| 8. Sub-total (1 thru 7) | 9312.71 | 34.95 | 837.82 | 1571.90 | 2082.48 | 956.51 | 1398.27 | 936.14 | 1111.85 | 180.79 |
| 9. Contingency @ 5% on above | 465.64 | 1.75 | 41.89 | 78.70 | 104.12 | 47.83 | 69.91 | 46.81 | 55.59 | 19.04 |
| 10. Sub-total (8 & 9) | 9778.35 | 36.70 | 879.71 | 1652.60 | 2186.60 | 1004.34 | 1468.18 | 982.95 | 1167.44 | 399.83 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 28

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

ESTIMATION OF INTEREST DURING CONSTRUCTION

('000 US $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Capital Expenditure | 36.70 | 879.71 | 1652.60 | 2186.60 | 1004.34 | 1468.18 | 982.95 | 1167.44 | 399.83 | 9778.35 |
| Margin Money | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 232.48 | 232.48 |
| Total | 36.70 | 879.71 | 1652.60 | 2186.60 | 1004.34 | 1468.18 | 982.95 | 1167.44 | 632.31 | 10010.83 |
| Equity | 18.49 | 443.46 | 839.52 | 1121.23 | 542.58 | 784.45 | 551.86 | 653.15 | 393.42 | 5348.16 |
| Loan | 18.49 | 443.45 | 839.52 | 1121.23 | 542.58 | 784.46 | 551.86 | 653.14 | 393.43 | 5348.16 |
| Total | 36.98 | 886.91 | 1679.04 | 2242.46 | 1085.16 | 1568.91 | 1103.72 | 1306.29 | 786.85 | 10696.32 |

JOB NO. : DCIL-105

EXHIBIT : 28

('000 DS $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| **Interest on loan** | | | | | | | | | | |
| - @ 12% p.a. | 0.28 | 6.65 | 12.59 | 16.82 | 8.14 | 11.77 | 8.28 | 9.80 | 5.90 | 80.23 |
| | | 0.55 | 13.30 | 25.19 | 33.64 | 16.28 | 23.53 | 16.56 | 19.59 | 147.54 |
| | | | 0.55 | 13.30 | 25.19 | 33.64 | 16.28 | 23.53 | 16.56 | 129.05 |
| | | | | 0.55 | 13.30 | 25.19 | 33.64 | 16.28 | 23.53 | 112.49 |
| | | | | | 0.55 | 13.30 | 25.19 | 33.64 | 16.28 | 88.96 |
| | | | | | | 0.55 | 13.30 | 25.19 | 13.64 | 72.68 |
| | | | | | | | 0.55 | 13.30 | 25.19 | 39.04 |
| | | | | | | | | 0.55 | 13.30 | 13.85 |
| | | | | | | | | | 0.55 | 0.55 |
| Total | 0.28 | 7.20 | 26.44 | 55.86 | 80.82 | 100.77 | 120.77 | 138.85 | 154.54 | 685.49 |
| Debt/Equity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

| | | |
|---|---|---|
| MEANS OF FINANCING | EQUITY | 5348.16 |
| | LOAN | 5348.16 |
| | TOTAL | 10696.32 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 29

UNITED NATIONS INDUSTRIAL DEVELOPMPNT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

MARGIN MONEY FOR WORKING CAPITAL

('000 US $)

| Sl. No. | Item | Period (Days) | Cost | Bank Finance Available (%) | (Amount) | Margin Money |
|---|---|---|---|---|---|---|
| 1. | Raw materials & Consumables | 90 | 6184.66 | 100% | 6184.66 | 0.00 |
| 2. | Finished Stock | 30 | 2161.13 | 100% | 2161.13 | 0.00 |
| 3. | Sundry Debtors | 30 | 2580.93 | 100% | 2580.93 | 0.00 |
| | Sub-total | | 10926.72 | | 10926.72 | 0.00 |
| 4. | Expenses | 30 | 232.48 | 0% | 0.00 | 232.48 |
| | Total | | 11159.20 | | 10926.72 | 232.48 |

JOB NO. : DCIL-105

EXHIBIT : 30

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### STATEMENT OF PRODUCTION AND SALES

(in MT)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Working Days/Year | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Utilisation | 40% | 50% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% |
| UHV Conductors | | | | | | | | | | |
| Capacity (MT) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Annual Output (MT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Output/Day (MT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Opening Stock | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Production | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Stock | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sales | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HV Conductors | | | | | | | | | | |
| Capacity (MT) | 5700 | 5700 | 5700 | 5700 | 5700 | 5700 | 5700 | 5700 | 5700 | 5700 |
| Annual Output (MT) | 2280.00 | 2850.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 |
| Output/Day (MT) | 7.60 | 9.50 | 11.40 | 11.40 | 11.40 | 11.40 | 11.40 | 11.40 | 11.40 | 11.40 |

JOB NO. : DCIL-105

EXHIBIT : 30

(in MT)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Opening Stock | 0.00 | 190.00 | 237.50 | 285.00 | 285.00 | 285.00 | 285.00 | 285.00 | 285.00 | 285.00 |
| Production | 2280.00 | 2850.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 |
| Total | 2280.00 | 3040.00 | 3657.50 | 3705.00 | 3705.00 | 3705.00 | 3705.00 | 3705.00 | 3705.00 | 3705.00 |
| Closing Stock | 190.00 | 237.50 | 285.00 | 285.00 | 285.00 | 285.00 | 285.00 | 285.00 | 285.00 | 285.00 |
| Sales | 2090.00 | 2802.50 | 3372.50 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 | 3420.00 |
| MV Conductors | | | | | | | | | | |
| Capacity (MT) | 3100 | 3100 | 3100 | 3100 | 3100 | 3100 | 3100 | 3100 | 3100 | 3100 |
| Annual Output (MT) | 1240.00 | 1550.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 |
| Output/Day (MT) | 4.13 | 5.17 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 |
| Opening Stock | 0.00 | 103.33 | 129.17 | 155.00 | 155.00 | 155.00 | 155.00 | 155.00 | 155.00 | 155.00 |
| Production | 1240.00 | 1550.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 |
| Total | 1240.00 | 1653.33 | 1989.17 | 2015.00 | 2015.00 | 2015.00 | 2015.00 | 2015.00 | 2015.00 | 2015.00 |
| Closing Stock | 103.33 | 129.17 | 155.00 | 155.00 | 155.00 | 155.00 | 155.00 | 155.00 | 155.00 | 155.00 |
| Sales | 1136.67 | 1524.17 | 1834.17 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 | 1860.00 |
| LV Conductors | | | | | | | | | | |
| Capacity (MT) | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 |
| Annual Output (MT) | 3520.00 | 4400.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 |
| Output/Day (MT) | 11.73 | 14.67 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 |
| Opening Stock | 0.00 | 293.33 | 366.67 | 440.00 | 440.00 | 440.00 | 440.00 | 440.00 | 440.00 | 440.00 |
| Production | 3520.00 | 4400.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 |
| Total | 3520.00 | 4693.33 | 5646.67 | 5720.00 | 5720.00 | 5720.00 | 5720.00 | 5720.00 | 5720.00 | 5720.00 |
| Closing Stock | 293.33 | 366.67 | 440.00 | 440.00 | 440.00 | 440.00 | 440.00 | 440.00 | 440.00 | 440.00 |
| Sales | 3226.67 | 4326.67 | 5206.67 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 | 5280.00 |

JOB NO. : DCIL-105

EXHIBIT : 31

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### STATEMENT OF REVENUE

('000 US $)

| | Average Selling Price (US $/MT) | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| HHV Conductors | 7500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HV Conductors | 3700.00 | 7733.00 | 10169.25 | 12478.25 | 12654.00 | 12654.00 | 12654.00 | 12654.00 | 12654.00 | 12654.00 | 12654.00 |
| MV Conductors | 8900.00 | 10116.33 | 13565.08 | 16324.08 | 16554.00 | 16554.00 | 16554.00 | 16554.00 | 16554.00 | 16554.00 | 16554.00 |
| LV Conductors | 4200.00 | 13552.00 | 18172.00 | 21868.00 | 22176.00 | 22176.00 | 22176.00 | 22176.00 | 22176.00 | 22176.00 | 22176.00 |
| Total | | 31401.33 | 42106.33 | 50670.33 | 51384.00 | 51384.00 | 51384.00 | 51384.00 | 51384.00 | 51384.00 | 51384.00 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 32

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

COST OF PRODUCTION AND SALES

('000 DS $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| A. Variable Cost | | | | | | | | | | |
| Raw Materials and Consumables | 23887.84 | 29859.80 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 |
| Power | 91.00 | 116.20 | 139.40 | 139.40 | 139.40 | 139.40 | 139.40 | 139.40 | 139.40 | 139.40 |
| Water | 1.46 | 1.83 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| Sub-total | 23982.30 | 29977.82 | 35973.35 | 35973.35 | 35973.35 | 35973.35 | 35973.35 | 35973.35 | 35973.35 | 35973.35 |
| Contingency (@ 5% on above) | 1199.11 | 1498.89 | 1798.67 | 1798.67 | 1798.67 | 1798.67 | 1798.67 | 1798.67 | 1798.67 | 1798.67 |
| Total 'A' | 25181.41 | 31476.71 | 37772.01 | 37772.01 | 37772.01 | 37772.01 | 37772.01 | 37772.01 | 37772.01 | 37772.01 |
| B. Fixed Cost | | | | | | | | | | |
| a) Labour & Plant Overhead * | | | | | | | | | | |
| a) Direct labour | 441.60 | 463.68 | 485.76 | 507.84 | 529.92 | 552.00 | 574.08 | 596.16 | 618.24 | 640.32 |
| b) Indirect labour | 138.18 | 145.09 | 152.00 | 158.91 | 165.82 | 172.73 | 179.63 | 186.54 | 193.45 | 200.36 |
| c) Supervision | 574.08 | 602.78 | 631.49 | 660.19 | 688.90 | 717.60 | 746.30 | 775.01 | 803.71 | 832.42 |
| Sub-total | 1153.86 | 1211.55 | 1269.25 | 1326.94 | 1384.63 | 1442.33 | 1500.02 | 1557.71 | 1615.40 | 1673.10 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 32

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| (ii) Other Factory Expenses | | | | | | | | | | |
| a) Maintenance @ 1% on Plant & Equipment | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 |
| b) Maintenance @ 1% on Building & Civil Work | 29.13 | 29.13 | 29.13 | 29.13 | 29.13 | 29.13 | 29.13 | 29.13 | 29.13 | 29.13 |
| c) Miscellaneous | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 | 13.38 |
| Sub-total | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 |
| (iii) Administrative & Sales Expenses | | | | | | | | | | |
| a) Salaries * | 1106.90 | 1162.25 | 1217.59 | 1272.94 | 1328.28 | 1383.63 | 1438.97 | 1494.32 | 1549.66 | 1605.01 |
| b) Overheads | 221.38 | 232.45 | 243.52 | 254.59 | 265.66 | 276.73 | 287.79 | 298.86 | 309.93 | 321.00 |
| Sub-total | 1328.28 | 1394.69 | 1461.11 | 1527.52 | 1593.94 | 1660.35 | 1726.76 | 1793.18 | 1859.59 | 1926.01 |
| Total (i+ii+iii) | 2562.43 | 2686.54 | 2810.64 | 2934.75 | 3058.86 | 3182.97 | 3307.07 | 3431.18 | 3555.29 | 3679.39 |
| Contingency (@ 5% on above) | 128.12 | 134.33 | 140.53 | 146.74 | 152.94 | 159.15 | 165.35 | 171.56 | 177.76 | 183.97 |
| Total 'B' | 2690.55 | 2820.86 | 2951.18 | 3081.49 | 3211.80 | 3342.11 | 3472.44 | 3602.73 | 3733.05 | 3863.36 |
| Total Cost of Production and Sales (A+B) | 27871.96 | 34297.58 | 40723.19 | 40853.50 | 40983.81 | 41114.13 | 41244.45 | 41374.74 | 41505.06 | 41635.38 |

* Assumed to increase at the flat rate of 5% straight line every year

JOB NO. : DCIL-105

EXHIBIT : 33

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED PROFITABILITY STATEMENT

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Elements | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Raw Materials and Consumables | 23887.84 | 29859.80 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 |
| Power | 93.00 | 116.20 | 139.40 | 139.40 | 139.40 | 139.40 | 139.40 | 139.40 | 139.40 | 139.40 |
| Water | 1.46 | 1.83 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 |
| Labour & Plant Overhead | 1153.86 | 1211.55 | 1269.25 | 1326.94 | 1384.63 | 1442.33 | 1500.02 | 1557.71 | 1615.40 | 1673.10 |
| Other Factory Expenses | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 | 80.29 |
| Administrative & Sales Expenses | 1328.28 | 1394.69 | 1461.11 | 1527.52 | 1593.94 | 1660.35 | 1726.76 | 1793.18 | 1859.59 | 1926.01 |
| Sub-total | 26544.73 | 32664.36 | 38783.99 | 38908.10 | 39032.20 | 39156.31 | 39280.42 | 39404.53 | 39528.63 | 39652.74 |
| Contingency | 1327.23 | 1633.22 | 1939.20 | 1945.40 | 1951.61 | 1957.82 | 1964.02 | 1970.23 | 1976.43 | 1982.64 |
| Total | 27871.96 | 34297.58 | 40723.19 | 40853.50 | 40983.81 | 41114.13 | 41244.44 | 41374.75 | 41505.06 | 41635.38 |
| Stock Variation | -2161.13 | -520.37 | -520.37 | -4.98 | -4.98 | -4.97 | -4.98 | -4.98 | -4.98 | -4.98 |
| Cost of Production and Sales | 25710.81 | 33777.21 | 40202.82 | 40848.52 | 40978.83 | 41109.16 | 41239.46 | 41369.77 | 41500.09 | 41630.40 |
| PROJECTED REVENUE | 31401.33 | 42106.33 | 50670.33 | 51384.00 | 51384.00 | 51384.00 | 51384.00 | 51384.00 | 51384.00 | 51384.00 |
| Profit before Interest and Depreciation | 5690.50 | 8329.12 | 10467.51 | 10535.48 | 10405.17 | 10274.84 | 10144.54 | 10014.23 | 9883.91 | 9753.60 |

JOB NO. : DCIL-105

EXHIBIT : 33

('000 US $)

| Elements | OPERATING YEARS 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Interest | | | | | | | | | | |
| On Term Loan - @ 12% p.a. | 641.78 | 641.78 | 641.78 | 550.10 | 458.41 | 366.73 | 275.05 | 183.37 | 91.69 | 0.00 |
| On Working Capital Loan - @ 14% p.a. | 1529.74 | 1529.74 | 1147.31 | 764.87 | 382.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sub-total | 2171.52 | 2171.52 | 1789.09 | 1314.97 | 840.85 | 366.73 | 275.05 | 183.37 | 91.69 | 0.00 |
| Profit before Depreciation | 3518.98 | 6157.60 | 8678.42 | 9220.51 | 9564.32 | 9908.11 | 9869.49 | 9830.86 | 9792.23 | 9753.60 |
| Depreciation and Amortisation | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 |
| Profit before Tax | 3120.64 | 5759.26 | 8280.08 | 8822.17 | 9165.98 | 9509.77 | 9471.16 | 9432.52 | 9393.89 | 9355.27 |
| Tax | 780.16 | 1445.16 | 2080.33 | 2233.80 | 2324.06 | 2414.02 | 2408.10 | 2401.93 | 2395.53 | 2388.91 |
| Distributable Profit | 2340.48 | 4314.10 | 6199.75 | 6588.37 | 6841.92 | 7095.75 | 7063.06 | 7030.60 | 6998.36 | 6966.37 |
| Dividend | 534.82 | 534.82 | 802.22 | 1069.63 | 1069.63 | 1069.63 | 1337.04 | 1337.04 | 1337.04 | 1604.45 |
| Retained Earnings | 1805.66 | 3779.28 | 5397.51 | 5518.74 | 5772.29 | 6026.12 | 5726.02 | 5693.55 | 5661.32 | 5361.92 |
| Add Back : Depreciation & Amortisation | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 | 398.34 |
| NET CASH ACCRUAL | 2204.00 | 4177.62 | 5795.87 | 5917.08 | 6170.63 | 6424.46 | 6124.36 | 6091.89 | 6059.66 | 5760.26 |

JOB NO. : DCIL-105

EXHIBIT : 34

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF FIXED ASSETS AND DEPRECIATION UNDER STRAIGHT LINE METHOD

('000 US $)

| Description | Value | Technical Know-how Fees | Sub-Total | Contin-gency | Sub-Total | Interest during Construct | Sub-Total | 50% of Pre-op Expenses | Total | Rate (%) | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Land & Land Development | 3564.00 | 0.00 | 3564.00 | 0.00 | 3564.00 | 0.00 | 3564.00 | 0.00 | 3564.00 | 0% | 0.00 |
| 2. Building & Civil Work | 2913.00 | 228.88 | 3141.88 | 310.72 | 3452.60 | 457.42 | 3910.02 | 338.53 | 4248.55 | 4% | 169.94 |
| 3. Plant & Mahinery | 1259.30 | 98.95 | 1358.25 | 134.32 | 1492.57 | 197.74 | 1690.31 | 146.35 | 1836.67 | 8% | 146.93 |
| 4. Miscellaneous Fixed Assets | 193.10 | 15.17 | 208.27 | 20.60 | 228.87 | 30.33 | 259.20 | 22.43 | 281.63 | 10% | 28.16 |
| 5. Preliminary Expenses | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 10% | 2.50 |
| 6. Pre-operative Expenses | 1015.31 | 0.00 | 1015.31 | 0.00 | 1015.31 | 0.00 | 1015.31 | -507.31 | 508.00 | 10% | 50.80 |
| 7. Technical Know-how Fees | 343.00 | -343.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0% | 0.00 |
| Sub-total | 9312.71 | | 9312.71 | | 9778.35 | | 10463.84 | | 10463.84 | | 798.34 |
| 8. Contingency | 465.64 | 0.00 | 465.64 | -465.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Sub-total | 9778.35 | | 9778.35 | | 9778.35 | | 10463.84 | | 10463.84 | | |
| 9. Interest during Construction | 685.49 | 0.00 | 685.49 | 0.00 | 685.49 | -685.49 | 0.00 | 0.00 | 0.00 | | |
| Total | 10463.84 | | 10463.84 | | 10463.84 | | 10463.84 | | 10463.84 | | |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 35

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

TAX COMPUTATION

('000 DS $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Profit before Depreciation | 3518.98 | 6157.60 | 8678.42 | 9220.51 | 9564.32 | 9908.11 | 9869.49 | 9830.86 | 9792.23 | 9753.60 |
| Less : Current Depreciation | 398.34 | 376.97 | 357.10 | 285.30 | 268.08 | 252.04 | 237.09 | 223.14 | 210.13 | 197.98 |
| Balance | 3120.64 | 5780.63 | 8321.32 | 8935.21 | 9296.24 | 9656.07 | 9632.41 | 9607.72 | 9582.10 | 9555.62 |
| Less : Unabsorbed Depreciation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Taxable Income | 3120.64 | 5780.63 | 8321.32 | 8935.21 | 9296.24 | 9656.07 | 9632.41 | 9607.72 | 9582.10 | 9555.62 |
| Tax @ 25% | 780.16 | 1445.16 | 2080.33 | 2233.80 | 2324.06 | 2414.02 | 2408.10 | 2401.93 | 2395.53 | 2388.91 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 36

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### DEPRECIATION FOR TAX

('000 US $)

| | WDV Rate | Building & Civil Work 4% | Plant & Machinery 8% | Misc. Fixed Assets 10% | Amortisation 10% | TOTAL |
|---|---|---|---|---|---|---|
| Value | | 4248.55 | 1836.67 | 281.63 | 533.00 | |
| Depreciation Year 1 | | 169.94 | 146.93 | 28.16 | 53.30 | 398.34 |
| Balance | | 4078.61 | 1689.73 | 253.47 | 479.70 | |
| Depreciation Year 2 | | 163.14 | 135.18 | 25.35 | 53.30 | 376.97 |
| Balance | | 3915.46 | 1554.56 | 228.12 | 426.40 | |
| Depreciation Year 3 | | 156.62 | 124.36 | 22.81 | 53.30 | 357.10 |
| Balance | | 3758.84 | 1430.19 | 205.31 | 373.10 | |
| Depreciation Year 4 | | 150.35 | 114.42 | 20.53 | 53.30 | 338.60 |
| Balance | | 3608.49 | 1315.78 | 184.78 | 319.80 | |
| Depreciation Year 5 | | 144.34 | 105.26 | 18.48 | 53.30 | 321.38 |
| Balance | | 3464.15 | 1210.51 | 166.30 | 266.50 | |
| Depreciation Year 6 | | 138.57 | 96.84 | 16.63 | 53.30 | 305.34 |
| Balance | | 3325.58 | 1113.67 | 149.67 | 213.20 | |
| Depreciation Year 7 | | 133.02 | 89.09 | 14.97 | 53.30 | 290.38 |
| Balance | | 3192.56 | 1024.58 | 134.70 | 159.90 | |
| Depreciation Year 8 | | 127.70 | 81.97 | 13.47 | 53.30 | 276.44 |
| Balance | | 3064.86 | 942.61 | 121.23 | 106.60 | |
| Depreciation Year 9 | | 122.59 | 75.41 | 12.12 | 53.30 | 263.43 |
| Balance | | 2942.26 | 867.20 | 109.11 | 53.30 | |
| Depreciation Year 10 | | 117.69 | 69.38 | 10.91 | 53.30 | 251.28 |
| Balance | | 2824.57 | 797.83 | 98.20 | 0.00 | |

WDV : Written Down Value

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 37

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

WORKING CAPITAL REQUIREMENTS
(Excluding Cash and Bank Balances)

('000 US $)

| Items | OPERATING YEAR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. Raw materials & Consumables | 6184.66 | 7730.82 | 9276.99 | 9276.99 | 9276.99 | 9276.99 | 9276.99 | 9276.99 | 9276.99 | 9276.99 |
| 2. Finished Stock | 2161.13 | 2681.50 | 3201.87 | 3206.85 | 3211.83 | 3216.80 | 3221.78 | 3226.76 | 3231.74 | 3236.72 |
| 3. Sundry Debtors | 2580.93 | 3460.79 | 4164.68 | 4223.34 | 4223.34 | 4223.34 | 4223.34 | 4223.34 | 4223.34 | 4223.34 |
| TOTAL | 10926.72 | 13873.11 | 16643.53 | 16707.18 | 16712.16 | 16717.13 | 16722.11 | 16727.09 | 16732.07 | 16737.05 |
| Increase/(decrease) | 10926.72 | 2946.39 | 2770.42 | 63.65 | 4.98 | 4.97 | 4.99 | 4.98 | 4.98 | 4.98 |
| Stock Variation | 2161.13 | 520.37 | 520.37 | 4.98 | 4.99 | 4.97 | 4.98 | 4.98 | 4.98 | 4.98 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-185

EXHIBIT : 36

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED CASH FLOW STATEMENT

('000 US $)

| | Construction Period | Y 1 | Y 2 | Y 3 | Y 4 | Y 5 | Y 6 | Y 7 | Y 8 | Y 9 | Y 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A. SOURCES | | | | | | | | | | | |
| Increase in Share Capital | 5348.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Term Loan | 5348.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Bank Loan | 0.00 | 10926.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Profit before Tax with Interest added back | 0.00 | 5292.16 | 7930.78 | 10069.17 | 10137.14 | 10006.93 | 9876.50 | 9746.21 | 9615.89 | 9485.58 | 9355.27 |
| Depreciation | 0.00 | 398.14 | 398.14 | 398.14 | 398.14 | 398.14 | 398.14 | 398.14 | 398.14 | 398.14 | 398.14 |
| TOTAL 'A' | 10696.32 | 16617.22 | 8329.12 | 10467.51 | 10535.48 | 10405.17 | 10274.84 | 10144.55 | 10014.21 | 9883.92 | 9753.61 |
| B. APPLICATIONS | | | | | | | | | | | |
| Increase in Capital Expenditure | 9778.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase/(Decrease) in Working Capital | 0.00 | 10926.72 | 2946.39 | 2770.42 | 63.65 | 4.98 | 4.97 | 4.98 | 4.98 | 4.98 | 4.98 |

JOB NO. : DCIL-105

EXHIBIT : 38

('000 Rs $)

| | Construction Period | Y 1 | Y 2 | Y 3 | R 4 | R 5 | A 6 | A 7 | R 8 | R 9 | R 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Interest** | | | | | | | | | | | |
| On Term Loan | | | | | | | | | | | |
| - @ 12% p.a. | | 685.49 | 641.78 | 641.78 | 641.78 | 550.10 | 458.41 | 366.73 | 275.05 | 183.37 | 91.69 | 0.00 |
| On Working Capital Loan | | | | | | | | | | | |
| - @ 14% p.a. | | 0.00 | 1529.74 | 1529.74 | 1147.31 | 764.87 | 382.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total Interest | | 685.49 | 2171.52 | 2171.52 | 1789.09 | 1314.97 | 840.85 | 366.73 | 275.05 | 183.37 | 91.69 | 0.00 |
| Tax | | 0.00 | 780.16 | 1445.16 | 2080.33 | 2231.80 | 2324.06 | 2414.02 | 2408.10 | 2401.51 | 2395.53 | 2388.91 |
| Dividend | | 0.00 | 534.82 | 534.82 | 802.22 | 1069.63 | 1069.63 | 1069.63 | 1337.04 | 1337.04 | 1337.04 | 1604.45 |
| Repayment of Term Loan | | 0.00 | 0.00 | 0.00 | 764.02 | 764.02 | 764.02 | 764.02 | 764.02 | 764.02 | 764.04 | 0.00 |
| Repayment of Working Capital Loan | | 0.00 | 0.00 | 2731.68 | 2731.68 | 2731.68 | 2731.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL 'B' | | 10463.84 | 14413.22 | 9829.57 | 10937.76 | 8177.75 | 7735.24 | 4619.17 | 4789.19 | 4691.14 | 4593.28 | 1998.33 |
| Opening Balance | | 0.00 | 232.48 | 2436.48 | 936.03 | 465.78 | 2823.51 | 5493.46 | 11148.91 | 16504.29 | 21827.18 | 27117.82 |
| Surplus /(Deficit) during the Year ( A - B ) | | 232.48 | 2204.00 | -1500.45 | -470.25 | 2357.73 | 2669.95 | 5655.47 | 5355.28 | 5322.89 | 5290.64 | 5255.28 |
| Closing Balance | | 232.48 | 2436.48 | 936.03 | 465.78 | 2823.51 | 5493.46 | 11148.91 | 16504.29 | 21827.18 | 27117.82 | 32373.10 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 39

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED BALANCE SHEET

('000 US $)

| | | Y | | | R | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | Share Capital | 5348.16 | 5348.16 | 5348.16 | 5348.16 | 5348.16 | 5348.16 | 5348.16 | 5348.16 | 5348.16 | 5348.16 |
| Add: | Reserves & Surplus | 1805.66 | 5584.94 | 10982.47 | 16501.22 | 22273.50 | 28299.62 | 34025.64 | 39719.19 | 45180.51 | 50742.43 |
| | SHARREHOLRERS' FUND | 7153.82 | 10933.10 | 16330.63 | 21849.38 | 27621.66 | 33647.78 | 39373.80 | 45067.35 | 50728.67 | 56090.59 |
| Less: | Intangible Assets | 479.70 | 426.40 | 373.10 | 319.80 | 266.50 | 213.20 | 159.90 | 106.60 | 53.10 | 0.00 |
| | TANGIBLE NET WORTH | 6674.12 | 10506.70 | 15957.54 | 21529.57 | 27355.16 | 33434.58 | 39213.90 | 44960.75 | 50675.57 | 56090.59 |
| Add: | Term Loan | 5348.16 | 5348.16 | 4584.14 | 3820.12 | 3056.10 | 2292.08 | 1528.06 | 764.04 | 0.00 | 0.00 |
| | CAPITAL FUND | 12022.28 | 15854.86 | 20541.67 | 25349.70 | 30411.26 | 35726.66 | 40741.96 | 45724.79 | 50675.57 | 56090.59 |
| Less: | Net Fixed Assets | 9585.80 | 9240.76 | 8895.72 | 8550.68 | 8205.64 | 7860.60 | 7515.56 | 7170.52 | 6825.48 | 6480.44 |
| | NET CURRENT ASSETS | 2436.48 | 6614.10 | 11645.95 | 16799.01 | 22205.62 | 27866.06 | 33226.40 | 38554.27 | 43849.89 | 49610.15 |
| A. | CURRENT ASSETS | | | | | | | | | | |
| | Working Capital | 10926.72 | 13873.11 | 16643.51 | 16707.18 | 16717.12 | 16717.13 | 16722.11 | 16722.09 | 16722.07 | 16727.05 |
| | Cash & Bank Balance as per Cash Flow Statement | 2436.48 | 936.03 | 465.78 | 2823.51 | 5493.46 | 11148.93 | 16504.29 | 21832.19 | 27117.82 | 32873.10 |
| | TOTAL 'A' | 13363.20 | 14809.14 | 17109.31 | 19530.69 | 22205.62 | 27866.06 | 33226.40 | 38554.27 | 43849.89 | 49610.15 |
| B. | CURRENT LIABILITIES | | | | | | | | | | |
| | Bank Loan | 10926.72 | 8195.04 | 5463.36 | 2731.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | TOTAL 'B' | 10926.72 | 8195.04 | 5463.36 | 2731.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | NET CURRENT ASSETS (A-B) | 2436.48 | 6614.10 | 11645.95 | 16799.01 | 22205.62 | 27866.06 | 33226.40 | 38554.27 | 43849.89 | 49610.15 |

JOB NO. : DCIL-105 EXHIBIT : 40

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

BREAK-EVEN ANALYSIS

('000 US $)

| Sl. No. | Particulars | | Amount |
|---|---|---|---|
| 1. | Raw Materials and Consumables | | 59719.60 |
| 2. | Power | | 232.20 |
| 3. | Water | | 3.65 |
| 4. | Sub-total (1 thru 3) | | 59955.45 |
| 5. | Contingency | | 2997.77 |
| 6. | VARIABLE COSTS | | 62953.22 |
| 7. | REVENUE | | 85640.00 |
| 8. | CONTRIBUTION (7 - 6) | | 22686.78 |
| 9. | Labour & Plant Overhead* | | 1413.48 |
| 10. | Other Factory Expenses | | 80.29 |
| 11. | Administrative & Sales Expenses* | | 1627.14 |
| 12. | Sub-Total (9 thru 11) | | 3120.91 |
| 13. | Contingency | | 156.05 |
| 14. | Sub-Total (12+13) | | 3276.96 |
| 15. | Interest** | | 1840.96 |
| 16. | Depreciation | | 398.34 |
| 17. | FIXED COSTS | | 5516.26 |
| | BREAK-EVEN SALES | 17*7/8 | 20823.26 |
| | BREAK-EVEN POINT | | 24.3% |
| | CASH BREAK-EVEN SALES | | 19319.58 |
| | CASH BREAK-EVEN POINT | | 22.6% |

* Average over 10 years
** Average over 5 years

JOB NO. : DCIL-105 EXHIBIT : 41

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**INTERNAL RATE OF RETURN**

('000 US $)

| Year | Outflow | Inflow | Net Inflow |
|---|---|---|---|
| 0 | -10696.32 | 0.00 | -10696.32 |
| 1 | 0.00 | 5690.50 | 5690.50 |
| 2 | 0.00 | 8329.12 | 8329.12 |
| 3 | 0.00 | 10467.51 | 10467.51 |
| 4 | 0.00 | 10535.48 | 10535.48 |
| 5 | 0.00 | 10405.17 | 10405.17 |
| 6 | 0.00 | 10274.84 | 10274.84 |
| 7 | 0.00 | 10144.54 | 10144.54 |
| 8 | 0.00 | 10014.23 | 10014.23 |
| 9 | 0.00 | 9883.91 | 9883.91 |
| 10 | 0.00 | 9753.60 | 9753.60 |
| | IRR | 73.5% | |

Outflow = Project Cost

Inflow = Profit before Interest,Depreciation and Tax

# PLANT LOCATION : BAHRAIN

**COUNTRY : BAHRAIN**

The financial analysis and evaluation of the proposed project for setting up of Bare Wire Conductors plant in this country are based on the capacity utilisation, price and costs.

***Project Cost***

The estimated cost of the project of setting up a 16,000 TPA plant (equivalent to 48,000 Km per year) is around US $ 11.5 million as can be seen from Exhibit-42. The project cost includes the expenditure towards

- Land and land development
- Building and civil work
- Plant and machinery
- Miscellaneous fixed assets
- Preliminary expenses
- Pre-operative expenses
- Technical know-how fees

Preliminary expenses have been assumed on a lumpsum basis on the project cost. Pre-operative expenses have three components, viz., establishment, travelling expenses and miscellaneous expenses. Establishment costs have been computed on the basis of salaries payable and overheads to various personnel who have to be recruited at various levels, during the construction period. Travelling expenss have been taken as approximately 10% of establishment costs in all the nine quarters of the construction period. Miscellaneous expenses have also been taken on a lumpsum basis. Technical know-how fees have been taken as 3.5% of the project cost excluding interest during construction and margin money for working capital.

5% cushion has been provided towards contingency. This cost also includes interest during construction and margin money for working capital.

Phasing of capital expenditure is based on implementation plan, and interest during construction has been computed based on the phasing. These two are presented in Exhibits 43 and 44 respectively.

Margin money for working capital is presented in Exhibit-45. In computing margin money it is assumed that adequate provisions have to be kept towards storage of raw materials and consumables required to be imported.

The project is assumed to be financed by Debt-Equity Ratio of 1:1.

***Production, Sales and Revenue***

Statement of production and sales of various product range and the revenue that will be generated from the sales of the products over the 10-year period are presented in Exhibits 46 and 47 respectively. Capacity utilisation is assumed at the rate of 40% in the first year, 50% in the second year and 60% from the third year onwards.

***Costs***

The annual costs of production and sales computed over 10 years are presented in Exhibit-48. In estimating these costs it is assumed that the salaries and wages will increase at the flat rate of 5% every year.

***Profitability***

Projected profitability statement is presented in Exhibit-49. The average profit before tax works out to 13.5% of average revenue.

Statement of fixed assets and depreciation under straight line method is presented in Exhibit-50. Tax computation and depreciation for tax are presented in Exhibits 51 and 52 repspectively.

Working capital requirements are shown in Exhibit-53.

Projected cash flow statement and balance sheet over 10-year period are shown in Exhibits 54 and 55 respectively.

The project breaks even at around 30.1% and shows internal rate of return of 84.5% as can be seen from Exhibits 56 and 57 respectively. In computing internal rate of return, outflow is taken as the project cost and inflow is taken as the profit before interest, depreciation and tax.

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 42

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

## PROJECT PROFILE ON BARE WIRES

### ESTIMATED PROJECT COST

('000 US $)

| Items | Value | Total |
|---|---|---|
| 1. Land and Land Development (@ US$ 185 per m² for 21,600 m²) | 3996.00 | 3996.00 |
| 2. Building and Civil Work | | |
| i) Workshop Building (@ US$ 899 per m² for 2,500 m²) | 2247.00 | |
| ii) Administrative Building (@ US$ 1084 per m² for 315 m²) | 342.00 | |
| iii) Auxiliary Buildings (@ US$ 1084 per m² for 508 m²) | 550.00 | |
| Sub-total (2) | | 3139.00 |
| 3. Plant and Machinery | | |
| i) Imported | | |
| - Production equipment | 953.58 | |
| - Material handling equipment | 39.24 | |
| - Tool room and maintenance equipment | 74.10 | |
| - Auxiliary equipment and handtools | 3.00 | |
| Total F.O.B. Value | 1069.92 | |
| ii) Insurance & Freight (@ 10% of FOB Value) | 106.99 | |
| iii) C.I.F. Value | 1176.91 | |
| iv) Import duty @ 6% on CIF value | 70.61 | |
| v) Transportation @ 1% of CIF Value | 11.77 | |
| Landed Cost at Site [Sub-total (3)] | | 1259.30 |

JOB NO. : DCIL-105 EXHIBIT : 42

('000 US $)

| Items | | Value | Total |
|---|---|---|---|
| 4. | Miscellaneous Fixed Assets | | |
| i) | Transformers | 23.40 | |
| ii) | Switchgears | 4.50 | |
| iii) | Central Airconditioning system | 50.80 | |
| iv) | Illumination,Fans and Room Coolers | 3.00 | |
| v) | Water Pumps and Tank | 5.00 | |
| vi) | Compressors | 6.00 | |
| vii) | Fire Fighting system | 5.00 | |
| viii) | Telecommunication system | 25.00 | |
| ix) | Office Furniture and Equipment | 22.00 | |
| x) | Vehicles | 45.40 | |
| | Sub-total (4) | | 193.10 |
| 5. | Preliminary Expenses | 25.00 | 25.00 |
| 6. | Pre-operative Expenses | | |
| i) | Establishment | 850.66 | |
| ii) | Travelling Expenses | 86.00 | |
| iii) | Miscellaneous | 45.00 | |
| | | | 981.66 |
| 7. | Technical Know-how Fees | 366.00 | 366.00 |
| 8. | Sub-total (1 thru 7) | - | 9960.06 |
| 9. | Contingency @ 5% on above | - | 498.00 |
| 10. | Sub-total (8 & 9) | - | 10458.06 |
| 11. | Interest during Construction | - | 744.85 |
| 12. | Margin Money for Working Capital | - | 250.03 |
| | TOTAL COST | - | 11452.94 |

JOB NO. : DCIL-105 EXHIBIT : 43

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARB WIRES

PHASING OF CAPITAL EXPENDITURE

('000 US $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1. Land and Land Development | 3996.00 | 0.00 | 799.20 | 1598.40 | 1598.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2. Building and Civil Work | 3139.00 | | | | | | | | | |
| i) Workshop Building | 2247.00 | 0.00 | 0.00 | 0.00 | 561.75 | 561.75 | 561.75 | 561.75 | 0.00 | 0.00 |
| ii) Administrative Building | 342.00 | 0.00 | 0.00 | 0.00 | 0.00 | 136.80 | 136.80 | 68.40 | 0.00 | 0.00 |
| iii) Auxiliary Buildings | 550.00 | 0.00 | 0.00 | 0.00 | 0.00 | 183.33 | 183.33 | 183.34 | 0.00 | 0.00 |
| 3. Plant and Machinery | 1259.30 | | | | | | | | | |
| i) Ordering | 377.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 377.79 | 0.00 | 0.00 | 0.00 |
| ii) Supply, delivery and installation at site | 881.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 859.47 | 22.04 |

JOB NO. : DCIL-105 EXHIBIT : 43

('000 US $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. Miscellaneous Fixed Assets | 193.10 | | | | | | | | | |
| i) Transformers | 23.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.68 | 0.00 | 18.72 | 0.00 |
| ii) Switchgears | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.90 | 0.00 | 3.60 | 0.00 |
| iii) Central Airconditioning system | 50.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.16 | 0.00 | 40.64 | 0.00 |
| iv) Illumination,Fans and Room Coolers | 3.00 | 0.30 | 0.00 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.00 | 0.00 |
| v) Water Pumps and Tank | 5.00 | 0.00 | 0.00 | 0.00 | 2.50 | 2.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| vi) Compressors | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 4.80 | 0.00 |
| vii) Fire fighting system | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.00 | 4.00 | 0.00 |
| viii) Telecommunication system | 25.00 | 0.00 | 2.50 | 0.00 | 0.00 | 2.50 | 5.00 | 5.00 | 5.00 | 5.00 |
| ix) Office Furniture and Equipment | 22.00 | 0.00 | 1.10 | 1.10 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 8.80 |
| x) Vehicles | 45.40 | 0.00 | 9.70 | 9.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 |
| 5. Preliminary Expenses | 25.00 | 12.50 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6. Pre-operative Expenses | 981.66 | | | | | | | | | |
| i) Establishment | 850.66 | 0.00 | 22.32 | 54.96 | 78.23 | 78.23 | 116.87 | 116.87 | 116.87 | 266.31 |
| ii) Travelling Expenses | 86.00 | 0.00 | 2.00 | 5.00 | 8.00 | 8.00 | 12.00 | 12.00 | 12.00 | 27.00 |
| iii) Miscellaneous | 45.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| 7. Technical Know-how Fees | 366.00 | 18.30 | 73.20 | 73.20 | 36.60 | 36.60 | 36.60 | 36.60 | 36.60 | 18.30 |
| 8. Sub-total (1 thru 5) | 9960.06 | 36.10 | 927.52 | 1747.90 | 2291.22 | 1017.45 | 1458.82 | 991.70 | 1108.90 | 378.44 |
| 9. Contingency @ 5% on above | 498.00 | 1.81 | 46.38 | 87.40 | 114.66 | 50.87 | 72.94 | 49.58 | 55.44 | 18.92 |
| 10. Sub-total (6 & 7) | 10458.06 | 37.91 | 973.90 | 1835.30 | 2407.88 | 1068.32 | 1531.76 | 1041.28 | 1164.34 | 397.37 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 44

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

ESTIMATION OF INTEREST DURING CONSTRUCTION

('000 US $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Capital Expenditure | 37.91 | 973.90 | 1835.30 | 2407.88 | 1068.32 | 1531.76 | 1041.28 | 1164.34 | 397.37 | 10458.06 |
| Margin Money | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 250.03 | 250.03 |
| Total | 37.91 | 973.90 | 1835.30 | 2407.88 | 1068.32 | 1531.76 | 1041.28 | 1164.34 | 647.40 | 10708.09 |
| Equity | 19.10 | 490.92 | 932.29 | 1234.83 | 578.66 | 820.89 | 586.19 | 657.05 | 406.54 | 5726.47 |
| Loan | 19.10 | 490.91 | 932.29 | 1234.84 | 578.66 | 820.87 | 586.19 | 657.05 | 406.55 | 5726.47 |
| Total | 38.20 | 981.83 | 1864.58 | 2469.67 | 1157.32 | 1641.75 | 1172.38 | 1314.10 | 813.10 | 11452.94 |

JOB NO. : DCIL-185 EXHIBIT : 44

('000 RS $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| **Interest on loan** | | | | | | | | | | |
| - @ 12% p.a. | 0.29 | 7.36 | 13.98 | 18.52 | 8.68 | 12.31 | 8.79 | 9.86 | 6.10 | 85.89 |
| | | 0.57 | 14.73 | 27.97 | 17.05 | 17.36 | 24.63 | 17.59 | 19.71 | 159.61 |
| | | | 0.57 | 14.73 | 27.97 | 17.05 | 17.36 | 24.63 | 17.59 | 139.90 |
| | | | | 0.57 | 14.73 | 27.97 | 17.05 | 17.36 | 24.63 | 122.31 |
| | | | | | 0.57 | 14.73 | 27.97 | 17.05 | 17.36 | 97.68 |
| | | | | | | 0.57 | 14.73 | 27.97 | 17.05 | 80.12 |
| | | | | | | | 0.57 | 14.73 | 27.97 | 43.27 |
| | | | | | | | | 0.57 | 14.73 | 15.30 |
| | | | | | | | | | 0.57 | 0.57 |
| Total | 0.29 | 7.93 | 29.28 | 61.79 | 89.00 | 109.99 | 131.10 | 149.76 | 165.71 | 744.85 |
| Debt/Equity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

| MEANS OF FINANCING : | | |
|---|---|---|
| | EQUITY | 5726.47 |
| | LOAN | 5726.47 |
| | TOTAL | 11452.94 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : ''

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### MARGIN MONEY FOR WORKING CAPITAL.

('000 US $)

| Sl. No. | Item | Period (Days) | Cost | Bank Finance Available (%) | Bank Finance Available (Amount) | Margin Money |
|---|---|---|---|---|---|---|
| 1. | Raw materials & Consumables | 30 | 2061.55 | 100% | 2061.55 | 0.00 |
| 2. | Finished Stock | 30 | 2192.20 | 100% | 2192.20 | 0.00 |
| 3. | Sundry Debtors | 30 | 3013.70 | 100% | 3013.70 | 0.00 |
| Sub-total | | | 7267.45 | | 7267.45 | 0.00 |
| 4. | Expenses | 30 | 250.03 | 0% | 0.00 | 250.03 |
| | Total | | 7517.48 | | 7267.45 | 250.03 |

JOB NO. : DCIL-105 EXHIBIT : 46

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF PRODUCTION AND SALES

(in MT)

| | | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Working Days/Year | | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Utilisation | | 40% | 50% | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 60% |
| UHV Conductors | | | | | | | | | | | |
| Capacity | (MT) | 7500 | 7500 | 7500 | 7500 | 7500 | 7500 | 7500 | 7500 | 7500 | 7500 |
| Annual Output | (MT) | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 |
| Output/Day | (MT) | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| Opening Stock | | 0.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 |
| Production | | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 |
| Total | | 3000.00 | 3250.00 | 3250.00 | 3250.00 | 3250.00 | 3250.00 | 3250.00 | 3250.00 | 3250.00 | 3250.00 |
| Closing Stock | | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 | 250.00 |
| Sales | | 2750.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 | 3000.00 |
| HV Conductors | | | | | | | | | | | |
| Capacity | (MT) | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 |
| Annual Output | (MT) | 1120.00 | 1400.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 |
| Output/Day | (MT) | 3.73 | 4.67 | 5.60 | 5.60 | 5.60 | 5.60 | 5.60 | 5.60 | 5.60 | 5.60 |

JOB NO. : DCIL-105

EXHIBIT : 46

(in MT)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Opening Stock | 0.00 | 93.33 | 116.67 | 140.00 | 140.00 | 140.00 | 140.00 | 140.00 | 140.00 | 140.00 |
| Production | 1120.00 | 1400.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 |
| Total | 1120.00 | 1493.33 | 1796.67 | 1820.00 | 1820.00 | 1820.00 | 1820.00 | 1820.00 | 1820.00 | 1820.00 |
| Closing Stock | 93.33 | 116.67 | 140.00 | 140.00 | 140.00 | 140.00 | 140.00 | 140.00 | 140.00 | 140.00 |
| Sales | 1026.67 | 1376.67 | 1656.67 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 |
| **MV Conductors** | | | | | | | | | | |
| Capacity (MT) | 2100 | 2100 | 2100 | 2100 | 2100 | 2100 | 2100 | 2100 | 2100 | 2100 |
| Annual Output (MT) | 840.00 | 1050.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 |
| Output/Day (MT) | 2.80 | 3.50 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 | 4.20 |
| Opening Stock | 0.00 | 70.00 | 87.50 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 |
| Production | 840.00 | 1050.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 |
| Total | 840.00 | 1120.00 | 1347.50 | 1365.00 | 1365.00 | 1365.00 | 1365.00 | 1365.00 | 1365.00 | 1365.00 |
| Closing Stock | 70.00 | 87.50 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 |
| Sales | 770.00 | 1032.50 | 1242.50 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 | 1260.00 |
| **LV Conductors** | | | | | | | | | | |
| Capacity (MT) | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| Annual Output (MT) | 1400.00 | 1750.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 |
| Output/Day (MT) | 4.67 | 5.83 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 |
| Opening Stock | 0.00 | 116.67 | 145.83 | 175.00 | 175.00 | 175.00 | 175.00 | 175.00 | 175.00 | 175.00 |
| Production | 1400.00 | 1750.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 |
| Total | 1400.00 | 1866.67 | 2245.83 | 2275.00 | 2275.00 | 2275.00 | 2275.00 | 2275.00 | 2275.00 | 2275.00 |
| Closing Stock | 116.67 | 145.83 | 175.00 | 175.00 | 175.00 | 175.00 | 175.00 | 175.00 | 175.00 | 175.00 |
| Sales | 1283.33 | 1720.83 | 2070.83 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 | 2100.00 |

JOB NO. : DCIL-105

EXHIBIT : 47

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

## PROJECT PROFILE ON BARE WIRES

### STATEMENT OF REVENUE

('000 US $)

| | Average Selling Price (US $/MT) | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| EHV Conductors | 7500.00 | 20625.00 | 22500.00 | 22500.00 | 22500.00 | 22500.00 | 22500.00 | 22500.00 | 22500.00 | 22500.00 | 22500.00 |
| HV Conductors | 3700.00 | 3798.67 | 5093.67 | 6129.67 | 6216.00 | 6216.00 | 6216.00 | 6216.00 | 6216.00 | 6216.00 | 6216.00 |
| MV Conductors | 8900.00 | 6853.00 | 9189.25 | 11058.25 | 11214.00 | 11214.00 | 11214.00 | 11214.00 | 11214.00 | 11214.00 | 11214.00 |
| LV Conductors | 4200.00 | 5390.00 | 7227.50 | 8697.50 | 8820.00 | 8820.00 | 8820.00 | 8820.00 | 8820.00 | 8820.00 | 8820.00 |
| Total | | 36666.67 | 44010.42 | 48385.42 | 48750.00 | 48750.00 | 48750.00 | 48750.00 | 48750.00 | 48750.00 | 48750.00 |

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

COST OF PRODUCTION AND SALES

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| A. Variable Cost | | | | | | | | | | |
| Raw Materials and Consumables | 23887.84 | 29859.80 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 |
| Power | 42.94 | 53.50 | 64.06 | 64.06 | 64.06 | 64.06 | 64.06 | 64.06 | 64.06 | 64.06 |
| Water | 0.94 | 1.18 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 |
| Sub-total | 23931.72 | 29914.48 | 35897.23 | 35897.23 | 35897.23 | 35897.23 | 35897.23 | 35897.23 | 35897.23 | 35897.23 |
| Contingency (@ 5% on above) | 1196.59 | 1495.72 | 1794.86 | 1794.86 | 1794.86 | 1794.86 | 1794.86 | 1794.86 | 1794.86 | 1794.86 |
| Total 'A' | 25128.31 | 31410.20 | 37692.09 | 37692.09 | 37692.09 | 37692.09 | 37692.09 | 37692.09 | 37692.09 | 37692.09 |
| B. Fixed Cost | | | | | | | | | | |
| i) Labour & Plant Overhead * | | | | | | | | | | |
| a) Direct labour | 496.80 | 521.64 | 546.48 | 571.32 | 596.16 | 621.00 | 645.84 | 670.68 | 695.52 | 720.36 |
| b) Indirect labour | 438.23 | 460.14 | 482.05 | 503.96 | 525.87 | 547.79 | 569.70 | 591.61 | 613.52 | 635.43 |
| c) Supervision | 535.92 | 562.72 | 589.51 | 616.31 | 643.10 | 669.90 | 696.70 | 723.49 | 750.29 | 777.08 |
| Sub-total | 1470.95 | 1544.50 | 1618.04 | 1691.59 | 1765.14 | 1838.69 | 1912.23 | 1985.78 | 2059.33 | 2132.87 |

JOB NO. : DCIL-105 EXHIBIT : 48

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ii) Other Factory Expenses | | | | | | | | | | |
| a) Maintenance @ 3% on Plant & Equipment | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 |
| b) Maintenance @ 1% on Building & Civil Work | 31.39 | 31.39 | 31.39 | 31.39 | 31.39 | 31.39 | 31.39 | 31.39 | 31.39 | 31.39 |
| c) Miscellaneous | 13.83 | 13.83 | 13.83 | 13.83 | 13.83 | 13.83 | 13.83 | 13.83 | 13.83 | 13.83 |
| Sub-total | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 |
| iii) Administrative & Sales Expenses | | | | | | | | | | |
| a) Salaries * | 1049.72 | 1102.21 | 1154.70 | 1207.18 | 1259.67 | 1312.16 | 1364.64 | 1417.13 | 1469.61 | 1522.10 |
| b) Overheads | 209.94 | 220.44 | 230.94 | 241.44 | 251.93 | 262.43 | 272.93 | 283.43 | 293.92 | 304.42 |
| Sub-total | 1259.66 | 1322.65 | 1385.64 | 1448.62 | 1511.60 | 1574.59 | 1637.57 | 1700.55 | 1763.53 | 1826.52 |
| Total (i+ii+iii) | 2813.61 | 2950.15 | 3086.68 | 3223.21 | 3359.74 | 3496.27 | 3632.80 | 3769.34 | 3905.86 | 4042.39 |
| Contingency (@ 5% on above) | 140.68 | 147.51 | 154.33 | 161.16 | 167.99 | 174.81 | 181.64 | 188.47 | 195.29 | 202.12 |
| Total 'B' | 2954.29 | 3097.66 | 3241.02 | 3384.37 | 3527.73 | 3671.09 | 3814.45 | 3957.79 | 4101.15 | 4244.51 |
| Total Cost of Production and Sales (A+B) | 28082.60 | 34507.86 | 40933.11 | 41076.46 | 41219.82 | 41363.18 | 41506.55 | 41649.88 | 41793.24 | 41936.60 |

* Assumed to increase at the flat rate of 5% straight line every year

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 49

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED PROFITABILITY STATEMENT

('000 US $)

| Elements | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Raw Materials and Consumables | 23887.84 | 29859.80 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 | 35831.76 |
| Power | 42.94 | 53.50 | 64.06 | 64.06 | 64.06 | 64.06 | 64.06 | 64.06 | 64.06 | 64.06 |
| Water | 0.94 | 1.18 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 | 1.41 |
| Labour & Plant Overhead | 1470.95 | 1544.50 | 1618.04 | 1691.59 | 1765.14 | 1838.69 | 1912.23 | 1985.78 | 2059.33 | 2132.87 |
| Other Factory Expenses | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 | 83.00 |
| Administrative & Sales Expenses | 1259.66 | 1322.65 | 1385.64 | 1448.62 | 1511.60 | 1574.59 | 1637.57 | 1700.55 | 1763.53 | 1826.52 |
| Sub-total | 26745.33 | 32864.63 | 38983.91 | 39120.44 | 39256.97 | 39393.50 | 39530.03 | 39666.57 | 39803.09 | 39939.62 |
| Contingency | 1337.27 | 1643.23 | 1949.20 | 1956.02 | 1962.85 | 1969.68 | 1976.50 | 1983.33 | 1990.15 | 1996.98 |
| Total | 28082.60 | 34507.86 | 40933.11 | 41076.46 | 41219.82 | 41363.18 | 41506.54 | 41649.89 | 41793.24 | 41936.60 |
| Stock Variation | -2192.20 | -522.65 | -522.65 | -6.34 | -6.35 | -6.35 | -6.35 | -6.34 | -6.35 | -6.35 |
| Cost of Production and Sales | 25890.40 | 33985.21 | 40410.46 | 41070.12 | 41213.47 | 41356.83 | 41500.19 | 41643.55 | 41786.89 | 41930.25 |
| PROJECTED REVENUE | 36666.67 | 44010.42 | 48385.42 | 48750.00 | 48750.00 | 48750.00 | 48750.00 | 48750.00 | 48750.00 | 48750.00 |
| Profit before Interest and Depreciation | 10776.27 | 10025.21 | 7974.96 | 7679.88 | 7536.53 | 7393.17 | 7249.81 | 7106.45 | 6963.11 | 6819.75 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 49

('000 US $)

| Elements | OPERATING YEARS 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Interest | | | | | | | | | | |
| On Term Loan - @ 12% p.a. | 687.18 | 687.18 | 687.18 | 589.01 | 490.84 | 392.67 | 294.50 | 196.33 | 98.17 | 0.00 |
| On Working Capital Loan - @ 14% p.a. | 1017.44 | 1017.44 | 763.08 | 508.72 | 254.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sub-total | 1704.62 | 1704.62 | 1450.26 | 1097.73 | 745.20 | 392.67 | 294.50 | 196.33 | 98.17 | 0.00 |
| Profit before Depreciation | 9071.65 | 8320.59 | 6524.70 | 6582.15 | 6791.33 | 7000.50 | 6955.30 | 6910.12 | 6864.94 | 6819.75 |
| Depreciation and Amortisation | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 |
| Profit before Tax | 8656.49 | 7905.44 | 6109.54 | 6166.99 | 6376.17 | 6585.34 | 6540.14 | 6494.97 | 6449.78 | 6404.60 |
| Tax | 865.65 | 792.86 | 615.41 | 658.22 | 679.13 | 700.05 | 695.53 | 691.01 | 686.49 | 681.97 |
| Distributable Profit | 7790.83 | 7112.58 | 5494.13 | 5508.78 | 5697.04 | 5885.29 | 5844.61 | 5803.95 | 5763.28 | 5722.62 |
| Dividend | 572.65 | 572.65 | 858.97 | 1145.29 | 1145.29 | 1145.29 | 1431.62 | 1431.62 | 1431.62 | 1717.94 |
| Retained Earnings | 7218.19 | 6539.92 | 4635.16 | 4363.49 | 4551.75 | 4740.00 | 4412.99 | 4372.33 | 4331.67 | 4004.68 |
| Add Back : Depreciation & Amortisation | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 |
| NET CASH ACCRUAL | 7633.35 | 6955.09 | 5050.32 | 4778.64 | 4966.91 | 5155.16 | 4828.15 | 4787.49 | 4746.82 | 4419.83 |

JOB NO. : DCIL-105 EXHIBIT : 50

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF FIXED ASSETS AND DEPRECIATION UNDER STRAIGHT LINE METHOD

('000 RS $)

| Description | Value | Technical Know-how Fees | Sub-Total | Contin-gency | Sub-Total | Interest during Construct | Sub-Total | 50% of Pre-op Expenses | Total | Rate (%) | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Land & Land Development | 3996.00 | 0.00 | 3996.00 | 0.00 | 3996.00 | 0.00 | 3996.00 | 0.00 | 3996.00 | 0% | 0.00 |
| 2. Building & Civil Work | 3139.00 | 250.23 | 3389.23 | 340.47 | 3729.70 | 509.23 | 4238.93 | 335.45 | 4574.38 | 4% | 182.98 |
| 3. Plant & Mahinery | 1259.30 | 100.38 | 1359.68 | 136.59 | 1496.27 | 204.29 | 1700.56 | 134.58 | 1835.14 | 8% | 146.81 |
| 4. Miscellaneous Fixed Assets | 193.10 | 15.39 | 208.49 | 20.94 | 229.43 | 31.33 | 260.76 | 20.63 | 281.39 | 12% | 33.77 |
| 5. Preliminary Expenses | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 10% | 2.50 |
| 6. Pre-operative Expenses | 981.66 | 0.00 | 981.66 | 0.00 | 981.66 | 0.00 | 981.66 | -490.66 | 491.00 | 10% | 49.10 |
| 7. Technical Know-how Fees | 366.00 | -366.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0% | 0.00 |
| Sub-total | 9960.06 | | 9960.06 | | 10458.06 | | 11202.91 | | 11202.91 | | 415.16 |
| 8. Contingency | 498.00 | 0.00 | 498.00 | -498.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Sub-total | 10458.06 | | 10458.06 | | 10458.06 | | 11202.91 | | 11202.91 | | |
| 9. Interest during Construction | 744.85 | 0.00 | 744.85 | 0.00 | 744.85 | -744.85 | 0.00 | 0.00 | 0.00 | | |
| Total | 11202.91 | | 11202.91 | | 11202.91 | | 11202.91 | | 11202.91 | | |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 51

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

TAX COMPUTATION

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Profit before Depreciation | 9071.65 | 8320.59 | 6524.70 | 6582.15 | 6791.33 | 7000.50 | 6955.30 | 6910.12 | 6864.94 | 6819.75 |
| Less : Current Depreciation | 415.15 | 392.04 | 370.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Balance | 8656.49 | 7928.55 | 6154.06 | 6582.15 | 6791.33 | 7000.50 | 6955.30 | 6910.12 | 6864.94 | 6819.75 |
| Less : Unabsorbed Depreciation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Taxable Income | 8656.49 | 7928.55 | 6154.06 | 6582.15 | 6791.33 | 7000.50 | 6955.30 | 6910.12 | 6864.94 | 6819.75 |
| Tax @ 10% | 865.65 | 792.86 | 615.41 | 658.22 | 679.13 | 700.05 | 695.53 | 691.01 | 686.49 | 681.97 |

JOB NO. : DCIL-105 EXHIBIT : 52

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

DEPRECIATION FOR TAX

('000 US $)

| | WDV Rate | Building & Civil Work 4% | Plant and Machinery 8% | Misc. Fixed Assets 10% | Amortisation 10% | Total |
|---|---|---|---|---|---|---|
| Value | | 4574.38 | 1835.14 | 281.39 | 516.00 | |
| Depreciation Year 1 | | 182.98 | 146.81 | 33.77 | 51.60 | 415.15 |
| Balance | | 4391.40 | 1688.33 | 247.62 | 464.40 | |
| Depreciation Year 2 | | 175.66 | 135.07 | 29.71 | 51.60 | 392.04 |
| Balance | | 4215.75 | 1553.26 | 217.91 | 412.80 | |
| Depreciation Year 3 | | 168.63 | 124.26 | 26.15 | 51.60 | 370.64 |
| Balance | | 4047.12 | 1429.00 | 191.76 | 361.20 | |
| Depreciation Year 4 | | 161.88 | 114.32 | 23.01 | 51.60 | 350.82 |
| Balance | | 3885.23 | 1314.68 | 168.75 | 309.60 | |
| Depreciation Year 5 | | 155.41 | 105.17 | 20.25 | 51.60 | 332.43 |
| Balance | | 3729.82 | 1209.51 | 148.50 | 258.00 | |
| Depreciation Year 6 | | 149.19 | 96.76 | 17.82 | 51.60 | 315.37 |
| Balance | | 3580.63 | 1112.75 | 130.68 | 206.40 | |
| Depreciation Year 7 | | 143.23 | 89.02 | 15.68 | 51.60 | 299.53 |
| Balance | | 3437.40 | 1023.73 | 115.00 | 154.80 | |
| Depreciation Year 8 | | 137.50 | 81.90 | 13.80 | 51.60 | 284.79 |
| Balance | | 3299.91 | 941.83 | 101.20 | 103.20 | |
| Depreciation Year 9 | | 132.00 | 75.35 | 12.14 | 51.60 | 271.09 |
| Balance | | 3167.91 | 866.48 | 89.05 | 51.60 | |
| Depreciation Year 10 | | 126.72 | 69.32 | 10.69 | 51.60 | 258.32 |
| Balance | | 3041.19 | 797.16 | 78.37 | 0.00 | |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 53

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

WORKING CAPITAL REQUIREMENTS
(Excluding Cash and Bank Balances)

('000 US $)

| Items | OPERATING YEAR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. Raw materials & Consumables | 2061.55 | 7730.82 | 9276.99 | 9276.99 | 9276.99 | 9276.99 | 9276.99 | 9276.99 | 9276.99 | 9276.99 |
| 2. Finished Stock | 2192.20 | 2714.85 | 3237.50 | 3243.84 | 3250.19 | 3256.54 | 3262.89 | 3269.23 | 3275.58 | 3281.93 |
| 3. Sundry Debtors | 3013.70 | 3617.29 | 3976.88 | 4006.85 | 4006.85 | 4006.85 | 4006.85 | 4006.85 | 4006.85 | 4006.85 |
| TOTAL | 7267.45 | 14062.96 | 16491.37 | 16527.68 | 16534.03 | 16540.38 | 16546.73 | 16553.07 | 16559.42 | 16565.77 |
| Increase /(decrease) | 7267.45 | 6795.51 | 2428.41 | 36.31 | 6.35 | 6.35 | 6.35 | 6.34 | 6.35 | 6.35 |
| Stock Variation | 2192.20 | 522.65 | 522.65 | 6.34 | 6.35 | 6.35 | 6.35 | 6.34 | 6.35 | 6.35 |

JOB NO. : DCIL-105

EXHIBIT : 54

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

PROJECTED CASH FLOW STATEMENT

('000 DS $)

| | Construction Period | Y 1 | 2 | R 3 | 4 | A 5 | 6 | R 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A. SOURCES | | | | | | | | | | | |
| Increase in Share Capital | 5726.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Term Loan | 5726.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Bank Loan | 0.00 | 7267.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Profit before Tax with Interest added back | 0.00 | 10361.11 | 9610.05 | 7559.79 | 7264.72 | 7121.37 | 6978.02 | 6834.64 | 6691.29 | 6547.95 | 6404.60 |
| Depreciation | 0.00 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 | 415.16 |
| TOTAL 'A' | 11452.94 | 18043.72 | 10025.21 | 7974.95 | 7679.88 | 7536.53 | 7393.17 | 7249.80 | 7106.45 | 6963.11 | 6819.75 |
| B. APPLICATIONS | | | | | | | | | | | |
| Increase in Capital Expenditure | 10458.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase/(Decrease) in Working Capital | 0.00 | 7267.45 | 6795.51 | 2428.41 | 16.31 | 6.35 | 6.35 | 6.35 | 6.34 | 6.35 | 6.35 |

JOB NO. : DCIL-185

EXHIBIT : 54

('000 US $)

| | Construction Period | Y 1 | 2 | R 3 | 4 | A 5 | 6 | R 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Interest | | | | | | | | | | | |
| On Term Loan - @ 12% p.a. | 744.85 | 687.18 | 687.18 | 687.18 | 589.01 | 490.84 | 392.67 | 294.50 | 196.33 | 98.17 | 0.00 |
| On Working Capital Loan - @ 14% p.a. | 0.00 | 1017.44 | 1017.44 | 763.08 | 508.72 | 254.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total Interest | 744.85 | 1704.62 | 1704.62 | 1450.26 | 1097.73 | 745.20 | 392.67 | 294.50 | 196.33 | 98.17 | 0.00 |
| Tax | 0.00 | 865.65 | 792.86 | 615.41 | 658.22 | 679.13 | 700.05 | 695.53 | 691.01 | 686.49 | 681.97 |
| Dividend | 0.00 | 572.65 | 572.65 | 858.97 | 1145.29 | 1145.29 | 1145.29 | 1431.62 | 1431.62 | 1431.62 | 1717.94 |
| Repayment of Term Loan | 0.00 | 0.00 | 0.00 | 818.07 | 818.07 | 818.07 | 818.07 | 818.07 | 818.07 | 818.05 | 0.00 |
| Repayment of Working Capital Loan | 0.00 | 0.00 | 1816.86 | 1816.86 | 1816.86 | 1816.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL 'B' | 11202.91 | 10410.37 | 11682.50 | 7987.97 | 5572.47 | 5210.91 | 3062.43 | 3246.06 | 3143.38 | 3040.68 | 2406.26 |
| Opening Balance | 0.00 | 250.03 | 7883.38 | 6226.09 | 6213.06 | 8320.47 | 10646.09 | 14976.83 | 18980.57 | 22943.65 | 26866.07 |
| Surplus /(Deficit) during the Year ( A - B ) | 250.03 | 7633.35 | -1657.29 | -13.03 | 2107.40 | 2325.61 | 4330.74 | 4003.74 | 3963.08 | 3922.43 | 4413.49 |
| Closing Balance | 250.03 | 7883.38 | 6226.09 | 6213.06 | 8320.47 | 10646.09 | 14976.83 | 18980.57 | 22943.65 | 26866.07 | 31279.56 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-185 EXHIBIT : 55

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED BALANCE SHEET

('000 US $)

| | | Y | | | R | | A | | | R | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | Share Capital | 5726.47 | 5726.47 | 5726.47 | 5726.47 | 5726.47 | 5726.47 | 5726.47 | 5726.47 | 5726.47 | 5726.47 |
| Add: | Reserves & Surplus | 7218.19 | 13758.11 | 18391.27 | 22756.76 | 27308.51 | 32048.51 | 36461.51 | 40833.83 | 45165.50 | 49170.18 |
| | SHAREHOLDERS' FUND | 12944.65 | 19484.58 | 24119.74 | 28483.23 | 33034.98 | 37774.98 | 42187.98 | 46560.29 | 50891.97 | 54896.65 |
| Less: | Intangible Assets | 464.40 | 412.80 | 361.20 | 309.60 | 258.00 | 206.40 | 154.80 | 103.20 | 51.60 | 0.00 |
| | TANGIBLE NET WORTH | 12480.25 | 19071.78 | 23758.54 | 28173.63 | 32776.98 | 37568.59 | 42033.18 | 46457.09 | 50840.37 | 54896.65 |
| Add: | Term Loan | 5726.47 | 5726.47 | 4908.40 | 4090.33 | 3272.26 | 2454.19 | 1636.12 | 818.05 | 0.00 | 0.00 |
| | CAPITAL FUND | 18206.73 | 24798.25 | 28666.94 | 32263.95 | 36049.24 | 40022.77 | 43669.30 | 47275.15 | 50840.37 | 54896.65 |
| Less: | Net Fixed Assets | 10323.35 | 9959.79 | 9596.23 | 9232.67 | 8869.12 | 8505.56 | 8142.00 | 7778.44 | 7414.89 | 7051.32 |
| | NET CURRENT ASSETS | 7883.38 | 14838.46 | 19070.70 | 23031.28 | 27180.12 | 31517.21 | 35527.30 | 39496.72 | 43425.49 | 47845.33 |
| A. | CURRENT ASSETS | | | | | | | | | | |
| | Working Capital | 7267.45 | 14062.96 | 16491.37 | 16527.68 | 16534.03 | 16540.38 | 16546.73 | 16553.07 | 16559.42 | 16565.77 |
| | Cash & Bank Balance as per Cash Flow Statement | 7883.38 | 6226.09 | 6213.06 | 8320.47 | 10646.09 | 14976.83 | 18980.57 | 22943.65 | 26866.07 | 31279.56 |
| | TOTAL 'A' | 15150.83 | 20289.05 | 22704.44 | 24848.15 | 27180.12 | 31517.21 | 35527.30 | 39496.72 | 43425.49 | 47845.33 |
| B. | CURRENT LIABILITIES | | | | | | | | | | |
| | Bank Loan | 7267.45 | 5450.59 | 3633.73 | 1816.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | TOTAL 'B' | 7267.45 | 5450.59 | 3633.73 | 1816.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | NET CURRENT ASSETS (A-B) | 7883.38 | 14838.46 | 19070.70 | 23031.28 | 27180.12 | 31517.21 | 35527.30 | 39496.72 | 43425.49 | 47845.33 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 56

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION AND ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**BREAK-EVEN ANALYSIS**

('000 US $)

| Sl. No. | Particulars | | Amount |
|---|---|---|---|
| 1. | Raw Materials and Consumables | | 59719.60 |
| 2. | Power | | 106.77 |
| 3. | Water | | 2.35 |
| 4. | Sub-total (1 thru 3) | | 59828.72 |
| 5. | Contingency | | 2991.44 |
| 6. | VARIABLE COSTS | | 62820.16 |
| 7. | REVENUE | | 81250.00 |
| 8. | CONTRIBUTION (7 - 6) | | 18429.84 |
| 9. | Labour & Plant Overhead* | | 1801.91 |
| 10. | Other Factory Expenses | | 83.00 |
| 11. | Administrative & Sales Expenses* | | 1543.09 |
| 12. | Sub-Total (9 thru 11) | | 3428.01 |
| 13. | Contingency | | 171.40 |
| 14. | Sub-Total (12+13) | | 3599.41 |
| 15. | Interest** | | 1536.82 |
| 16. | Depreciation | | 415.16 |
| 17. | FIXED COSTS | | 5551.38 |
| | BREAK-EVEN SALES | 17*7/8 | 24473.87 |
| | BREAK-EVEN POINT | | 30.1% |
| | CASH BREAK-EVEN SALES | | 22643.58 |
| | CASH BREAK-EVEN POINT | | 27.9% |

* Average over 10 years
** Average over 5 years

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

## PROJECT PROFILE ON BARE WIRES

### INTERNAL RATE OF RETURN

('000 US $)

| Year | Outflow | Inflow | Net Inflow |
|---|---|---|---|
| 0 | -11452.94 | 0.00 | -11452.94 |
| 1 | 0.00 | 10776.27 | 10776.27 |
| 2 | 0.00 | 10025.21 | 10025.21 |
| 3 | 0.00 | 7974.96 | 7974.96 |
| 4 | 0.00 | 7679.88 | 7679.88 |
| 5 | 0.00 | 7536.53 | 7536.53 |
| 6 | 0.00 | 7393.17 | 7393.17 |
| 7 | 0.00 | 7249.81 | 7249.81 |
| 8 | 0.00 | 7106.45 | 7106.45 |
| 9 | 0.00 | 6963.11 | 6963.11 |
| 10 | 0.00 | 6819.75 | 6819.75 |

IRR 84.5%

Outfflow = Project Cost
Inflow = Profit before Interest,Depreciation and Tax

# PLANT LOCATION : KUWAIT

**COUNTRY : KUWAIT**

The financial analysis and evaluation of the proposed project for setting up of Bare Wire Conductors plant in this country are based on the capacity utilisation, price and costs.

***Project Cost***

The estimated cost of the project of setting up a 16,000 TPA plant ( equivalent to 48,000 Km per year) is around US $ 11.99 million as can be seen from Exhibit-58. The project cost includes the expenditure towards

- Land and land development
- Building and civil work
- Plant and machinery
- Miscellaneous fixed assets
- Preliminary expenses
- Pre-operative expenses
- Technical know-how fees

Preliminary expenses have been assumed on a lumpsum basis on the project cost. Pre-operative expenses have three components, viz., establishment, travelling expenses and miscellaneous expenses. Establishment costs have been computed on the basis of salaries payable and overheads to various personnel who have to be recruited at various levels, during the construction period. Travelling expenss have been taken as approximately 10% of establishment costs in all the nine quarters of the construction period. Miscellaneous expenses have also been taken on a lumpsum basis. Technical know-how fees have been taken as 3.5% of the project cost excluding interest during construction and margin money for working capital.

5% cushion has been provided towards contingency. This cost also includes interest during construction and margin money for working capital.

Phasing of capital expenditure is based on implementation plan, and interest during construction has been computed based on the phasing. These two are presented in Exhibits 59 and 60 respectively.

Margin money for working capital is presented in Exhibit-61. In computing margin money it is assumed that adequate provisions have to be kept towards storage of raw materials and consumables required to be imported.

The project is assumed to be financed by Debt-Equity Ratio of 1:1.

***Production, Sales and Revenue***

Statement of production and sales of various product range and the revenue that will be generated from the sales of the products over the 10-year period are presented in Exhibits 62 and 63 respectively. Capacity utilisation is assumed at the rate of 70% in the first year, 75% in the second year and 80% from the third year onwards.

***Costs***

The annual costs of production and sales computed over 10 years are presented in Exhibit-64. In estimating these costs it is assumed that the salaries and wages will increase at the flat rate of 5% every year.

***Profitability***

Projected profitability statement is presented in Exhibit-65. The average profit before tax works out to about 10% of average revenue.

Statement of fixed assets and depreciation under straight line method is presented in Exhibit-66. Tax computation and depreciation for tax are presented in Exhibits 67 and 68 repspectively.

Working capital requirements are shown in Exhibit-69.

Projected cash flow statement and balance sheet over 10-year period are shown in Exhibits 70 and 71 respectively.

The project breaks even at around 46.9% and shows internal rate of return of 61.8% as can be seen from Exhibits 72 and 73 respectively. In computing internal rate of return, outflow is taken as the project cost and inflow is taken as the profit before interest, depreciation and tax.

JOB NO. : DCIL-105 EXHIBIT : 58

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**ESTIMATED PROJECT COST**

('000 US $)

| Items | Value | Total |
|---|---|---|
| 1. Land and Land Development (@ US$ 190 per m² for 21,600 m²) | 4110.73 | 4110.73 |
| 2. Building and Civil Work | | |
| i) Workshop Building (@ US$ 934 per m² for 2,500 m²) | 2335.64 | |
| ii) Administrative Building (@ US$ 1107 per m² for 315 m²) | 348.79 | |
| iii) Auxiliary Buildings (@ US$ 1107 per m² for 508 m²) | 562.49 | |
| Sub-total (2) | | 3246.92 |
| 3. Plant and Machinery | | |
| i) Imported | | |
| - Production equipment | 953.58 | |
| - Material handling equipment | 39.24 | |
| - Tool room and maintenance equipment | 74.10 | |
| - Auxiliary equipment and handtools | 3.00 | |
| Total F.O.B. Value | 1069.92 | |
| ii) Insurance & Freight (@ 10% of FOB Value) | 106.99 | |
| iii) C.I.F. Value | 1176.91 | |
| iv) Import duty @ 6% on CIF value | 70.61 | |
| v) Transportation @ 1% of CIF Value | 11.77 | |
| Landed Cost at Site [Sub-total (3)] | | 1259.29 |

JOB NO. : DCIL-105 EXHIBIT : 58

('000 US $)

| Items | Value | Total |
|---|---|---|
| 4. Miscellaneous Fixed Assets | | |
| i) Transformers | 23.40 | |
| ii) Switchgears | 4.50 | |
| iii) Central Airconditioning system | 50.80 | |
| iv) Illumination,Fans and Room Coolers | 3.00 | |
| v) Water Pumps and Tank | 5.00 | |
| vi) Compressors | 6.00 | |
| vii) Fire fighting system | 8.00 | |
| viii) Telecommunication system | 25.00 | |
| ix) Office Furniture and Equipment | 22.00 | |
| x) Vehicles | 45.40 | |
| Sub-total (4) | | 193.10 |
| 5. Preliminary Expenses | 25.00 | 25.00 |
| 6. Pre-operative Expenses | | |
| i) Establishment | 1120.30 | |
| ii) Travelling Expenses | 110.00 | |
| iii) Miscellaneous | 45.00 | |
| | | 1275.30 |
| 7. Technical Know-how Fees | 386.00 | 386.00 |
| 8. Sub-total (1 thru 7) | - | 10496.34 |
| 9. Contingency @ 5% on above | - | 524.82 |
| 0. Sub-total (8 & 9) | - | 11021.16 |
| 1. Interest during Construction | - | 643.02 |
| 2. Margin Money for Working Capital | - | 328.46 |
| TOTAL COST | - | 11992.64 |

JOB NO. : DCIL-105

EXHIBIT : 59

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PHASING OF CAPITAL EXPENDITURE

('000 US $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1. Land and Land Development | 4110.73 | 0.00 | 822.15 | 1644.29 | 1644.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2. Building and Civil Work | 3246.92 | | | | | | | | | |
| i) Workshop Building | 2335.64 | 0.00 | 0.00 | 0.00 | 583.91 | 583.91 | 583.91 | 583.91 | 0.00 | 0.00 |
| ii) Administrative Building | 348.79 | 0.00 | 0.00 | 0.00 | 0.00 | 139.52 | 139.52 | 69.75 | 0.00 | 0.00 |
| iii) Auxiliary Buildings | 562.49 | 0.00 | 0.00 | 0.00 | 0.00 | 187.50 | 187.50 | 187.49 | 0.00 | 0.00 |
| 3. Plant and Machinery | 1259.29 | | | | | | | | | |
| i) Ordering | 377.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 377.79 | 0.00 | 0.00 | 0.00 |
| ii) Supply, delivery and installation at site | 881.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 859.46 | 22.04 |

JOB NO. : DCIL-105

EXHIBIT : 59

('000 US $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. Miscellaneous Fixed Assets | 193.10 | | | | | | | | | |
| i) Transformers | 23.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.68 | 0.00 | 18.72 | 0.00 |
| ii) Switchgears | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.90 | 0.00 | 3.60 | 0.00 |
| iii) Central Airconditioning system | 50.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.16 | 0.00 | 40.64 | 0.00 |
| iv) Illumination,Fans and Room Coolers | 3.00 | 0.30 | 0.00 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.00 | 0.00 |
| v) Water Pumps and Tank | 5.00 | 0.00 | 0.00 | 0.00 | 2.50 | 2.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| vi) Compressors | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 4.80 | 0.00 |
| vii) Fire fighting system | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.00 | 4.00 | 0.00 |
| viii) Telecommunication system | 25.00 | 0.00 | 2.50 | 0.00 | 0.00 | 2.50 | 5.00 | 5.00 | 5.00 | 5.00 |
| ix) Office Furniture and Equipment | 22.00 | 0.00 | 1.10 | 1.10 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 8.80 |
| x) Vehicles | 45.40 | 0.00 | 9.70 | 9.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 |
| 5. Preliminary Expenses | 25.00 | 12.50 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6. Pre-operative Expenses | 1275.30 | | | | | | | | | |
| i) Establishment | 1120.30 | 0.00 | 27.10 | 69.30 | 97.80 | 97.80 | 148.14 | 148.14 | 148.14 | 383.28 |
| ii) Travelling Expenses | 110.00 | 0.00 | 3.00 | 7.00 | 10.00 | 10.00 | 14.00 | 14.00 | 14.00 | 38.00 |
| iii) Miscellaneous | 45.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| 7. Technical Know-how Fees | 386.00 | 19.30 | 77.20 | 77.20 | 38.60 | 38.60 | 38.60 | 38.60 | 38.60 | 19.30 |
| 8. Sub-total (1 thru 5) | 10496.34 | 37.10 | 960.25 | 1814.13 | 2384.84 | 1070.07 | 1523.34 | 1054.83 | 1144.36 | 507.42 |
| 9. Contingency @ 5% on above | 524.82 | 1.86 | 48.01 | 90.71 | 119.24 | 53.50 | 76.17 | 52.74 | 57.22 | 25.37 |
| 10. Sub-total (6 & 7) | 11021.16 | 38.96 | 1008.26 | 1904.84 | 2504.08 | 1123.58 | 1599.51 | 1107.57 | 1201.58 | 532.79 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 60

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

ESTIMATION OF INTEREST DURING CONSTRUCTION

('000 US $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Capital Expenditure | 38.96 | 1008.26 | 1904.84 | 2504.08 | 1123.58 | 1599.51 | 1107.57 | 1201.58 | 532.79 | 11021.16 |
| Margin Money | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 328.46 | 328.46 |
| Total | 38.96 | 1008.26 | 1904.84 | 2504.08 | 1123.58 | 1599.51 | 1107.57 | 1201.58 | 861.25 | 11349.62 |
| Equity | 19.60 | 507.54 | 965.04 | 1278.69 | 600.18 | 847.19 | 610.33 | 665.31 | 502.44 | 5996.32 |
| Loan | 19.60 | 507.55 | 965.04 | 1278.68 | 600.18 | 847.19 | 610.33 | 665.31 | 502.44 | 5996.32 |
| Total | 39.20 | 1015.09 | 1930.08 | 2557.37 | 1200.36 | 1694.38 | 1220.66 | 1330.62 | 1004.88 | 11992.64 |

JOB NO. : DCIL-105

EXHIBIT : 60

('000 US $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Interest on loan | | | | | | | | | | |
| - @ 10% p.a. | 0.25 | 6.34 | 12.06 | 15.98 | 7.50 | 10.59 | 7.63 | 8.32 | 6.28 | 74.95 |
| | | 0.49 | 12.69 | 24.13 | 31.97 | 15.00 | 21.18 | 15.26 | 16.63 | 137.35 |
| | | | 0.49 | 12.69 | 24.13 | 31.97 | 15.00 | 21.18 | 15.26 | 120.72 |
| | | | | 0.49 | 12.69 | 24.13 | 31.97 | 15.00 | 21.18 | 105.46 |
| | | | | | 0.49 | 12.69 | 24.13 | 31.97 | 15.00 | 84.28 |
| | | | | | | 0.49 | 12.69 | 24.13 | 31.97 | 69.28 |
| | | | | | | | 0.49 | 12.69 | 24.13 | 37.31 |
| | | | | | | | | 0.49 | 12.69 | 13.18 |
| | | | | | | | | | 0.49 | 0.49 |
| Total | 0.25 | 6.83 | 25.24 | 53.29 | 76.78 | 94.87 | 113.09 | 129.04 | 143.63 | 643.02 |
| Debt/Equity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

MEANS OF FINANCING : EQUITY 5996.32
LOAN 5996.32

TOTAL 11992.64

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 61

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

## PROJECT PROFILE ON BARE WIRES

### MARGIN MONEY FOR WORKING CAPITAL

('000 US $)

| Sl. No. | Item | Period (Days) | Cost | Bank Finance Available (%) | Bank Finance Available (Amount) | Margin Money |
|---|---|---|---|---|---|---|
| 1. | Raw materials & Consumables | 90 | 10823.15 | 100% | 10823.15 | 0.00 |
| 2. | Finished Stock | 30 | 3795.97 | 100% | 3795.97 | 0.00 |
| 3. | Sundry Debtors | 30 | 4153.78 | 100% | 4153.78 | 0.00 |
| Sub-total | | | 18772.90 | | 18772.90 | 0.00 |
| 4. | Expenses | 30 | 328.46 | 0% | 0.00 | 328.46 |
| | Total | | 19101.36 | | 18772.90 | 328.46 |

JOB NO. : DCIL-105

EXHIBIT : 62

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### STATEMENT OF PRODUCTION AND SALES

(in MT)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Working Days/Year | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Utilisation | 70% | 75% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| UHV Conductors | | | | | | | | | | |
| Capacity (MT) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Annual Output (MT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Output/Day (MT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Opening Stock | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Production | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Stock | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sales | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HV Conductors | | | | | | | | | | |
| Capacity (MT) | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 |
| Annual Output (MT) | 2520.00 | 2700.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 |
| Output/Day (MT) | 8.40 | 9.00 | 9.60 | 9.60 | 9.60 | 9.60 | 9.60 | 9.60 | 9.60 | 9.60 |

JOB NO. : DCIL-105

EXHIBIT : 62

(in MT)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Opening Stock | 0.00 | 210.00 | 225.00 | 240.00 | 240.00 | 240.00 | 240.00 | 240.00 | 240.00 | 240.00 |
| Production | 2520.00 | 2700.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 |
| Total | 2520.00 | 2910.00 | 3105.00 | 3120.00 | 3120.00 | 3120.00 | 3120.00 | 3120.00 | 3120.00 | 3120.00 |
| Closing Stock | 210.00 | 225.00 | 240.00 | 240.00 | 240.00 | 240.00 | 240.00 | 240.00 | 240.00 | 240.00 |
| Sales | 2310.00 | 2685.00 | 2865.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 | 2880.00 |
| MV Conductors | | | | | | | | | | |
| Capacity (MT) | 3200 | 3200 | 3200 | 3200 | 3200 | 3200 | 3200 | 3200 | 3200 | 3200 |
| Annual Output (MT) | 2240.00 | 2400.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 |
| Output/Day (MT) | 7.47 | 8.00 | 8.53 | 8.53 | 8.53 | 8.53 | 8.53 | 8.53 | 8.53 | 8.53 |
| Opening Stock | 0.00 | 186.67 | 200.00 | 213.33 | 213.33 | 213.33 | 213.33 | 213.33 | 213.33 | 213.33 |
| Production | 2240.00 | 2400.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 |
| Total | 2240.00 | 2586.67 | 2760.00 | 2773.33 | 2773.33 | 2773.33 | 2773.33 | 2773.33 | 2773.33 | 2773.33 |
| Closing Stock | 186.67 | 200.00 | 213.33 | 213.33 | 213.33 | 213.33 | 213.33 | 213.33 | 213.33 | 213.33 |
| Sales | 2053.33 | 2386.67 | 2546.67 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 | 2560.00 |
| LV Conductors | | | | | | | | | | |
| Capacity (MT) | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 | 8800 |
| Annual Output (MT) | 6160.00 | 6600.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 |
| Output/Day (MT) | 20.53 | 22.00 | 23.47 | 23.47 | 23.47 | 23.47 | 23.47 | 23.47 | 23.47 | 23.47 |
| Opening Stock | 0.00 | 513.33 | 550.00 | 586.67 | 586.67 | 586.67 | 586.67 | 586.67 | 586.67 | 586.67 |
| Production | 6160.00 | 6600.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 |
| Total | 6160.00 | 7113.33 | 7590.00 | 7626.67 | 7626.67 | 7626.67 | 7626.67 | 7626.67 | 7626.67 | 7626.67 |
| Closing Stock | 513.33 | 550.00 | 586.67 | 586.67 | 586.67 | 586.67 | 586.67 | 586.67 | 586.67 | 586.67 |
| Sales | 5646.67 | 6563.33 | 7003.33 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 | 7040.00 |

JOB NO. : DCIL-105

EXHIBIT : 63

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF REVENUE

'000 DS $

| | Average Selling Price (DS $/MT) | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| UNV Conductors | 7500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HV Conductors | 3700.00 | 8547.00 | 9934.50 | 10600.50 | 10656.00 | 10656.00 | 10656.00 | 10656.00 | 10656.00 | 10656.00 | 10656.00 |
| MV Conductors | 8900.00 | 18274.67 | 21241.33 | 22665.33 | 22784.00 | 22784.00 | 22784.00 | 22784.00 | 22784.00 | 22784.00 | 22784.00 |
| LV Conductors | 4200.00 | 23716.00 | 27566.00 | 29414.00 | 29568.00 | 29568.00 | 29568.00 | 29568.00 | 29568.00 | 29568.00 | 29568.00 |
| Total | | 50537.67 | 58741.83 | 62679.83 | 63008.00 | 63008.00 | 63008.00 | 63008.00 | 63008.00 | 63008.00 | 63008.00 |

JOB NO. : DCIL-105

EXHIBIT : 64

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

COST OF PRODUCTION AND SALES

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| A. Variable Cost | | | | | | | | | | |
| Raw Materials and Consumables | 41803.72 | 44789.70 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 |
| Power | 7.09 | 7.55 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| Water | 3.46 | 3.71 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| Sub-total | 41814.27 | 44800.95 | 47787.64 | 47787.64 | 47787.64 | 47787.64 | 47787.64 | 47787.64 | 47787.64 | 47787.64 |
| Contingency (@ 5% on above) | 2090.71 | 2240.05 | 2389.38 | 2389.38 | 2389.38 | 2389.38 | 2389.38 | 2389.38 | 2389.38 | 2389.38 |
| Total 'A' | 43904.98 | 47041.00 | 50177.02 | 50177.02 | 50177.02 | 50177.02 | 50177.02 | 50177.02 | 50177.02 | 50177.02 |
| B. Fixed Cost | | | | | | | | | | |
| i) Labour & Plant Overhead * | | | | | | | | | | |
| a) Direct labour | 828.00 | 869.40 | 910.80 | 952.20 | 993.60 | 1035.00 | 1076.40 | 1117.80 | 1159.20 | 1200.60 |
| b) Indirect labour | 351.37 | 368.94 | 386.51 | 404.08 | 421.64 | 439.21 | 456.78 | 474.35 | 491.92 | 509.49 |
| c) Supervision | 1002.00 | 1052.10 | 1102.20 | 1152.30 | 1202.40 | 1252.50 | 1302.60 | 1352.70 | 1402.80 | 1452.90 |
| Sub-total | 2181.37 | 2290.44 | 2399.51 | 2508.58 | 2617.64 | 2726.71 | 2835.78 | 2944.85 | 3053.92 | 3162.99 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 64

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ii) Other Factory Expenses | | | | | | | | | | |
| a) Maintenance @ 3% on Plant & Equipment | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 |
| b) Maintenance @ 1% on Building & Civil Work | 32.47 | 32.47 | 32.47 | 32.47 | 32.47 | 32.47 | 32.47 | 32.47 | 32.47 | 32.47 |
| c) Miscellaneous | 14.05 | 14.05 | 14.05 | 14.05 | 14.05 | 14.05 | 14.05 | 14.05 | 14.05 | 14.05 |
| Sub-total | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 |
| iii) Administrative & Sales Expenses | | | | | | | | | | |
| a) Salaries * | 1231.32 | 1292.89 | 1354.45 | 1416.02 | 1477.58 | 1539.15 | 1600.72 | 1662.28 | 1723.85 | 1785.41 |
| b) Overheads | 246.26 | 258.58 | 270.89 | 283.20 | 295.52 | 307.83 | 320.14 | 332.46 | 344.77 | 357.08 |
| Sub-total | 1477.58 | 1551.46 | 1625.34 | 1699.22 | 1773.10 | 1846.98 | 1920.86 | 1994.74 | 2068.62 | 2142.50 |
| Total (i+ii+iii) | 3743.25 | 3926.20 | 4109.15 | 4292.09 | 4475.04 | 4657.99 | 4840.94 | 5023.89 | 5206.83 | 5389.78 |
| Contingency (@ 5% on above) | 187.16 | 196.31 | 205.46 | 214.60 | 223.75 | 232.90 | 242.05 | 251.19 | 260.34 | 269.49 |
| Total 'B' | 3930.41 | 4122.51 | 4314.60 | 4506.70 | 4698.79 | 4890.89 | 5082.99 | 5275.07 | 5467.17 | 5659.27 |
| Total Cost of Production and Sales (A+B) | 47835.40 | 51163.51 | 54491.62 | 54683.72 | 54875.81 | 55067.91 | 55260.01 | 55452.09 | 55644.19 | 55836.29 |

* Assumed to increase at the flat rate of 5% straight line every year

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 65

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED PROFITABILITY STATEMENT

('000 US $)

| Elements | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Raw Materials and Consumables | 41803.72 | 44789.70 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 |
| Power | 7.09 | 7.55 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| Water | 3.46 | 3.71 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 | 3.95 |
| Labour & Plant Overhead | 2181.37 | 2290.44 | 2399.51 | 2508.58 | 2617.64 | 2726.71 | 2835.78 | 2944.85 | 3053.92 | 3162.99 |
| Other Factory Expenses | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 | 84.30 |
| Administrative & Sales Expenses | 1477.58 | 1551.46 | 1625.34 | 1699.22 | 1773.10 | 1846.99 | 1920.86 | 1994.74 | 2068.62 | 2142.50 |
| Sub-total | 45557.52 | 48727.16 | 51896.78 | 52079.73 | 52262.68 | 52445.62 | 52628.57 | 52811.52 | 52994.47 | 53177.43 |
| Contingency | 2277.87 | 2436.36 | 2594.84 | 2603.99 | 2613.13 | 2622.28 | 2631.43 | 2640.58 | 2649.72 | 2658.87 |
| Total | 47835.39 | 51163.52 | 54491.62 | 54683.72 | 54875.81 | 55067.90 | 55260.00 | 55452.10 | 55644.19 | 55836.29 |
| Stock Variation | -3795.97 | -267.11 | -267.11 | -9.41 | -9.41 | -9.42 | -9.41 | -9.41 | -9.41 | -9.42 |
| Cost of Production and Sales | 44039.42 | 50896.41 | 54224.51 | 54674.31 | 54866.40 | 55058.48 | 55250.59 | 55442.69 | 55634.78 | 55826.87 |
| PROJECTED REVENUE | 50537.67 | 58741.83 | 62679.83 | 63008.00 | 63008.00 | 63008.00 | 63008.00 | 63008.00 | 63008.00 | 63008.00 |
| Profit before Interest and Depreciation | 6498.25 | 7845.42 | 8455.32 | 8333.69 | 8141.60 | 7949.52 | 7757.41 | 7565.31 | 7373.22 | 7181.13 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 65

('000 RS $)

| Elements | OPERATING YEARS 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Interest | | | | | | | | | | |
| On Term Loan - @ 10% p.a. | 599.63 | 599.63 | 599.63 | 513.97 | 428.31 | 342.65 | 256.98 | 171.32 | 85.66 | 0.00 |
| On Working Capital Loan - @ 12% p.a. | 2252.75 | 2252.75 | 1689.56 | 1126.37 | 563.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sub-total | 2852.38 | 2852.38 | 2289.19 | 1640.34 | 991.50 | 342.65 | 256.98 | 171.32 | 85.66 | 0.00 |
| Profit before Depreciation | 3645.87 | 4993.04 | 6166.14 | 6693.35 | 7150.10 | 7606.87 | 7500.43 | 7393.99 | 7287.56 | 7181.13 |
| Depreciation and Amortisation | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 |
| Profit before Tax | 3207.44 | 4554.61 | 5727.71 | 6254.92 | 6711.67 | 7168.44 | 7062.00 | 6955.56 | 6849.13 | 6742.70 |
| Tax | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Distributable Profit | 3207.44 | 4554.61 | 5727.71 | 6254.92 | 6711.67 | 7168.44 | 7062.00 | 6955.56 | 6849.13 | 6742.70 |
| Dividend | 0.00 | 599.63 | 599.63 | 599.63 | 749.54 | 749.54 | 749.54 | 899.45 | 899.45 | 1199.26 |
| Retained Earnings | 3207.44 | 3954.98 | 5128.08 | 5655.29 | 5962.13 | 6418.90 | 6312.46 | 6056.11 | 5949.68 | 5543.44 |
| Add Back : Depreciation & Amortisation | 438.44 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 |
| NET CASH ACCRUAL | 3645.88 | 4393.41 | 5566.51 | 6093.72 | 6400.56 | 6857.33 | 6750.89 | 6494.54 | 6388.11 | 5981.87 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 66

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF FIXED ASSETS AND DEPRECIATION UNDER STRAIGHT LINE METHOD

('000 DS $)

| Description | Va' | Technical Know-how Fees | Sub-Total | Contin-gency | Sub-Total | Interest during Construct. | Sub-Total | 50% of Pre-op Expenses | Total | Rate (%) | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Land & Land Development | 4110.73 | 0.00 | 4110.73 | 0.00 | 4110.73 | 0.00 | 4110.73 | 0.00 | 4110.73 | 0% | 0.00 |
| 2. Building & Civil Work | 3246.92 | 266.70 | 3513.62 | 362.61 | 3876.23 | 444.29 | 4320.52 | 440.33 | 4760.85 | 4% | 190.43 |
| 3. Plant & Mahinery | 1259.29 | 103.44 | 1362.73 | 140.64 | 1503.37 | 172.31 | 1675.68 | 170.78 | 1846.46 | 8% | 147.72 |
| 4. Miscellaneous Fixed Assets | 193.10 | 15.86 | 208.96 | 21.57 | 230.53 | 26.42 | 256.95 | 26.19 | 283.14 | 12% | 33.98 |
| 5. Preliminary Expenses | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 10% | 2.50 |
| 6. Pre-operative Expenses | 1275.30 | 0.00 | 1275.30 | 0.00 | 1275.30 | 0.00 | 1275.30 | -637.30 | 638.00 | 10% | 63.80 |
| 7. Technical Know-how Fees | 386.00 | -386.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0% | 0.00 |
| Sub-total | 10496.33 | | 10496.33 | | 11021.16 | | 11664.18 | | 11664.18 | | 438.43 |
| 8. Contingency | 524.82 | 0.00 | 524.82 | -524.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Sub-total | 11021.16 | | 11021.16 | | 11021.16 | | 11664.18 | | 11664.18 | | |
| 9. Interest during Construction | 643.02 | 0.00 | 643.02 | 0.00 | 643.02 | -643.02 | 0.00 | 0.00 | 0.00 | | |
| Total | 11664.18 | | 11664.18 | | 11664.18 | | 11664.18 | | 11664.18 | | |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 67

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

TAX COMPUTATION

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Profit before Depreciation | 3645.87 | 4993.04 | 6166.14 | 6693.35 | 7150.10 | 7606.87 | 7500.43 | 7393.99 | 7287.56 | 7181.13 |
| Less : Current Depreciation | 438.43 | 414.92 | 393.14 | 306.66 | 287.94 | 270.56 | 254.41 | 239.39 | 225.41 | 212.38 |
| Balance | 3207.45 | 4578.13 | 5772.99 | 6386.69 | 6862.15 | 7336.31 | 7246.02 | 7154.60 | 7062.15 | 6968.74 |
| Less : Unabsorbed Depreciation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Taxable Income | 3207.45 | 4578.13 | 5772.99 | 6386.69 | 6862.15 | 7336.31 | 7246.02 | 7154.60 | 7062.15 | 6968.74 |
| Tax @ 0% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

JOB NO. : DCIL-105

EXHIBIT : 68

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

DEPRECIATION FOR TAX

('000 US $)

| | WDV Rate | Building & Civil Work 4% | Plant and Machinery 8% | Misc. Fixed Assets 10% | Amortisation 10% | Total |
|---|---|---|---|---|---|---|
| Value | | 4760.85 | 1846.46 | 283.14 | 663.00 | |
| Depreciation Year 1 | | 190.43 | 147.72 | 33.98 | 66.30 | 438.43 |
| Balance | | 4570.41 | 1698.75 | 249.16 | 596.70 | |
| Depreciation Year 2 | | 182.82 | 135.90 | 29.90 | 66.30 | 414.92 |
| Balance | | 4387.59 | 1562.85 | 219.26 | 530.40 | |
| Depreciation Year 3 | | 175.50 | 125.03 | 26.31 | 66.30 | 393.14 |
| Balance | | 4212.09 | 1437.82 | 192.95 | 464.10 | |
| Depreciation Year 4 | | 168.48 | 115.03 | 23.15 | 66.30 | 372.96 |
| Balance | | 4043.61 | 1322.79 | 169.80 | 397.80 | |
| Depreciation Year 5 | | 161.74 | 105.82 | 20.38 | 66.30 | 354.24 |
| Balance | | 3881.86 | 1216.97 | 149.42 | 331.50 | |
| Depreciation Year 6 | | 155.27 | 97.36 | 17.93 | 66.30 | 336.86 |
| Balance | | 3726.59 | 1119.61 | 131.49 | 265.20 | |
| Depreciation Year 7 | | 149.06 | 89.57 | 15.78 | 66.30 | 320.71 |
| Balance | | 3577.53 | 1030.04 | 115.71 | 198.90 | |
| Depreciation Year 8 | | 143.10 | 82.40 | 13.89 | 66.30 | 305.69 |
| Balance | | 3434.42 | 947.64 | 101.83 | 132.60 | |
| Depreciation Year 9 | | 137.38 | 75.81 | 12.22 | 66.30 | 291.71 |
| Balance | | 3297.05 | 871.83 | 89.61 | 66.30 | |
| Depreciation Year 10 | | 131.88 | 69.75 | 10.75 | 66.30 | 278.68 |
| Balance | | 3165.17 | 802.08 | 78.85 | 0.00 | |

WDV : Written Down Value

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 69

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

WORKING CAPITAL REQUIREMENTS
(Excluding Cash and Bank Balances)

('000 US $)

| Items | OPERATING YEAR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. Raw materials & Consumables | 10823.15 | 11596.24 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 |
| 2. Finished Stock | 3795.97 | 4063.08 | 4330.19 | 4339.60 | 4349.01 | 4358.43 | 4367.84 | 4377.25 | 4386.66 | 4396.08 |
| 3. Sundry Debtors | 4153.78 | 4828.10 | 5151.77 | 5178.74 | 5178.74 | 5178.74 | 5178.74 | 5178.74 | 5178.74 | 5178.74 |
| TOTAL | 18772.90 | 20487.42 | 21851.28 | 21887.66 | 21897.07 | 21906.49 | 21915.90 | 21925.31 | 21934.72 | 21944.14 |
| Increase /(decrease) | 18772.90 | 1714.52 | 1363.86 | 36.38 | 9.41 | 9.42 | 9.41 | 9.41 | 9.41 | 9.42 |
| Stock Variation | 3795.97 | 267.11 | 267.11 | 9.41 | 9.41 | 9.42 | 9.41 | 9.41 | 9.41 | 9.42 |

JOB NO. : DCIL-185 EXHIBIT : 70

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED CASH FLOW STATEMENT

('000 US $)

| | Construction Period | Y 1 | 2 | E 3 | 4 | A 5 | 6 | R 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A. SOURCES | | | | | | | | | | | |
| Increase in Share Capital | 5996.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Term Loan | 5996.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Bank Loan | 0.00 | 18772.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Profit Before Tax with Interest added back | 0.00 | 6059.82 | 7406.99 | 8016.90 | 7895.26 | 7703.17 | 7511.09 | 7318.98 | 7126.88 | 6934.79 | 6742.70 |
| Depreciation | 0.00 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 | 438.43 |
| TOTAL 'A' | 11992.64 | 25271.15 | 7845.42 | 8455.33 | 8333.69 | 8141.60 | 7949.52 | 7757.41 | 7565.31 | 7373.22 | 7181.13 |
| B. APPLICATIONS | | | | | | | | | | | |
| Increase in Capital Expenditure | 11021.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase/(Decrease) in Working Capital | 0.00 | 18772.90 | 1714.52 | 1363.86 | 36.18 | 9.41 | 9.42 | 9.41 | 9.41 | 9.41 | 9.42 |

JOB NO. : DCIL-105

EXHIBIT : 70

('000 Rs $)

| | Construction Period | Y 1 | 2 | R 3 | 4 | A 5 | 6 | R 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Interest | | | | | | | | | | | |
| On Term Loan - @ 10% p.a. | 643.02 | 599.63 | 599.63 | 599.63 | 513.97 | 428.31 | 342.65 | 256.98 | 171.32 | 85.66 | 0.00 |
| On Working Capital Loan - @ 12% p.a. | 0.00 | 2252.75 | 2252.75 | 1689.56 | 1126.37 | 563.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total Interest | 643.02 | 2852.38 | 2852.38 | 2289.19 | 1640.34 | 991.50 | 342.65 | 256.98 | 171.32 | 85.66 | 0.00 |
| Tax | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Dividend | 0.00 | 0.00 | 599.63 | 599.63 | 599.63 | 749.54 | 749.54 | 749.54 | 899.45 | 899.45 | 1199.26 |
| Repayment of Term Loan | 0.00 | 0.00 | 0.00 | 856.62 | 856.62 | 856.62 | 856.62 | 856.62 | 856.62 | 856.60 | 0.00 |
| Repayment of Working Capital Loan | 0.00 | 0.00 | 4693.22 | 4693.22 | 4693.22 | 4693.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL 'B' | 11664.18 | 21625.28 | 9959.75 | 9802.52 | 7826.19 | 7100.11 | 1958.23 | 1872.55 | 1936.80 | 1851.12 | 1208.68 |
| Opening Balance | 0.00 | 328.46 | 3974.33 | 1960.00 | 612.81 | 1120.31 | 1961.60 | 7952.89 | 13837.75 | 19466.26 | 24988.36 |
| Surplus / (Deficit) during the Year ( A - B ) | 328.46 | 3645.87 | -2014.33 | -1347.19 | 507.50 | 841.29 | 5991.29 | 5884.86 | 5628.51 | 5522.10 | 5972.45 |
| Closing Balance | 328.46 | 3974.33 | 1960.00 | 612.81 | 1120.31 | 1961.60 | 7952.89 | 13837.75 | 19466.26 | 24988.36 | 30960.81 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 71

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED BALANCE SHEET

('000 US $)

| | | Y E A R | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | Share Capital | 5996.32 | 5996.32 | 5996.32 | 5996.32 | 5996.32 | 5996.32 | 5996.32 | 5996.32 | 5996.32 | 5996.32 |
| Add: | Reserves & Surplus | 3207.44 | 7162.42 | 12290.50 | 17945.79 | 23907.92 | 30326.92 | 36639.28 | 42695.39 | 48645.07 | 54188.51 |
| | SHARRHOLRERS' FUND | 9203.76 | 13158.74 | 18286.82 | 23942.11 | 29904.24 | 36323.14 | 42635.60 | 48691.71 | 54641.39 | 60184.83 |
| Less: | Intangible Assets | 596.70 | 530.40 | 464.10 | 397.80 | 331.50 | 265.20 | 198.90 | 132.60 | 66.30 | 0.00 |
| | TANGIBLE NET WORTH | 8607.06 | 12628.34 | 17822.72 | 23544.31 | 29572.74 | 36057.94 | 42436.70 | 48559.11 | 54575.09 | 60184.83 |
| Add: | Term Loan | 5996.32 | 5996.32 | 5139.70 | 4283.08 | 3426.46 | 2569.84 | 1713.22 | 856.60 | 0.00 | 0.00 |
| | CAPITAL FUND | 14603.38 | 18624.66 | 22962.42 | 27827.39 | 32999.20 | 38627.78 | 44149.92 | 49415.71 | 54575.09 | 60184.83 |
| Less: | Net Fixed Assets | 10629.05 | 10256.92 | 9884.79 | 9512.66 | 9140.53 | 8768.40 | 8396.27 | 8024.14 | 7652.01 | 7279.88 |
| | NET CURRENT ASSETS | 3974.33 | 8367.74 | 13077.63 | 18314.73 | 23858.67 | 29859.38 | 35753.65 | 41391.57 | 46923.08 | 52904.95 |
| A. | CURRENT ASSETS | | | | | | | | | | |
| | Working Capital | 18772.90 | 20487.42 | 21851.28 | 21887.66 | 21897.07 | 21906.49 | 21915.90 | 21925.31 | 21934.72 | 21944.14 |
| | Cash & Bank Balance as per Cash Flow Statatement | 3974.33 | 1960.00 | 612.81 | 1120.31 | 1961.60 | 2952.89 | 13837.75 | 19466.26 | 24988.36 | 30960.81 |
| | TOTAL 'A' | 22747.23 | 22447.42 | 22464.09 | 23007.97 | 23858.67 | 29859.38 | 35753.65 | 41391.57 | 46923.08 | 52904.95 |
| B. | CURRENT LIABILITIES S | | | | | | | | | | |
| | Bank Loan | 18772.90 | 14079.68 | 9386.46 | 4693.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | TOTAL 'B' | 18772.90 | 14079.68 | 9386.46 | 4693.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | NET CURRENT ASSETS (A-B) | 3974.33 | 8367.74 | 13077.63 | 18314.73 | 23858.67 | 29859.38 | 35753.65 | 41391.57 | 46923.08 | 52904.95 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 72

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**BREAK-EVEN ANALYSIS**

('000 US $)

| Sl. No. | Particulars | | Amount |
|---|---|---|---|
| 1. | Raw Materials and Consumables | | 59719.60 |
| 2. | Power | | 10.01 |
| 3. | Water | | 4.94 |
| 4. | Sub-total (1 thru 3) | | 59734.55 |
| 5. | Contingency | | 2986.73 |
| 6. | VARIABLE COSTS | | 62721.28 |
| 7. | REVENUE | | 78760.00 |
| 8. | CONTRIBUTION (7 - 6) | | 16038.72 |
| 9. | Labour & Plant Overhead* | | 2672.18 |
| 10. | Other Factory Expenses | | 84.30 |
| 11. | Administrative & Sales Expenses* | | 1810.04 |
| 12. | Sub-Total (9 thru 11) | | 4566.52 |
| 13. | Contingency | | 228.33 |
| 14. | Sub-Total (12+13) | | 4794.85 |
| 15. | Interest** | | 2296.48 |
| 16. | Depreciation | | 438.43 |
| 17. | FIXED COSTS | | 7529.76 |
| | BREAK-EVEN SALES | 17*7/8 | 36975.76 |
| | BREAK-EVEN POINT | | 46.9% |
| | CASH BREAK-EVEN SALES | | 34822.82 |
| | CASH BREAK-EVEN POINT | | 44.2% |

* Average over 10 years
** Average over 5 years

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 73

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**INTERNAL RATE OF RETURN**

('000 US $)

| Year | Outflow | Inflow | Net Inflow |
|---|---|---|---|
| 0 | -11992.64 | 0.00 | -11992.64 |
| 1 | 0.00 | 6498.25 | 6498.25 |
| 2 | 0.00 | 7845.42 | 7845.42 |
| 3 | 0.00 | 8455.32 | 8455.32 |
| 4 | 0.00 | 8333.69 | 8333.69 |
| 5 | 0.00 | 8141.60 | 8141.60 |
| 6 | 0.00 | 7949.52 | 7949.52 |
| 7 | 0.00 | 7757.41 | 7757.41 |
| 8 | 0.00 | 7565.31 | 7565.31 |
| 9 | 0.00 | 7373.22 | 7373.22 |
| 10 | 0.00 | 7181.13 | 7181.13 |

IRR 61.8%

Outflow = Project Cost
Inflow = Profit before Interest, Depreciation and Tax

# PLANT LOCATION : IRAQ

**COUNTRY : IRAQ**

The financial analysis and evaluation of the proposed project for setting up of Bare Wire Conductors plant in this country are based on the capacity utilisation, price and costs.

***Project Cost***

The estimated cost of the project of setting up a 16,000 TPA plant (equivalent to 48,000 Km per year) is around US $ 13.4 million as can be seen from Exhibit-74. The project cost includes the expenditure towards

- Land and land development
- Building and civil work
- Plant and machinery
- Miscellaneous fixed assets
- Preliminary expenses
- Pre-operative expenses
- Technical know-how fees

Preliminary expenses have been assumed on a lumpsum basis on the project cost. Pre-operative expenses have three components, viz., establishment, travelling expenses and miscellaneous expenses. Establishment costs have been computed on the basis of salaries payable and overheads to various personnel who have to be recruited at various levels, during the construction period. Travelling expenss have been taken as approximately 8-10% of establishment costs in all the nine quarters of the construction period. Miscellaneous expenses have also been taken on a lumpsum basis. Technical know-how fees have been taken as 3.5% of the project cost excluding interest during construction and margin money for working capital.

5% cushion has been provided towards contingency. This cost also includes interest during construction and margin money for working capital.

Phasing of capital expenditure is based on implementation plan, and interest during construction has been computed based on the phasing. These two are presented in Exhibits 75 and 76 respectively.

Margin money for working capital is presented in Exhibit-77. In computing margin money it is assumed that adequate provisions have to be kept towards storage of raw materials and consumables required to be imported.

The project is assumed to be financed by Debt-Equity Ratio of 1:1.

***Production, Sales and Revenue***

Statement of production and sales of various product range and the revenue that will be generated from the sales of the products over the 10-year period are presented in Exhibits 78 and 79 respectively. Capacity utilisation is assumed at the rate of 70% in the first year, 75% in the second year and 80% from the third year onwards.

***Costs***

The annual costs of production and sales computed over 10 years are presented in Exhibit-80. In estimating these costs it is assumed that the salaries and wages will increase at the flat rate of 5% every year.

***Profitability***

Projected profitability statement is presented in Exhibit-81. The average profit before tax works out to 13.5% of average revenue.

Statement of fixed assets and depreciation under straight line method is presented in Exhibit-82. Tax computation and depreciation for tax are presented in Exhibits 83 and 84 repspectively.

Working capital requirements are shown in Exhibit-85.

Projected cash flow statement and balance sheet over 10-year period are shown in Exhibits 86 and 87 respectively.

The project breaks even at around 38.4% and shows internal rate of return of 72.5% as can be seen from Exhibits 88 and 89 respectively. In computing internal rate of return, outflow is taken as the project cost and inflow is taken as the profit before interest, depreciation and tax.

JOB NO. : DCIL-105

EXHIBIT : 74

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

## PROJECT PROFILE ON BARE WIRES

### ESTIMATED PROJECT COST

('000 US $)

| | Items | Value | Total |
|---|---|---|---|
| 1. | Land and Land Development (@ US$ 225 per m² for 21,600 m²) | 4860.00 | 4860.00 |
| 2. | Building and Civil Work | | |
| i) | Workshop Building (@ US$ 1125 per m² for 2,500 m²) | 2812.00 | |
| ii) | Administrative Building (@ US$ 1350 per m² for 315 m²) | 425.00 | |
| iii) | Auxiliary Buildings (@ US$ 1350 per m² for 508 m²) | 686.00 | |
| | Sub-total (2) | | 3923.00 |
| 3. | Plant and Machinery | | |
| i) | Imported | | |
| | - Production equipment | 953.58 | |
| | - Material handling equipment | 39.24 | |
| | - Tool room and maintenance equipment | 74.10 | |
| | - Auxiliary equipment and handtools | 3.00 | |
| | Total F.O.B. Value | 1069.92 | |
| ii) | Insurance & Freight (@ 10% of FOB Value) | 106.99 | |
| iii) | C.I.F. Value | 1176.91 | |
| iv) | Import duty @ 6% on CIF value | 70.61 | |
| v) | Transportation @ 1% of CIF Value | 11.77 | |
| | Landed Cost at Site [Sub-total (3)] | | 1259.30 |

JOB NO. : DCIL-105

EXHIBIT : 74

('000 US $)

| | Items | Value | Total |
|---|---|---|---|
| 4. | Miscellaneous Fixed Assets | | |
| i) | Transformers | 23.40 | |
| ii) | Switchgears | 4.50 | |
| iii) | Central Airconditioning system | 50.80 | |
| iv) | Illumination,Fans and Room Coolers | 3.00 | |
| v) | Water Pumps and Tank | 5.00 | |
| vi) | Compressors | 6.00 | |
| vii) | Fire fighting system | 8.00 | |
| viii) | Telecommunication system | 25.00 | |
| ix) | Office Furniture and Equipment | 22.00 | |
| x) | Vehicles | 45.40 | |
| | Sub-total (4) | | 193.10 |
| 5. | Preliminary Expenses | 25.00 | 25.00 |
| 6. | Pre-operative Expenses | | |
| i) | Establishment | 963.46 | |
| ii) | Travelling Expenses | 87.00 | |
| iii) | Miscellaneous | 45.00 | |
| | | | 1095.46 |
| 7. | Technical Know-how Fees | 434.00 | 434.00 |
| 8. | Sub-total (1 thru 7) | - | 11789.86 |
| 9. | Contingency @ 5% on above | - | 589.49 |
| 10. | Sub-total (8 & 9) | - | 12379.36 |
| 11. | Interest during Construction | - | 741.49 |
| 12. | Margin Money for Working Capital | - | 283.65 |
| | TOTAL COST | - | 13404.50 |

JOB NO. : DCIL-185

EXHIBIT : 75

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

PHASING OF CAPITAL EXPENDITURE

('000 US $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1. Land and Land Development | 4860.00 | 0.00 | 972.00 | 1944.00 | 1944.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2. Building and Civil Work | 3923.00 | | | | | | | | | |
| i) Workshop Building | 2812.00 | 0.00 | 0.00 | 0.00 | 703.00 | 703.00 | 703.00 | 703.00 | 0.00 | 0.00 |
| ii) Administrative Building | 425.00 | 0.00 | 0.00 | 0.00 | 0.00 | 170.00 | 170.00 | 85.00 | 0.00 | 0.00 |
| iii) Auxiliary Buildings | 686.00 | 0.00 | 0.00 | 0.00 | 0.00 | 228.67 | 228.67 | 228.67 | 0.00 | 0.00 |
| 3. Plant and Machinery | 1259.30 | | | | | | | | | |
| i) Ordering | 377.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 377.79 | 0.00 | 0.00 | 0.00 |
| ii) Supply, delivery and installation at site | 881.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 859.47 | 22.04 |

JOB NO. : DCIL-105

EXHIBIT : 75

('000 RS $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. Miscellaneous Fixed Assets | 193.10 | | | | | | | | | |
| i) Transformers | 23.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.68 | 0.00 | 18.72 | 0.00 |
| ii) Switchgears | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.90 | 0.00 | 3.60 | 0.00 |
| iii) Central Airconditioning system | 50.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.16 | 0.00 | 40.64 | 0.00 |
| iv) Illumination,Fans and Room Coolers | 3.00 | 0.30 | 0.00 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.00 | 0.00 |
| v) Water Pumps and Tank | 5.00 | 0.00 | 0.00 | 0.00 | 2.50 | 2.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| vi) Compressors | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 4.80 | 0.00 |
| vii) Fire fighting system | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.00 | 4.00 | 0.00 |
| viii) Telecommunication system | 25.00 | 0.00 | 2.50 | 0.00 | 0.00 | 2.50 | 5.00 | 5.00 | 5.00 | 5.00 |
| ix) Office Furniture and Equipment | 22.00 | 0.00 | 1.10 | 1.10 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 8.80 |
| x) Vehicles | 45.40 | 0.00 | 9.70 | 9.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 |
| 5. Preliminary Expenses | 25.00 | 12.50 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6. Pre-operative Expenses | 1095.46 | | | | | | | | | |
| i) Establishment | 963.46 | 0.00 | 25.11 | 61.82 | 89.47 | 89.47 | 138.87 | 138.87 | 138.87 | 280.98 |
| ii) Travelling Expenses | 87.00 | 0.00 | 2.00 | 6.00 | 8.00 | 8.00 | 12.00 | 12.00 | 12.00 | 27.00 |
| iii) Miscellaneous | 45.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| 7. Technical Know-how Fees | 434.00 | 21.70 | 86.80 | 86.80 | 43.40 | 43.40 | 43.40 | 43.40 | 43.40 | 21.70 |
| 8. Sub-total (1 thru 7) | 11789.86 | 39.50 | 1116.71 | 2114.96 | 2798.11 | 1255.27 | 1707.41 | 1223.68 | 1137.70 | 396.52 |
| 9. Contingency @ 5% on above | 589.49 | 1.97 | 55.84 | 105.75 | 139.91 | 62.76 | 85.37 | 61.18 | 56.89 | 19.83 |
| 10. Sub-total (8 & 9) | 12379.37 | 41.47 | 1172.54 | 2220.71 | 2938.01 | 1318.04 | 1792.78 | 1284.86 | 1194.59 | 416.34 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 76

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

ESTIMATION OF INTEREST DURING CONSTRUCTION

('000 US $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Capital Expenditure | 41.47 | 1172.54 | 2220.71 | 2938.01 | 1318.04 | 1792.78 | 1284.86 | 1194.59 | 416.34 | 12379.36 |
| Margin Money | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 283.65 | 283.65 |
| Total | 41.47 | 1172.54 | 2220.71 | 2938.01 | 1318.04 | 1792.78 | 1284.86 | 1194.59 | 699.99 | 12661.01 |
| Equity | 20.87 | 590.22 | 1125.02 | 1500.09 | 703.87 | 951.59 | 709.01 | 671.49 | 431.08 | 6702.25 |
| Loan | 20.87 | 590.23 | 1125.02 | 1500.09 | 703.86 | 951.59 | 708.01 | 671.48 | 431.09 | 6702.25 |
| Total | 41.74 | 1180.44 | 2250.05 | 3000.18 | 1407.75 | 1903.18 | 1416.02 | 1342.97 | 862.17 | 13404.50 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 76

('000 US $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| **Interest on loan** | | | | | | | | | | |
| - @ 10% p.a. | 0.26 | 7.38 | 14.06 | 18.75 | 8.80 | 11.89 | 8.85 | 8.39 | 5.39 | 83.77 |
| | | 0.52 | 14.76 | 28.13 | 17.50 | 17.60 | 23.79 | 17.70 | 16.79 | 156.79 |
| | | | 0.52 | 14.76 | 28.13 | 17.50 | 17.60 | 23.79 | 17.70 | 140.00 |
| | | | | 0.52 | 14.76 | 28.13 | 17.50 | 17.60 | 23.79 | 122.30 |
| | | | | | 0.52 | 14.76 | 28.13 | 17.50 | 17.60 | 98.51 |
| | | | | | | 0.52 | 14.76 | 28.13 | 17.50 | 80.91 |
| | | | | | | | 0.52 | 14.76 | 28.13 | 43.41 |
| | | | | | | | | 0.52 | 14.76 | 15.28 |
| | | | | | | | | | 0.52 | 0.52 |
| Total | 0.26 | 7.90 | 29.34 | 62.16 | 89.71 | 110.40 | 131.15 | 148.39 | 162.18 | 741.49 |
| Debt/Equity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

MEANS OF FINANCING : EQUITY 6702.25
LOAN 6702.25
TOTAL 13404.50

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 77

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

## PROJECT PROFILE ON BARE WIRES

### MARGIN MONEY FOR WORKING CAPITAL

('000 US $)

| Sl. No. | Item | Period (Days) | Cost | Bank Finance Available (%) | Bank Finance Available (Amount) | Margin Money |
|---|---|---|---|---|---|---|
| 1. | Raw materials & Consumables | 90 | 10823.15 | 100% | 10823.15 | 0.00 |
| 2. | Finished Stock | 30 | 3745.40 | 100% | 3745.40 | 0.00 |
| 3. | Sundry Debtors | 30 | 4285.63 | 100% | 4285.63 | 0.00 |
| Sub-total | | | 18854.18 | | 18854.18 | 0.00 |
| 4. | Expenses | 30 | 283.65 | 0% | 0.00 | 283.65 |
| | Total | | 19137.83 | | 18854.18 | 283.65 |

JOB NO. : DCIL-105

EXHIBIT : 78

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### STATEMENT OF PRODUCTION AND SALES

(in MT)

| | | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Working Days/Year | | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Utilisation | | 70% | 75% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| UHV Conductors | | | | | | | | | | | |
| Capacity | (MT) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Annual Output | (MT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Output/Day | (MT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Opening Stock | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Production | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Stock | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sales | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HV Conductors | | | | | | | | | | | |
| Capacity | (MT) | 3700 | 3700 | 3700 | 3700 | 3700 | 3700 | 3700 | 3700 | 3700 | 3700 |
| Annual Output | (MT) | 2590.00 | 2775.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 |
| Output/Day | (MT) | 8.63 | 9.25 | 9.87 | 9.87 | 9.87 | 9.87 | 9.87 | 9.87 | 9.87 | 9.87 |

JOB NO. : DCIL-105

**EXHIBIT : 78**

(in MT)

| | | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Opening Stock | | 0.00 | 215.83 | 231.25 | 246.67 | 246.67 | 246.67 | 246.67 | 246.67 | 246.67 | 246.67 |
| Production | | 2590.00 | 2775.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 |
| Total | | 2590.00 | 2990.83 | 3191.25 | 3206.67 | 3206.67 | 3206.67 | 3206.67 | 3206.67 | 3206.67 | 3206.67 |
| Closing Stock | | 215.83 | 231.25 | 246.67 | 246.67 | 246.67 | 246.67 | 246.67 | 246.67 | 246.67 | 246.67 |
| Sales | | 2374.17 | 2759.58 | 2944.58 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 | 2960.00 |
| HV Conductors | | | | | | | | | | | |
| Capacity | (MT) | 4100 | 4100 | 4100 | 4100 | 4100 | 4100 | 4100 | 4100 | 4100 | 4100 |
| Annual Output | (MT) | 2870.00 | 3075.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 |
| Output/Day | (MT) | 9.57 | 10.25 | 10.93 | 10.93 | 10.93 | 10.93 | 10.93 | 10.93 | 10.93 | 10.93 |
| Opening Stock | | 0.00 | 239.17 | 256.25 | 273.33 | 273.33 | 273.33 | 273.33 | 273.33 | 273.33 | 273.33 |
| Production | | 2870.00 | 3075.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 |
| Total | | 2870.00 | 3314.17 | 3536.25 | 3553.33 | 3553.33 | 3553.33 | 3553.33 | 3553.33 | 3553.33 | 3553.33 |
| Closing Stock | | 239.17 | 256.25 | 273.33 | 273.33 | 273.33 | 273.33 | 273.33 | 273.33 | 273.33 | 273.33 |
| Sales | | 2630.83 | 3057.92 | 3262.92 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 | 3280.00 |
| LV Conductors | | | | | | | | | | | |
| Capacity | (MT) | 7400 | 7400 | 7400 | 7400 | 7400 | 7400 | 7400 | 7400 | 7400 | 7400 |
| Annual Output | (MT) | 5180.00 | 5550.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 |
| Output/Day | (MT) | 17.27 | 18.50 | 19.73 | 19.73 | 19.7 | 19.73 | 19.73 | 19.73 | 19.73 | 19.73 |
| Opening Stock | | 0.00 | 431.67 | 462.50 | 493.33 | 493.33 | 493.33 | 493.33 | 493.33 | 493.33 | 493.33 |
| Production | | 5180.00 | 5550.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 |
| Total | | 5180.00 | 5981.67 | 6382.50 | 6413.33 | 6413.33 | 6413.33 | 6413.33 | 6413.33 | 6413.33 | 6413.33 |
| Closing Stock | | 431.67 | 462.50 | 493.33 | 493.33 | 493.33 | 493.33 | 493.33 | 493.33 | 493.33 | 493.33 |
| Sales | | 4748.33 | 5519.17 | 5889.17 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 | 5920.00 |

JOB NO. : DCIL-105 EXHIBIT : 79

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF REVENUE

('000 US $)

| | Average Selling Price (US $/MT) | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| EHV Conductors | 7500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HV Conductors | 3700.00 | 8784.42 | 10210.46 | 10894.96 | 10952.00 | 10952.00 | 10952.00 | 10952.00 | 10952.00 | 10952.00 | 10952.00 |
| MV Conductors | 8900.00 | 23414.42 | 27215.46 | 29039.96 | 29192.00 | 29192.00 | 29192.00 | 29192.00 | 29192.00 | 29192.00 | 29192.00 |
| LV Conductors | 4200.00 | 19943.00 | 23180.50 | 24734.50 | 24864.00 | 24864.00 | 24864.00 | 24864.00 | 24864.00 | 24864.00 | 24864.00 |
| Total | | 52141.84 | 60606.42 | 64669.42 | 65008.00 | 65008.00 | 65008.00 | 65008.00 | 65008.00 | 65008.00 | 65008.00 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 80

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

COST OF PRODUCTION AND SALES

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| A. Variable Cost | | | | | | | | | | |
| Raw Materials and Consumables | 41803.72 | 44789.70 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 |
| Power | 19.41 | 20.70 | 21.96 | 21.96 | 21.96 | 21.96 | 21.96 | 21.96 | 21.96 | 21.96 |
| Water | 0.54 | 0.58 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| Sub-total | 41823.69 | 44810.97 | 47798.26 | 47798.26 | 47798.26 | 47798.26 | 47798.26 | 47798.26 | 47798.25 | 47798.26 |
| Contingency (@ 5% on above) | 2091.18 | 2240.55 | 2389.91 | 2389.91 | 2389.91 | 2389.91 | 2389.91 | 2389.91 | 2389.91 | 2389.91 |
| Total 'A' | 43914.87 | 47051.52 | 50188.17 | 50188.17 | 50188.17 | 50188.17 | 50188.17 | 50188.17 | 50188.16 | 50188.17 |
| B. Fixed Cost | | | | | | | | | | |
| i) Labour & Plant Overhead * | | | | | | | | | | |
| a) Direct labour | 552.00 | 579.60 | 607.20 | 634.80 | 662.40 | 690.00 | 717.60 | 745.20 | 772.80 | 800.40 |
| b) Indirect labour | 271.85 | 285.44 | 299.04 | 312.63 | 326.22 | 339.81 | 353.41 | 367.00 | 380.59 | 394.18 |
| c) Supervision | 771.54 | 810.12 | 848.69 | 887.27 | 925.85 | 964.43 | 1003.00 | 1041.58 | 1080.16 | 1118.73 |
| Sub-total | 1595.39 | 1675.16 | 1754.93 | 1834.70 | 1914.47 | 1994.24 | 2074.01 | 2153.78 | 2233.55 | 2313.31 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-185

EXHIBIT : 80

('000 DS $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ii) Other Factory Expenses | | | | | | | | | | |
| a) Maintenance @ 3% on Plant & Equipment | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 |
| b) Maintenance @ 1% on Building & Civil Work | 39.23 | 39.23 | 39.23 | 39.23 | 39.23 | 39.23 | 39.23 | 39.23 | 39.23 | 39.23 |
| c) Miscellaneous | 15.40 | 15.40 | 15.40 | 15.40 | 15.40 | 15.40 | 15.40 | 15.40 | 15.40 | 15.40 |
| Sub-total | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 |
| iii) Administrative & Sales Expenses | | | | | | | | | | |
| a) Salaries * | 1278.27 | 1342.18 | 1406.10 | 1470.01 | 1533.92 | 1597.84 | 1661.75 | 1725.66 | 1789.58 | 1853.49 |
| b) Overheads | 255.65 | 268.44 | 281.22 | 294.00 | 306.78 | 319.57 | 332.35 | 345.13 | 357.92 | 370.70 |
| Sub-total | 1533.92 | 1610.62 | 1687.32 | 1764.01 | 1840.71 | 1917.41 | 1994.10 | 2070.80 | 2147.49 | 2224.19 |
| Total (i+ii+iii) | 3221.72 | 3378.19 | 3534.66 | 3691.12 | 3847.59 | 4004.05 | 4160.52 | 4316.98 | 4473.45 | 4629.91 |
| Contingency (@ 5% on above) | 161.09 | 168.91 | 176.73 | 184.56 | 192.38 | 200.20 | 208.03 | 215.85 | 223.67 | 231.50 |
| Total 'B' | 3382.80 | 3547.10 | 3711.39 | 3875.68 | 4039.97 | 4204.26 | 4368.55 | 4532.82 | 4697.12 | 4861.40 |
| Total Cost of Production and Sales (A+B) | 47297.67 | 50598.62 | 53899.56 | 54063.85 | 54228.14 | 54392.43 | 54556.72 | 54720.99 | 54885.28 | 55049.57 |

* Assumed to increase at the flat rate of 5% straight line every year

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 81

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED PROFITABILITY STATEMENT

('000 US $)

| Elements | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Raw Materials and Consumables | 41803.72 | 44789.70 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 |
| Power | 19.43 | 20.70 | 21.96 | 21.96 | 21.96 | 21.96 | 21.96 | 21.96 | 21.96 | 21.96 |
| Water | 0.54 | 0.58 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| Labour & Plant Overhead | 1595.39 | 1675.16 | 1754.93 | 1834.70 | 1914.47 | 1994.24 | 2074.01 | 2153.78 | 2233.55 | 2313.31 |
| Other Factory Expenses | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 | 92.41 |
| Administrative & Sales Expenses | 1533.92 | 1610.62 | 1687.32 | 1764.01 | 1840.71 | 1917.41 | 1994.10 | 2070.80 | 2147.49 | 2224.19 |
| Sub-total | 45045.41 | 48189.16 | 51332.91 | 51489.38 | 51645.84 | 51802.31 | 51958.78 | 52115.24 | 52271.70 | 52428.16 |
| Contingency | 2252.27 | 2409.46 | 2566.65 | 2574.47 | 2582.29 | 2590.12 | 2597.94 | 2605.76 | 2613.58 | 2621.41 |
| Total | 47297.68 | 50598.62 | 53899.56 | 54063.85 | 54228.14 | 54392.43 | 54556.71 | 54721.00 | 54885.28 | 55049.57 |
| Stock Variation | -3745.40 | -264.57 | -264.58 | -6.88 | -6.89 | -6.88 | -6.89 | -6.88 | -6.88 | -6.89 |
| Cost of Production and Sales | 43552.28 | 50334.05 | 53634.98 | 54056.96 | 54221.24 | 54385.55 | 54549.82 | 54714.12 | 54878.40 | 55042.68 |
| PROJECTED REVENUE | 52141.84 | 60606.42 | 64669.42 | 65008.00 | 65008.00 | 65008.00 | 65008.00 | 65008.00 | 65008.00 | 65008.00 |
| Profit before Interest and Depreciation | 8589.57 | 10272.37 | 11034.44 | 10951.04 | 10786.76 | 10622.45 | 10458.18 | 10293.88 | 10129.60 | 9965.32 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 81

('000 RS $)

| Elements | OPERATING YEARS 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Interest | | | | | | | | | | |
| On Term Loan | | | | | | | | | | |
| - @ 12% p.a. | 670.23 | 670.23 | 670.23 | 574.48 | 478.73 | 382.99 | 287.24 | 191.49 | 95.75 | 0.00 |
| On Working Capital Loan | | | | | | | | | | |
| - @ 14% p.a. | 2639.58 | 2639.58 | 1696.88 | 1131.25 | 565.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sub-total | 3309.82 | 3309.82 | 2367.10 | 1705.73 | 1044.36 | 382.99 | 287.24 | 191.49 | 95.75 | 0.00 |
| Profit before Depreciation | 5279.75 | 6962.55 | 8667.34 | 9245.31 | 9742.40 | 10239.46 | 10170.94 | 10102.39 | 10033.85 | 9965.32 |
| Depreciation and Amortisation | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 |
| Profit before Tax | 4820.80 | 6503.60 | 8208.39 | 8786.36 | 9283.45 | 9780.51 | 9711.99 | 9643.44 | 9574.90 | 9506.37 |
| Tax | 964.16 | 1305.62 | 1651.12 | 1782.39 | 1885.74 | 1988.80 | 1978.50 | 1967.96 | 1957.22 | 1946.28 |
| Distributable Profit | 3856.65 | 5197.98 | 6557.27 | 7003.97 | 7397.71 | 7791.71 | 7733.49 | 7675.48 | 7617.68 | 7560.09 |
| Dividend | 0.00 | 670.23 | 1005.34 | 1340.45 | 1340.45 | 1340.45 | 1675.56 | 1675.56 | 1675.56 | 2010.68 |
| Retained Earnings | 3856.65 | 4527.75 | 5551.93 | 5661.52 | 6057.26 | 6451.26 | 6057.93 | 5999.92 | 5942.12 | 5549.41 |
| Add Back : Depreciation & Amortisation | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 |
| NET CASH ACCRUAL | 4315.61 | 4986.70 | 6010.88 | 6122.47 | 6516.21 | 6910.21 | 6516.88 | 6458.87 | 6401.07 | 6008.36 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-165

EXHIBIT : 02

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF FIXED ASSETS AND DEPRECIATION UNDER STRAIGHT LINE METHOD

('000 US $)

| Sl. No. | Description | Value | Technical Know-how Fees | Sub-Total | Contin-gency | Sub-Total | Interest during Construct. | Sub-Total | 50% of Pre-op Expenses | Total | Rate (%) | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Land & Land Development | 4860.00 | 0.00 | 4860.00 | 0.00 | 4860.00 | 0.00 | 4860.00 | 0.00 | 4860.00 | 0% | 0.00 |
| 2. | Building & Civil Work | 3923.00 | 316.74 | 4239.74 | 430.22 | 4669.96 | 541.14 | 5211.10 | 399.54 | 5610.64 | 4% | 224.43 |
| 3. | Plant & Mahinery | 1259.30 | 101.67 | 1360.97 | 138.10 | 1499.07 | 173.71 | 1672.78 | 128.25 | 1801.04 | 8% | 144.08 |
| 4. | Miscellaneous Fixed Assets | 193.10 | 15.59 | 208.69 | 21.17 | 229.86 | 26.65 | 256.50 | 19.67 | 276.17 | 12% | 33.14 |
| 5. | Preliminary Expenses | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 10% | 2.50 |
| 6. | Pre-operative Expenses | 1095.46 | 0.00 | 1095.46 | 0.00 | 1095.46 | 0.00 | 1095.46 | -547.46 | 548.00 | 10% | 54.80 |
| 7. | Technical Know-how Fees | 434.00 | -434.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0% | 0.00 |
| | Sub-total | 11789.86 | | 11789.86 | | 12379.35 | | 13120.85 | | 13120.85 | | 458.95 |
| 8. | Contingency | 589.49 | 0.00 | 589.49 | -589.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| | Sub-total | 12379.35 | | 12379.35 | | 12379.35 | | 13120.85 | | 13120.85 | | |
| 9. | Interest during Construction | 741.49 | 0.00 | 741.49 | 0.00 | 741.49 | -741.49 | 0.00 | 0.00 | 0.00 | | |
| | Total | 13120.85 | | 13120.85 | | 13120.85 | | 13120.85 | | 13120.85 | | |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 83

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

TAX COMPUTATION

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Profit before Depreciation | 5279.75 | 6962.55 | 8667.34 | 9245.31 | 9742.40 | 10239.46 | 10170.94 | 10102.39 | 10033.85 | 9965.32 |
| Less : Current Depreciation | 458.95 | 434.47 | 411.75 | 333.34 | 313.71 | 295.44 | 278.43 | 262.56 | 247.76 | 233.94 |
| Balance | 4820.80 | 6528.08 | 8255.59 | 8911.97 | 9428.69 | 9944.02 | 9892.51 | 9839.82 | 9786.08 | 9731.38 |
| Less : Unabsorbed Depreciation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Taxable Income | 4820.80 | 6528.08 | 8255.59 | 8911.97 | 9428.69 | 9944.02 | 9892.51 | 9839.82 | 9786.08 | 9731.38 |
| Tax 20% | 964.16 | 1305.62 | 1651.12 | 1782.39 | 1885.74 | 1988.80 | 1978.50 | 1967.96 | 1957.22 | 1946.28 |

DEVELOPMENT CONSULTANTS

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**DEPRECIATION FOR TAX**

('000 US $)

| | WDV Rate | Building & Civil Work 4% | Plant and Machinery 8% | Misc. Fixed Assets 10% | Amortisation 10% | Total |
|---|---|---|---|---|---|---|
| Value | | 5610.64 | 1801.04 | 276.17 | 573.00 | |
| Depreciation Year 1 | | 224.43 | 144.08 | 33.14 | 57.30 | 458.95 |
| Balance | | 5386.22 | 1656.96 | 243.03 | 515.70 | |
| Depreciation Year 2 | | 215.45 | 132.56 | 29.16 | 57.30 | 434.47 |
| Balance | | 5170.77 | 1524.40 | 213.87 | 458.40 | |
| Depreciation Year 3 | | 206.83 | 121.95 | 25.66 | 57.30 | 411.75 |
| Balance | | 4963.94 | 1402.45 | 188.20 | 401.10 | |
| Depreciation Year 4 | | 198.56 | 112.20 | 22.58 | 57.30 | 390.64 |
| Balance | | 4765.38 | 1290.25 | 165.62 | 343.80 | |
| Depreciation Year 5 | | 190.62 | 103.22 | 19.87 | 57.30 | 371.01 |
| Balance | | 4574.77 | 1187.03 | 145.74 | 286.50 | |
| Depreciation Year 6 | | 182.99 | 94.96 | 17.49 | 57.30 | 352.74 |
| Balance | | 4391.77 | 1092.07 | 128.25 | 229.20 | |
| Depreciation Year 7 | | 175.67 | 87.37 | 15.39 | 57.30 | 335.73 |
| Balance | | 4216.10 | 1004.71 | 112.86 | 171.90 | |
| Depreciation Year 8 | | 168.64 | 80.38 | 13.54 | 57.30 | 319.86 |
| Balance | | 4047.46 | 924.33 | 99.32 | 114.60 | |
| Depreciation Year 9 | | 161.90 | 73.95 | 11.92 | 57.30 | 305.06 |
| Balance | | 3885.56 | 850.38 | 87.40 | 57.30 | |
| Depreciation Year 10 | | 155.42 | 68.03 | 10.49 | 57.30 | 291.24 |
| Balance | | 3730.14 | 782.35 | 76.91 | 0.00 | |

WDV : Written Down Value

JOB NO. : DCIL-105

EXHIBIT : 05

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

WORKING CAPITAL REQUIREMENTS
(Excluding Cash and Bank Balances)

('000 US $)

| Items | OPERATING YEAR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. Raw materials & Consumables | 10823.15 | 11596.24 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 |
| 2. Finished Stock | 3745.40 | 4009.98 | 4274.56 | 4281.44 | 4288.33 | 4295.21 | 4302.10 | 4308.98 | 4315.86 | 4322.75 |
| 3. Sundry Debtors | 4285.63 | 4981.35 | 5315.29 | 5343.12 | 5343.12 | 5343.12 | 5343.12 | 5343.12 | 5343.12 | 5343.12 |
| TOTAL | 18854.18 | 20587.57 | 21959.17 | 21993.88 | 22000.77 | 22007.65 | 22014.54 | 22021.42 | 22028.30 | 22035.19 |
| Increase /(decrease) | 18854.18 | 1733.39 | 1371.60 | 34.69 | 6.89 | 6.88 | 6.89 | 6.88 | 6.88 | 6.89 |
| Stock Variation | 3745.40 | 264.57 | 264.58 | 6.88 | 6.89 | 6.88 | 6.89 | 6.88 | 6.88 | 6.89 |

JOB NO. : DCIL-105

EXHIBIT : 86

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED CASH FLOW STATEMENT

('000 US $)

| | Construction Period | Y 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | '0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A. SOURCES | | | | | | | | | | | |
| Increase in Share Capital | 6702.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Term Loan | 6702.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Bank Loan | 0.00 | 18854.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Profit before Tax with Interest added back | 0.00 | 8130.62 | 9813.42 | 10575.49 | 10492.09 | 10327.81 | 10163.51 | 9999.23 | 9834.93 | 9670.65 | 9506.37 |
| Depreciation | 0.00 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 | 458.95 |
| TOTAL 'A' | 13404.50 | 27443.75 | 10272.37 | 11034.44 | 10951.04 | 10786.76 | 10622.46 | 10458.18 | 10293.88 | 10129.60 | 9965.32 |
| B. APPLICATIONS | | | | | | | | | | | |
| Increase in Capital Expenditure | 12379.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase/(Decrease) in Working Capital | 0.00 | 18854.18 | 1733.39 | 1371.60 | 34.69 | 6.89 | 6.88 | 6.89 | 6.88 | 6.88 | 6.89 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-185

EXHIBIT : 86

('000 US $)

| | Construction Period | Y 1 | Y 2 | Y 3 | Y 4 | Y 5 | A 6 | A 7 | A 8 | R 9 | R 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Interest | | | | | | | | | | | |
| On Term Loan - @ 10% p.a. | | 741.49 | 670.23 | 670.23 | 670.23 | 574.48 | 478.73 | 382.99 | 287.24 | 191.49 | 95.75 | 0.00 |
| On Working Capital Loan - @ 12% p.a. | | 0.00 | 2639.58 | 2639.58 | 1696.88 | 1131.25 | 565.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total Interest | | 741.49 | 3309.81 | 3309.81 | 2367.10 | 1705.73 | 1044.36 | 382.99 | 287.24 | 191.49 | 95.75 | 0.00 |
| Tax | | 0.00 | 964.16 | 1305.62 | 1651.12 | 1782.19 | 1885.74 | 1988.80 | 1978.50 | 1967.96 | 1957.22 | 1946.29 |
| Dividend | | 0.00 | 0.00 | 670.23 | 1005.34 | 1340.45 | 1340.45 | 1340.45 | 1675.56 | 1675.56 | 1675.56 | 2010.68 |
| Repayment of Term Loan | | 0.00 | 0.00 | 0.00 | 957.46 | 957.46 | 957.46 | 957.46 | 957.46 | 957.46 | 957.49 | 0.00 |
| Repayment of Working Capital Loan | | 0.00 | 0.00 | 4713.54 | 4713.54 | 4713.54 | 4713.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL 'B' | | 13120.85 | 23128.15 | 11732.58 | 12066.17 | 10534.28 | 9948.46 | 4676.59 | 4905.66 | 4799.35 | 4692.90 | 3963.85 |
| Opening Balance | | 0.00 | 283.65 | 4599.25 | 3139.04 | 2107.30 | 2524.06 | 3362.36 | 9308.23 | 14860.76 | 20355.29 | 25791.99 |
| Surplus /(Deficit) during the Year ( A - B ) | | 283.65 | 4315.61 | -1460.22 | -1031.74 | 416.76 | 838.10 | 5945.87 | 5552.52 | 5494.53 | 5436.70 | 6001.47 |
| Closing Balance | | 283.65 | 4599.25 | 3139.04 | 2107.30 | 2524.06 | 3362.36 | 9308.23 | 14860.76 | 20355.29 | 25791.99 | 31793.46 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 87

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

## PROJECT PROFILE ON BARE WIRES

## PROJECTED BALANCE SHEET

('000 US $)

| | | Y E A R | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | Share Capital | 6702.25 | 6702.25 | 6702.25 | 6702.25 | 6702.25 | 6702.25 | 6702.25 | 6702.25 | 6702.25 | 6702.25 |
| Add: | Reserves & Surplus | 3856.65 | 8384.40 | 13936.13 | 19599.85 | 25657.11 | 32108.37 | 38166.30 | 44166.22 | 50108.34 | 55657.75 |
| | SHAREHOLDERS' FUND | 10558.90 | 15086.65 | 20638.38 | 26302.10 | 32359.36 | 38810.62 | 44868.55 | 50868.47 | 56810.59 | 62360.00 |
| Less: | Intangible Assets | 515.70 | 458.40 | 401.10 | 343.80 | 286.50 | 229.20 | 171.90 | 114.60 | 57.30 | 0.00 |
| | TANGIBLE NET WORTH | 10043.20 | 14628.25 | 20237.48 | 25958.30 | 32072.86 | 38581.42 | 44696.65 | 50753.87 | 56753.29 | 62360.00 |
| Add: | Term Loan | 6702.25 | 6702.25 | 5744.79 | 4787.33 | 3829.87 | 2872.41 | 1914.95 | 957.49 | 0.00 | 0.00 |
| | CAPITAL FUND | 16745.45 | 21330.51 | 25982.27 | 30745.63 | 35902.73 | 41453.83 | 46611.59 | 51711.36 | 56753.29 | 62360.00 |
| Less: | Net Fixed Assets | 12146.20 | 11744.55 | 11342.90 | 10941.25 | 10539.60 | 10137.95 | 9736.30 | 9334.65 | 8933.00 | 8531.35 |
| | NET CURRENT ASSETS | 4599.25 | 9585.96 | 14639.37 | 19804.38 | 25363.13 | 31315.88 | 36875.30 | 42376.71 | 47820.29 | 53828.65 |
| A. | CURRENT ASSETS | | | | | | | | | | |
| | Working Capital | 18854.18 | 20587.57 | 21959.17 | 21993.88 | 22000.77 | 22007.65 | 22014.54 | 22021.42 | 22028.30 | 22035.19 |
| | Cash & Bank Balance as per Cash Flow Statement | 4599.25 | 3139.04 | 2107.30 | 2524.06 | 3362.36 | 9308.23 | 14860.76 | 20355.29 | 25791.99 | 31793.46 |
| | TOTAL 'A' | 23453.43 | 23726.60 | 24066.47 | 24517.94 | 25363.13 | 31315.88 | 36875.30 | 42376.71 | 47820.29 | 53828.65 |
| B. | CURRENT LIABILITIES | | | | | | | | | | |
| | Bank Loan | 18854.18 | 14140.64 | 9427.10 | 4713.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | TOTAL 'B' | 18854.18 | 14140.64 | 9427.10 | 4713.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | NET CURRENT ASSETS (A-B) | 4599.25 | 9585.96 | 14639.37 | 19804.38 | 25363.13 | 31315.88 | 36875.30 | 42376.71 | 47820.29 | 53828.65 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 88

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

BREAK-EVEN ANALYSIS

('000 US $)

| Sl No. | Particulars | | Amount |
|---|---|---|---|
| 1. | Raw Materials and Consumables | | 59719.60 |
| 2. | Power | | 27.45 |
| 3. | Water | | 0.77 |
| 4. | Sub-total (1 thru 3) | | 59747.82 |
| 5. | Contingency | | 2987.39 |
| 6. | VARIABLE COSTS | | 62735.21 |
| 7. | REVENUE | | 81260.00 |
| 8. | CONTRIBUTION (7 - 6) | | 18524.79 |
| 9. | Labour & Plant Overhead* | | 1954.35 |
| 10. | Other Factory Expenses | | 92.41 |
| 11. | Administrative & Sales Expenses* | | 1879.06 |
| 12. | Sub-Total (9 thru 11) | | 3925.82 |
| 13. | Contingency | | 196 29 |
| 14. | Sub-Total (12+13) | | 4122.11 |
| 15. | Interest** | | 2538.86 |
| 16. | Depreciation | | 458.95 |
| 17. | FIXED COSTS | | 7119.92 |
| | BREAK-EVEN SALES | 17*7/8 | 31231.91 |
| | BREAK-EVEN POINT | | 38.4% |
| | CASH BREAK-EVEN SALES | | 29218.71 |
| | CASH BREAK-EVEN POINT | | 36.0% |

* Average over 10 years
** Average over 5 years

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 89

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

## INTERNAL RATE OF RETURN

('000 US $)

| Year | Outflow | Inflow | Net Inflow |
|---|---|---|---|
| 0 | -13404.50 | 0.00 | -13404.50 |
| 1 | 0.00 | 8589.57 | 8589.57 |
| 2 | 0.00 | 10272.37 | 10272.37 |
| 3 | 0.00 | 11034.44 | 11034.44 |
| 4 | 0.00 | 10951.04 | 10951.04 |
| 5 | 0.00 | 10786.76 | 10786.76 |
| 6 | 0.00 | 10622.45 | 10622.45 |
| 7 | 0.00 | 10458.18 | 10458.18 |
| 8 | 0.00 | 10293.88 | 10293.88 |
| 9 | 0.00 | 10129.60 | 10129.60 |
| 10 | 0.00 | 9965.32 | 9965.32 |

IRR 72.5%

Outflow = Project Cost
Inflow = Profit before Interest, Depreciation and Tax

# PLANT LOCATION : SYRIA

**COUNTRY : SYRIA**

The financial analysis and evaluation of the proposed project for setting up of Bare Wire Conductors plant in this country are based on the capacity utilisation, price and costs.

***Project Cost***

The estimated cost of the project of setting up a 16,000 TPA plant (equivalent to 48,000 Km per year) is around US $ 10.6 million as can be seen from Exhibit-90. The project cost includes the expenditure towards

- Land and land development
- Building and civil work
- Plant and machinery
- Miscellaneous fixed assets
- Preliminary expenses
- Pre-operative expenses
- Technical know-how fees

Preliminary expenses have been assumed on a lumpsum basis on the project cost. Pre-operative expenses have three components, viz., establishment, travelling expenses and miscellaneous expenses. Establishment costs have been computed on the basis of salaries payable and overheads to various personnel who have to be recruited at various levels, during the construction period. Travelling expenss have been taken as approximately 10% of establishment costs in the second quarter and around 12-13% from third quarter onwards up to the eighth quarter of the construction period. In the last quarter it is assumed to be 10% of the establishment costs. Miscellaneous expenses have also been taken on a lumpsum basis. Technical know-how fees have been

taken as 3.5% of the project cost excluding interest during construction and margin money for working capital.

5% cushion has been provided towards contingency. This cost also includes interest during construction and margin money for working capital.

Phasing of capital expenditure is based on implementation plan, and interest during construction has been computed based on the phasing. These two are presented in Exhibits 91 and 92 respectively.

Margin money for working capital is presented in Exhibit-93. In computing margin money it is assumed that adequate provisions have to be kept towards storage of raw materials and consumables required to be imported.

The project is assumed to be financed by Debt-Equity Ratio of 1:1.

***Production, Sales and Revenue***

Statement of production and sales of various product range and the revenue that will be generated from the sales of the products over the 10-year period are presented in Exhibits 94 and 95 respectively. Capacity utilisation is assumed at the rate of 60% in the first year, 70% in the second year and 80% from the third year onwards.

***Costs***

The annual costs of production and sales computed over 10 years are presented in Exhibit-96. In estimating these costs it is assumed that the salaries and wages will increase at the flat rate of 5% every year.

***Profitability***

Projected profitability statement is presented in Exhibit-97. The average profit before tax works out to 16.2% of average revenue.

Statement of fixed assets and depreciation under straight line method is presented in Exhibit-98. Tax computation and depreciation for tax are presented in Exhibits 99 and 100 repspectively.

Working capital requirements are shown in Exhibit-101.

Projected cash flow statement and balance sheet over 10-year period are shown in Exhibits 102 and 103 respectively.

The project breaks even at around 28.4% and shows internal rate of return of 93 2% as can be seen from Exhibits 104 and 105 respectively. In computing internal rate of return, outflow is taken as the project cost and inflow is taken as the profit before interest, depreciation and tax.

JOB NO. : DCIL-105 EXHIBIT : 90

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

**PROJECT PROFILE ON BARE WIRES**

**ESTIMATED PROJECT COST**

('000 US $)

| Items | Value | Total |
|---|---|---|
| 1. Land and Land Development (@ US$ 168 per m² for 21,600 m²) | 3628.00 | 3628.00 |
| 2. Building and Civil Work | | |
| i) Workshop Building (@ US$ 843 per m² for 2,500 m²) | 2107.00 | |
| ii) Administrative Building (@ US$ 1003 per m² for 315 m²) | 316.00 | |
| iii) Auxiliary Buildings (@ US$ 1003 per m² for 508 m²) | 509.00 | |
| Sub-total (2) | | 2932.00 |
| 3. Plant and Machinery | | |
| i) Imported | | |
| - Production equipment | 953.58 | |
| - Material handling equipment | 39.24 | |
| - Tool room and maintenance equipment | 74.10 | |
| - Auxiliary equipment and handtools | 3.00 | |
| Total F.O.B. Value | 1069.92 | |
| ii) Insurance & Freight (@ 10% of FOB Value) | 106.99 | |
| iii) C.I.F. Value | 1176.91 | |
| iv) Import duty @ 6% on CIF value | 70.61 | |
| v) Transportation @ 1% of CIF Value | 11.77 | |
| Landed Cost at Site [Sub-total (3)] | | 1259.30 |

JOB NO. : DCIL-105 EXHIBIT : 90

('000 US $)

| Items | Value | Total |
|---|---|---|
| 4. Miscellaneous Fixed Assets | | |
| i) Transformers | 23.40 | |
| ii) Switchgears | 4.50 | |
| iii) Central Airconditioning system | 50.80 | |
| iv) Illumination,Fans and Room Coolers | 3.00 | |
| v) Water Pumps and Tank | 5.00 | |
| vi) Compressors | 6.00 | |
| vii) Fire fighting system | 8.00 | |
| viii) Telecommunication system | 25.00 | |
| ix) Office Furniture and Equipment | 22.00 | |
| x) Vehicles | 45.40 | |
| Sub-total (4) | | 193.10 |
| 5. Preliminary Expenses | 25.00 | 25.00 |
| 6. Pre-operative Expenses | | |
| i) Establishment | 712.58 | |
| ii) Travelling Expenses | 87.00 | |
| iii) Miscellaneous | 45.00 | |
| | | 844.58 |
| 7. Technical Know-how Fees | 339.00 | 339.00 |
| 8. Sub-total (1 thru 7) | - | 9220.98 |
| 9. Contingency @ 5% on above | - | 461.05 |
| 10. Sub-total (8 & 9) | - | 9682.03 |
| 11. Interest during Construction | - | 683.83 |
| 12. Margin Money for Working Capital | - | 193.48 |
| TOTAL COST | - | 10559.34 |

JOB NO. : DCIL-105 EXHIBIT : 91

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PHASING OF CAPITAL EXPENDITURE

('000 US $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1. Land and Land Development | 3628.00 | 0.00 | 725.60 | 1451.20 | 1451.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2. Building and Civil Work | 2932.00 | | | | | | | | | |
| i) Workshop Building | 2107.00 | 0.00 | 0.00 | 0.00 | 526.75 | 526.75 | 526.75 | 526.75 | 0.00 | 0.00 |
| ii) Administrative Building | 316.00 | 0.00 | 0.00 | 0.00 | 0.00 | 126.40 | 126.40 | 63.20 | 0.00 | 0.00 |
| iii) Auxiliary Buildings | 509.00 | 0.00 | 0.00 | 0.00 | 0.00 | 169.67 | 169.67 | 169.67 | 0.00 | 0.00 |
| 3. Plant and Machinery | 1259.30 | | | | | | | | | |
| i) Ordering | 177.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 177.79 | 0.00 | 0.00 | 0.00 |
| ii) Supply, delivery and installation at site | 881.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 859.47 | 22.04 |

JOB NO. : DCIL-105

EXHIBIT : 91

('000 DM $)

| | Total | Construction Period in Quarters | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. Miscellaneous Fixed Assets | 193.10 | | | | | | | | | |
| i) Transformers | 23.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.68 | 0.00 | 18.72 | 0.00 |
| ii) Switchgears | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.90 | 0.00 | 3.60 | 0.00 |
| iii) Central Airconditioning system | 50.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.16 | 0.00 | 40.64 | 0.00 |
| iv) Illumination,Fans and Room Coolers | 3.00 | 0.10 | 0.00 | 0.[illegible] | 0.54 | 0.54 | 0.54 | 0.54 | 0.00 | 0.00 |
| v) Water Pumps and Tank | 5.00 | 0.00 | 0.00 | 0.00 | 2.50 | 2.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| vi) Compressors | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 4.80 | 0.00 |
| vii) Fire fighting system | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.00 | 4.00 | 0.00 |
| viii) Telecommunication system | 25.00 | 0.00 | 2.50 | 0.00 | 0.00 | 2.50 | 5.00 | 5.00 | 5.00 | 5.00 |
| ix) Office Furniture and Equipment | 22.00 | 0.00 | 1.10 | 1.10 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 8.80 |
| x) Vehicles | 45.40 | 0.00 | 9.70 | 9.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 |
| 5. Preliminary Expenses | 25.00 | 12.50 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6. Pre-operative Expenses | 844.58 | | | | | | | | | |
| i) Establishment | 712.58 | 0.00 | 19.74 | 47.23 | 62.62 | 62.62 | 90.53 | 90.53 | 90.53 | 248.75 |
| ii) Travelling Expenses | 87.00 | 0.00 | 2.00 | 6.00 | 8.00 | 8.00 | 12.00 | 12.00 | 12.00 | [illegible] |
| iii) Miscellaneous | 45.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | [illegible] |
| 7. Technical Know-how Fees | 319.00 | 16.95 | 67.80 | 67.80 | 33.90 | 33.90 | 33.90 | 33.90 | 33.90 | [illegible] |
| 8. Sub-total (1 thru 7) | 9220.98 | 14.75 | 845.94 | 1588.57 | 2092.71 | 940.08 | 1370.72 | 908.30 | 1079.84 | 359.54 |
| 9. Contingency @ 5% on above | 461.05 | 1.74 | 42.30 | 79.43 | 104.64 | 47.00 | 68.54 | 45.44 | 53.99 | 17.98 |
| 10. Sub-total (8 & 9) | 9682.03 | 36.49 | 888.24 | 1668.00 | 2197.35 | 987.09 | 1439.26 | 954.21 | 1133.86 | 377.52 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 92

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

ESTIMATION OF INTEREST DURING CONSTRUCTION

('000 US $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Capital Expenditure | 16.49 | 888.24 | 1668.00 | 2197.35 | 987.08 | 1439.26 | 954.23 | 1133.86 | 377.52 | 9682.03 |
| Margin Money | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 193.48 | 193.48 |
| Total | 16.49 | 888.24 | 1668.00 | 2197.35 | 987.08 | 1439.26 | 954.23 | 1133.86 | 571.01 | 9875.51 |
| Equity | 18.39 | 447.75 | 847.35 | 1126.82 | 534.15 | 770.01 | 537.31 | 635.92 | 361.98 | 5279.67 |
| Loan | 18.38 | 447.76 | 847.34 | 1126.83 | 534.14 | 770.02 | 537.30 | 635.92 | 361.98 | 5279.67 |
| Total | 16.77 | 895.51 | 1694.69 | 2253.65 | 1068.29 | 1540.03 | 1074.61 | 1271.84 | 723.96 | 10559.34 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 92

('000 DS $)

| | Construction Period in Quarters | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| **Interest on loan** | | | | | | | | | | |
| - @ 12% p.a. | 0.28 | 6.72 | 12.71 | 16.90 | 8.01 | 11.55 | 8.06 | 9.54 | 5.41 | 79.20 |
| | | 0.55 | 13.43 | 25.42 | 13.80 | 16.02 | 23.10 | 16.12 | 19.08 | 147.52 |
| | | | 0.55 | 13.43 | 25.42 | 13.80 | 16.02 | 23.10 | 16.12 | 128.44 |
| | | | | 0.55 | 13.43 | 25.42 | 13.80 | 16.02 | 23.10 | 112.32 |
| | | | | | 0.55 | 13.43 | 25.42 | 13.80 | 16.02 | 89.22 |
| | | | | | | 0.55 | 13.43 | 25.42 | 13.80 | 53.20 |
| | | | | | | | 0.55 | 13.43 | 25.42 | 39.40 |
| | | | | | | | | 0.55 | 13.43 | 13.98 |
| | | | | | | | | | 0.55 | 0.55 |
| Total | 0.28 | 7.27 | 26.69 | 56.30 | 81.21 | 100.77 | 120.39 | 137.98 | 152.95 | 683.83 |
| Debt/Equity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | | | | | | MEANS OF FINANCING : | | | EQUITY | 5279.67 |
| | | | | | | | | | LOAN | 5279.67 |
| | | | | | | | | | TOTAL | 10559.34 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 93

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

## PROJECT PROFILE ON BARE WIRES

### MARGIN MONEY FOR WORKING CAPITAL

('000 US $)

| Sl. No. | Item | Period (Days) | Cost | Bank Finance Available (%) | Bank Finance Available (Amount) | Margin Money |
|---|---|---|---|---|---|---|
| 1. | Raw materials & Consumables | 75 | 7730.82 | 100% | 7730.82 | 0.00 |
| 2. | Finished Stock | 30 | 3195.67 | 100% | 3195.67 | 0.00 |
| 3. | Sundry Debtors | 30 | 3686.51 | 100% | 3686.51 | 0.00 |
| Sub-total | | | 14613.00 | | 14613.00 | 0.00 |
| 4. | Expenses | 30 | 193.48 | 0% | 0.00 | 193.48 |
| | Total | | 14806.48 | | 14613.00 | 193.48 |

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### STATEMENT OF PRODUCTION AND SALES

(in MT)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Working Days/Year | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Utilisation | 60% | 70% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| UHV Conductors | | | | | | | | | | |
| Capacity (MT) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Annual Output (MT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Output/Day (MT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Opening Stock | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Production | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Stock | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sales | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HV Conductors | | | | | | | | | | |
| Capacity (MT) | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 |
| Annual Output (MT) | 1980.00 | 2310.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 |
| Output/Day (MT) | 6.60 | 7.70 | 8.80 | 8.80 | 8.80 | 8.80 | 8.80 | 8.80 | 8.80 | 8.80 |
| Opening Stock | 0.00 | 165.00 | 192.50 | 220.00 | 220.00 | 220.00 | 220.00 | 220.00 | 220.00 | 220.00 |
| Production | 1980.00 | 2310.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 |
| Total | 1980.00 | 2475.00 | 2832.50 | 2860.00 | 2860.00 | 2860.00 | 2860.00 | 2860.00 | 2860.00 | 2860.00 |

JOB NO. : DCIL-105

EXHIBIT : 94

(in MT)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Closing Stock | 165.00 | 192.50 | 220.00 | 220.00 | 220.00 | 220.00 | 220.00 | 220.00 | 220.00 | 220.00 |
| Sales | 1815.00 | 2282.50 | 2612.50 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 | 2640.00 |
| MV Conductors | | | | | | | | | | |
| Capacity (MT) | 2600 | 2600 | 2600 | 2600 | 2600 | 2600 | 2600 | 2600 | 2600 | 2600 |
| Annual Output (MT) | 1560.00 | 1820.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 |
| Output/Day (MT) | 5.20 | 6.07 | 6.93 | 6.93 | 6.93 | 6.93 | 6.93 | 6.93 | 6.93 | 6.93 |
| Opening Stock | 0.00 | 130.00 | 151.67 | 173.33 | 173.33 | 173.33 | 173.33 | 173.33 | 173.33 | 173.33 |
| Production | 1560.00 | 1820.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 |
| Total | 1560.00 | 1950.00 | 2231.67 | 2253.33 | 2253.33 | 2253.33 | 2253.33 | 2253.33 | 2253.33 | 2253.33 |
| Closing Stock | 130.00 | 151.67 | 173.33 | 173.33 | 173.33 | 173.33 | 173.33 | 173.33 | 173.33 | 173.33 |
| Sales | 1430.00 | 1798.33 | 2058.33 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 | 2080.00 |
| LV Conductors | | | | | | | | | | |
| Capacity (MT) | 11000 | 11000 | 11000 | 11000 | 11000 | 11000 | 11000 | 11000 | 11000 | 11000 |
| Annual Output (MT) | 6600.00 | 7700.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 |
| Output/Day (MT) | 22.00 | 25.67 | 29.33 | 29.33 | 29.33 | 29.33 | 29.33 | 29.33 | 29.33 | 29.33 |
| Opening Stock | 0.00 | 550.00 | 641.67 | 733.33 | 733.33 | 733.33 | 733.33 | 733.33 | 733.33 | 733.33 |
| Production | 6600.00 | 7700.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 |
| Total | 6600.00 | 8250.00 | 9441.67 | 9533.33 | 9533.33 | 9533.33 | 9533.33 | 9533.33 | 9533.33 | 9533.33 |
| Closing Stock | 550.00 | 641.67 | 733.33 | 733.33 | 733.33 | 733.33 | 733.33 | 733.33 | 733.33 | 733.33 |
| Sales | 6050.00 | 7608.33 | 8708.33 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 | 8800.00 |

JOB NO. : DCIL-185

EXHIBIT : 95

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF REVENUE

'000 US $.

| | Average Selling Price (US $/MT) | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| EHV Conductors | 7500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HV Conductors | 3700.00 | 6715.50 | 8445.25 | 9666.25 | 9768.00 | 9768.00 | 9768.00 | 9768.00 | 9768.00 | 9768.00 | 9768.00 |
| MV Conductors | 8900.00 | 12727.00 | 16005.17 | 18319.17 | 18512.00 | 18512.00 | 18512.00 | 18512.00 | 18512.00 | 18512.00 | 18512.00 |
| LV Conductors | 4200.00 | 25410.00 | 31955.00 | 36575.00 | 36960.00 | 36960.00 | 36960.00 | 36960.00 | 36960.00 | 36960.00 | 36960.00 |
| Total | | 44852.50 | 56405.42 | 64560.42 | 65240.00 | 65240.00 | 65240.00 | 65240.00 | 65240.00 | 65240.00 | 65240.00 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 96

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

COST OF PRODUCTION AND SALES

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| A. Variable Cost | | | | | | | | | | |
| Raw Materials and Consumables | 35831.76 | 41803.72 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 |
| Power | 59.16 | 68.87 | 78.17 | 78.17 | 78.17 | 78.17 | 78.17 | 78.17 | 78.17 | 78.17 |
| Water | 1.15 | 1.34 | 1.54 | 1.54 | 1.54 | 1.54 | 1.54 | 1.54 | 1.54 | 1.54 |
| Sub-total | 35892.27 | 41873.93 | 47855.59 | 47855.59 | 47855.59 | 47855.59 | 47855.59 | 47855.59 | 47855.59 | 47855.59 |
| Contingency (@ 5% on above) | 1794.61 | 2093.70 | 2392.78 | 2392.78 | 2392.78 | 2392.78 | 2392.78 | 2392.78 | 2392.78 | 2392.78 |
| Total 'A' | 37686.88 | 43967.63 | 50248.37 | 50248.37 | 50248.37 | 50248.37 | 50248.37 | 50248.37 | 50248.37 | 50248.37 |
| B. Fixed Cost | | | | | | | | | | |
| i) Labour & Plant Overhead * | | | | | | | | | | |
| a) Direct labour | 441.60 | 463.68 | 485.76 | 507.84 | 529.92 | 552.00 | 574.08 | 596.16 | 618.24 | 640.32 |
| b) Indirect labour | 282.57 | 296.70 | 310.83 | 324.96 | 339.08 | 353.21 | 367.34 | 381.47 | 395.60 | 409.73 |
| c) Supervision | 473.28 | 496.94 | 520.61 | 544.27 | 567.94 | 591.60 | 615.26 | 638.93 | 662.59 | 686.26 |
| Sub-total | 1197.45 | 1257.32 | 1317.20 | 1377.07 | 1436.94 | 1496.81 | 1556.69 | 1616.56 | 1676.43 | 1736.30 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 96

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ii) Other Factory Expenses | | | | | | | | | | |
| a) Maintenance @ 3% on Plant & Equipment | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 | 37.78 |
| b) Maintenance @ 1% on Building & Civil Work | 29.32 | 29.32 | 29.32 | 29.32 | 29.32 | 29.32 | 29.32 | 29.32 | 29.32 | 29.32 |
| c) Miscellaneous | 13.42 | 13.42 | 13.42 | 13.42 | 13.42 | 13.42 | 13.42 | 13.42 | 13.42 | 13.42 |
| Sub-total | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 |
| iii) Administrative & Sales Expenses | | | | | | | | | | |
| a) Salaries * | 727.23 | 763.59 | 799.95 | 836.31 | 872.68 | 909.04 | 945.40 | 981.76 | 1018.12 | 1054.48 |
| b) Overheads | 145.45 | 152.72 | 159.99 | 167.26 | 174.54 | 181.81 | 189.08 | 196.35 | 203.62 | 210.90 |
| Sub-total | 872.68 | 916.31 | 959.94 | 1003.58 | 1047.21 | 1090.85 | 1134.48 | 1178.11 | 1221.75 | 1265.38 |
| Total (i+ii+iii) | 2150.65 | 2254.15 | 2357.66 | 2461.16 | 2564.67 | 2668.18 | 2771.68 | 2875.19 | 2978.70 | 3082.20 |
| Contingency (@ 5% on above) | 107.53 | 112.71 | 117.88 | 123.06 | 128.23 | 133.41 | 138.58 | 143.76 | 148.93 | 154.11 |
| Total 'B' | 2258.18 | 2366.86 | 2475.54 | 2584.22 | 2692.90 | 2801.59 | 2910.28 | 3018.94 | 3127.63 | 3236.31 |
| Total Cost of Production and Sales (A+B) | 39945.06 | 46334.49 | 52723.91 | 52832.59 | 52941.27 | 53049.95 | 53158.64 | 53267.30 | 53376.00 | 53484.68 |

* Assumed to increase at the flat rate of 5% straight line every year

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 97

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED PROFITABILITY STATEMENT

('000 US $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Raw Materials and Consumables | 35831.76 | 41803.72 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 | 47775.68 |
| Power | 59.36 | 68.87 | 78.37 | 78.37 | 78.37 | 78.37 | 78.37 | 78.37 | 78.37 | 78.37 |
| Water | 1.15 | 1.34 | 1.54 | 1.54 | 1.54 | 1.54 | 1.54 | 1.54 | 1.54 | 1.54 |
| Labour & Plant Overhead | 1197.45 | 1257.32 | 1317.20 | 1377.07 | 1436.94 | 1496.81 | 1556.69 | 1616.56 | 1676.43 | 1736.30 |
| Other Factory Expenses | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 | 80.52 |
| Administrative & Sales Expenses | 872.68 | 916.31 | 959.94 | 1003.58 | 1047.21 | 1090.85 | 1134.48 | 1178.11 | 1221.75 | 1265.38 |
| Sub-total | 38042.92 | 44128.08 | 50213.24 | 50316.76 | 50420.26 | 50523.76 | 50627.27 | 50730.77 | 50834.28 | 50937.79 |
| Contingency | 1902.14 | 2206.41 | 2510.66 | 2515.84 | 2521.01 | 2526.19 | 2531.36 | 2536.54 | 2541.71 | 2546.89 |
| Total | 39945.06 | 46334.49 | 52723.91 | 52832.60 | 52941.27 | 53049.95 | 53158.63 | 53267.31 | 53376.00 | 53484.68 |
| Stock Variation | -3195.67 | -520.56 | -520.55 | -5.17 | -5.17 | -5.16 | -5.17 | -5.17 | -5.16 | -5.17 |
| Cost of Production and Sales | 36749.39 | 45813.93 | 52203.36 | 52827.43 | 52936.10 | 53044.79 | 53153.46 | 53262.15 | 53370.84 | 53479.51 |
| PROJECTED REVENUE | 44852.50 | 56405.42 | 64560.42 | 65240.00 | 65240.00 | 65240.00 | 65240.00 | 65240.00 | 65240.00 | 65240.00 |
| Profit before Interest and Depreciation | 8103.11 | 10591.49 | 12357.06 | 12412.57 | 12303.90 | 12195.21 | 12086.54 | 11977.85 | 11869.16 | 11760.49 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-185

EXHIBIT : 97

'000 Rs $

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Interest | | | | | | | | | | |
| On Term Loan - @ 12% p.a. | 633.56 | 633.56 | 633.56 | 543.05 | 452.54 | 362.03 | 271.52 | 181.02 | 90.51 | 0.00 |
| On Working Capital Loan - @ 14% p.a. | 2045.82 | 2045.82 | 1534.37 | 1022.91 | 511.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sub-total | 2679.38 | 2679.38 | 2167.93 | 1565.96 | 964.00 | 362.03 | 271.52 | 181.02 | 90.51 | 0.00 |
| Profit before Depreciation | 5423.73 | 7912.11 | 10189.13 | 10846.61 | 11339.90 | 11823.18 | 11815.02 | 11796.83 | 11778.69 | 11760.49 |
| Depreciation and Amortisation | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 |
| Profit before Tax | 5032.96 | 7521.34 | 9798.36 | 10455.84 | 10949.13 | 11442.41 | 11424.25 | 11406.06 | 11387.88 | 11369.72 |
| Tax | 1258.24 | 1885.90 | 2460.31 | 2640.63 | 2768.37 | 2895.79 | 2895.05 | 2894.04 | 2892.78 | 2891.29 |
| Distributable Profit | 3774.72 | 5635.44 | 7338.05 | 7815.21 | 8180.76 | 8546.62 | 8529.20 | 8512.0. | 8495.10 | 8478.41 |
| Dividend | 0.00 | 527.97 | 791.95 | 1055.93 | 1055.93 | 1055.93 | 1319.92 | 1319.92 | 1319.92 | 1583.90 |
| Retained Earnings | 3774.72 | 5107.47 | 6546.10 | 6759.28 | 7124.83 | 7490.69 | 7209.29 | 7192.10 | 7175.19 | 6894.51 |
| Add Back : Depreciation & Amortisation | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 |
| NET CASH ACCRUAL | 4165.49 | 5498.24 | 6936.88 | 7150.05 | 7515.60 | 7881.46 | 7600.05 | 7582.87 | 7565.96 | 7285.30 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 98

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

STATEMENT OF FIXED ASSETS AND DEPRECIATION UNDER STRAIGHT LINE METHOD

('000 US $)

| Description | Value | Technical Know-how Fees | Sub-Total | Contin-gency | Sub-Total | Interest during Construct | Sub-Total | 50% of Pre-op Expenses | Total | Rate (%) | Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Land & Land Development | 1628.00 | 0.00 | 1628.00 | 0.00 | 1628.00 | 0.00 | 1628.00 | 0.00 | 1628.00 | 0% | 0.00 |
| 2. Building & Civil Work | 2932.00 | 226.70 | 3158.70 | 308.32 | 3467.02 | 457.30 | 3924.32 | 282.60 | 4206.92 | 4% | 168.28 |
| 3. Plant & Mahinery | 1259.30 | 97.37 | 1356.68 | 132.42 | 1489.09 | 196.41 | 1685.50 | 121.38 | 1806.89 | 8% | 144.55 |
| 4. Miscellaneous Fixed Assets | 193.10 | 14.93 | 208.03 | 20.31 | 228.34 | 30.12 | 258.45 | 18.60 | 277.06 | 12% | 33.25 |
| 5. Preliminary Expenses | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 0.00 | 25.00 | 10% | 2.50 |
| 6. Pre-operative Expenses | 844.58 | 0.00 | 844.58 | 0.00 | 844.58 | 0.00 | 844.58 | -422.58 | 422.00 | 10% | 42.20 |
| 7. Technical Know-how Fees | 339.00 | -339.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0% | 0.00 |
| Sub-total | 9220.97 | | 9220.97 | | 9682.03 | | 10365.85 | | 10365.86 | | 390.77 |
| 8. Contingency | 461.05 | 0.00 | 461.05 | -461.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | ------ |
| Sub-total | 9682.03 | | 9682.03 | | 9682.03 | | 10365.85 | | 10365.86 | | |
| 9. Interest during Construction | 683.83 | 0.00 | 683.83 | 0.00 | 683.83 | -683.83 | 0.00 | 0.00 | 0.00 | | |
| Total | 10365.86 | | 10365.86 | | 10365.86 | | 10365.85 | | 10365.86 | | |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 99

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

TAX COMPUTATION

('000 DS $)

| | OPERATING YEARS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Profit before Depreciation | 5423.73 | 7912.11 | 10189.13 | 10846.61 | 11339.90 | 11833.18 | 11815.02 | 11796.83 | 11778.65 | 11760.49 |
| Less : Current Depreciation | 390.77 | 368.49 | 347.88 | 284.10 | 266.42 | 250.02 | 234.81 | 220.68 | 207.54 | 195.31 |
| Balance | 5032.95 | 7543.62 | 9841.25 | 10562.51 | 11073.48 | 11583.16 | 11580.21 | 11576.15 | 11571.12 | 11565.18 |
| Less : Unabsorbed Depreciation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Taxable Income | 5032.95 | 7543.62 | 9841.25 | 10562.51 | 11073.48 | 11583.16 | 11580.21 | 11576.15 | 11571.12 | 11565.18 |
| Tax @ 25% | 1258.24 | 1885.90 | 2460.31 | 2640.63 | 2768.37 | 2895.79 | 2895.05 | 2894.04 | 2892.78 | 2891.29 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 100

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

DEPRECIATION FOR TAX

('000 US $)

| | WDV Rate | Building & Civil Work 4% | Plant and Machinery 8% | Misc. Fixed Assets 10% | Amortisation 10% | Total |
|---|---|---|---|---|---|---|
| Value | | 4206.92 | 1806.89 | 277.06 | 447.00 | |
| Depreciation Year 1 | | 168.28 | 144.55 | 33.25 | 44.70 | 390.77 |
| Balance | | 4038.65 | 1662.34 | 243.81 | 402.30 | |
| Depreciation Year 2 | | 161.55 | 132.99 | 29.26 | 44.70 | 368.49 |
| Balance | | 3877.10 | 1529.35 | 214.55 | 357.60 | |
| Depreciation Year 3 | | 155.08 | 122.35 | 25.75 | 44.70 | 347.88 |
| Balance | | 3722.02 | 1407.01 | 188.81 | 312.90 | |
| Depreciation Year 4 | | 148.88 | 112.56 | 22.66 | 44.70 | 328.80 |
| Balance | | 3573.14 | 1294.45 | 166.15 | 268.20 | |
| Depreciation Year 5 | | 142.93 | 103.56 | 19.94 | 44.70 | 311.13 |
| Balance | | 3430.21 | 1190.89 | 146.21 | 223.50 | |
| Depreciation Year 6 | | 137.21 | 95.27 | 17.55 | 44.70 | 294.72 |
| Balance | | 3293.00 | 1095.62 | 128.67 | 178.80 | |
| Depreciation Year 7 | | 131.72 | 87.65 | 15.44 | 44.70 | 279.51 |
| Balance | | 3161.28 | 1007.97 | 113.23 | 134.10 | |
| Depreciation Year 8 | | 126.45 | 80.64 | 13.59 | 44.70 | 265.38 |
| Balance | | 3034.83 | 927.33 | 99.64 | 89.40 | |
| Depreciation Year 9 | | 121.39 | 74.19 | 11.96 | 44.70 | 252.24 |
| Balance | | 2913.44 | 853.15 | 87.68 | 44.70 | |
| Depreciation Year 10 | | 116.54 | 68.25 | 10.52 | 44.70 | 240.01 |
| Balance | | 2796.90 | 784.89 | 77.16 | 0.00 | |

WDV : Written Down Value

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 101

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### WORKING CAPITAL REQUIREMENTS
(Excluding Cash and Bank Balances)

('000 US $)

| Items | OPERATING YEAR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. Raw materials & Consumables | 7730.82 | 10823.15 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 | 12369.32 |
| 2. Finished Stock | 3195.67 | 3716.23 | 4236.78 | 4241.95 | 4247.12 | 4252.28 | 4257.45 | 4262.62 | 4267.78 | 4272.95 |
| 3. Sundry Debtors | 3686.51 | 4636.06 | 5306.34 | 5362.19 | 5362.19 | 5362.19 | 5362.19 | 5362.19 | 5362.19 | 5362.19 |
| TOTAL | 14613.00 | 19175.44 | 21912.44 | 21973.46 | 21978.63 | 21983.79 | 21988.96 | 21994.13 | 21999.29 | 22004.46 |
| Increase /(decrease) | 14613.00 | 4562.44 | 2737.00 | 61.02 | 5.17 | 5.16 | 5.17 | 5.17 | 5.16 | 5.17 |
| Stock Variation | 3195.67 | 520.56 | 520.55 | 5.17 | 5.17 | 5.16 | 5.17 | 5.17 | 5.16 | 5.17 |

JOB NO. : DCIL-105

EXHIBIT : 102

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANISATION

PROJECT PROFILE ON BARE WIRES

PROJECTED CASH FLOW STATEMENT

('000 US $)

| | Construction Period | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A. SOURCES | | | | | | | | | | | |
| Increase in Share Capital | 5279.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Term Loan | 5279.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase in Bank Loan | 0.00 | 14613.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Profit before Tax with Interest added back | 0.00 | 7712.34 | 10200.72 | 11966.29 | 12021.80 | 11913.13 | 11804.44 | 11695.77 | 11587.08 | 11478.39 | 11369.72 |
| Depreciation | 0.00 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 | 390.77 |
| TOTAL 'A' | 10559.34 | 22716.11 | 10591.49 | 12357.06 | 12412.57 | 12303.90 | 12195.21 | 12086.54 | 11977.85 | 11869.16 | 11760.49 |
| B. APPLICATIONS | | | | | | | | | | | |
| Increase in Capital Expenditure | 9682.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Increase/(Decrease) in Working Capital | 0.00 | 14613.00 | 4562.44 | 2737.00 | 61.02 | 5.17 | 5.16 | 5.17 | 5.17 | 5.16 | 5.17 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 102

('000 RS $)

| | Construction Period | Y 1 | 2 | 3 | R 4 | 5 | A 6 | 7 | R 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Interest | | | | | | | | | | | |
| On Term Loan - @ 12% p.a. | 683.83 | 633.56 | 633.56 | 633.56 | 543.05 | 452.54 | 162.03 | 271.52 | 181.02 | 90.51 | 0.00 |
| On Working Capital Loan - @ 14% p.a. | 0.00 | 2045.82 | 2045.82 | 1534.37 | 1022.91 | 511.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total Interest | 683.83 | 2679.38 | 2679.38 | 2167.93 | 1565.96 | 964.00 | 162.03 | 271.52 | 181.02 | 90.51 | 0.00 |
| Tax | 0.00 | 1258.24 | 1885.90 | 2460.31 | 2640.61 | 2768.37 | 2895.79 | 2895.05 | 2894.04 | 2892.78 | 2891.29 |
| Dividend | 0.00 | 0.00 | 527.97 | 791.95 | 1055.93 | 1055.93 | 1055.93 | 1319.92 | 1319.92 | 1319.92 | 1583.90 |
| Repayment of Term Loan | 0.00 | 0.00 | 0.00 | 754.24 | 754.24 | 754.24 | 754.24 | 754.24 | 754.24 | 754.23 | 0.00 |
| Repayment of Working Capital Loan | 0.00 | 0.00 | 3653.25 | 3653.25 | 3653.25 | 3653.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL 'B' | 10365.86 | 18550.61 | 13308.94 | 12564.68 | 9731.03 | 9200.96 | 5073.14 | 5245.90 | 5154.39 | 5062.60 | 4480.36 |
| Opening Balance | 0.00 | 193.48 | 4358.98 | 1641.53 | 1433.90 | 4115.44 | 7218.17 | 14340.43 | 21181.07 | 28004.53 | 34811.09 |
| Surplus /(Deficit) during the Year ( A - B ) | 193.48 | 4165.50 | -2717.46 | -207.63 | 2681.54 | 3102.94 | 7122.06 | 6840.64 | 6823.46 | 6806.56 | 7280.13 |
| Closing Balance | 193.48 | 4358.98 | 1641.53 | 1433.90 | 4115.44 | 7218.17 | 14340.43 | 21181.07 | 28004.53 | 34811.09 | 42091.22 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 103

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

## PROJECTED BALANCE SHEET

('000 US $)

| | | Y | | | R | | A | | R | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | Share Capital | 5279.67 | 5279.67 | 5279.67 | 5279.67 | 5279.67 | 5279.67 | 5279.67 | 5279.67 | 5279.67 | 5279.67 |
| Add: | Reserves & Surplus | 3774.72 | 8882.19 | 15428.29 | 22187.57 | 29312.40 | 16803.08 | 44012.16 | 51204.46 | 58379.64 | 65274.17 |
| | SHAREHOLDERS' FUND | 9054.40 | 14161.87 | 20707.96 | 27467.23 | 34592.06 | 42082.75 | 49292.03 | 56484.13 | 63659.31 | 70553.84 |
| Less: | Intangible Assets | 402.30 | 357.60 | 312.90 | 268.20 | 223.50 | 178.80 | 134.10 | 89.40 | 44.70 | 0.00 |
| | TANGIBLE NET WORTH | 8652.10 | 13804.26 | 20395.06 | 27199.03 | 34368.56 | 41903.95 | 49157.93 | 56394.73 | 63614.61 | 70553.84 |
| Add: | Term Loan | 5279.67 | 5279.67 | 4525.43 | 3771.20 | 3016.95 | 2262.71 | 1508.47 | 754.23 | 0.00 | 0.00 |
| | CAPITAL FUND | 13931.76 | 19083.93 | 24920.49 | 30970.23 | 37385.52 | 44166.66 | 50666.40 | 57148.96 | 63614.61 | 70553.84 |
| Less: | Net Fixed Assets | 9572.79 | 9226.72 | 8880.65 | 8534.58 | 8188.51 | 7842.44 | 7496.37 | 7150.30 | 6804.23 | 6458.16 |
| | NET CURRENT ASSETS | 4358.98 | 9857.21 | 16039.84 | 22435.65 | 29197.00 | 36324.22 | 43170.03 | 49998.66 | 56810.38 | 64095.68 |
| A. | CURRENT ASSETS | | | | | | | | | | |
| | Working Capital | 14613.00 | 19175.44 | 21912.44 | 21973.46 | 21978.61 | 21983.70 | 21988.96 | 21994.17 | 21999.29 | 22004.66 |
| | Cash & Bank Balance as per Cash Flow Statement | 4358.98 | 1641.53 | 1433.90 | 4115.44 | 7218.37 | 14340.43 | 21181.07 | 28004.53 | 34811.09 | 42091.22 |
| | TOTAL 'A' | 18971.98 | 20816.96 | 23346.34 | 26088.90 | 29197.00 | 36324.22 | 43170.03 | 49998.66 | 56810.38 | 64095.68 |
| B. | CURRENT LIABILITIES | | | | | | | | | | |
| | Bank Loan | 14613.00 | 10959.75 | 7306.50 | 3653.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | TOTAL 'B' | 14613.00 | 10959.75 | 7306.50 | 3653.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | NET CURRENT ASSETS (A-B) | 4358.98 | 9857.21 | 16039.84 | 22435.65 | 29197.00 | 36324.22 | 43170.03 | 49998.66 | 56810.38 | 64095.68 |

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105 EXHIBIT : 104

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

PROJECT PROFILE ON BARE WIRES

BREAK-EVEN ANALYSIS

('000 US $)

| Sl. No. | Particulars | | Amount |
|---|---|---|---|
| 1. | Raw Materials and Consumables | | 59719.60 |
| 2. | Power | | 97.96 |
| 3. | Water | | 1.92 |
| 4. | Sub-total (1 thru 3) | | 59819.48 |
| 5. | Contingency | | 2990.97 |
| 6. | VARIABLE COSTS | | 62810.45 |
| 7. | REVENUE | | 81550.00 |
| 8. | CONTRIBUTION (7 - 6) | | 18739.55 |
| 9. | Labour & Plant Overhead* | | 1466.88 |
| 10. | Other Factory Expenses | | 80.52 |
| 11. | Administrative & Sales Expenses* | | 1069.03 |
| 12. | Sub-Total (9 thru 11) | | 2616.43 |
| 13. | Contingency | | 130.82 |
| 14. | Sub-Total (12+13) | | 2747.25 |
| 15. | Interest** | | 2192.35 |
| 16. | Depreciation | | 390.77 |
| 17. | FIXED COSTS | | 5330.37 |
| | BREAK-EVEN SALES | 17*7/8 | 23196.46 |
| | BREAK-EVEN POINT | | 28.4% |
| | CASH BREAK-EVEN SALES | | 21495.90 |
| | CASH BREAK-EVEN POINT | | 26.4% |

* Average over 10 years
** Average over 5 years

DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 105

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**
**AND**
**ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION**

## PROJECT PROFILE ON BARE WIRES

### INTERNAL RATE OF RETURN

('000 US $)

| Year | Outflow | Inflow | Net Inflow |
|---|---|---|---|
| 0 | -10559.34 | 0.00 | -10559.34 |
| 1 | 0.00 | 8103.11 | 8103.11 |
| 2 | 0.00 | 10591.49 | 10591.49 |
| 3 | 0.00 | 12357.06 | 12357.06 |
| 4 | 0.00 | 12412.57 | 12412.57 |
| 5 | 0.00 | 12303.90 | 12303.90 |
| 6 | 0.00 | 12195.21 | 12195.21 |
| 7 | 0.00 | 12086.54 | 12086.54 |
| 8 | 0.00 | 11977.85 | 11977.85 |
| 9 | 0.00 | 11869.16 | 11869.16 |
| 10 | 0.00 | 11760.49 | 11760.49 |

IRR 93.2%

Outflow = Project Cost
Inflow = Profit before Interest, Depreciation and Tax

# SECTION - 13
# PROJECT IMPLEMENTATION PLAN

## PROJECT IMPLEMENTATION PLAN

Five Bare Wire Conductor manufacturing plants will be set up in the designated region. The implementation schedule of the key activities involved in setting up these plants is presented in Exhibit-106.

The programme covers a time span of 27 months starting from the preparation and finalisation of Detailed Project Report (DPR) and ending on the commencement of commercial production. It allows adequate time for procurement and erection of the equipment. Erection of heavier equipment will become easier if procurement and installation of EOT crane is speeded up. The total time span of 6 to 9 months for delivery of equipment at site have to be strictly adhered to, as this will involve international competitive bidding. Any delay in this stage will adversely affect the commissioning of the plant in time.

Recruitment of personnel has been shown in various key points during the implementation stage. Experienced personnel will be recruited within the first four quarters for senior levels.

Though not included in the key activities, it is important that the client applies for and obtains the necessary funds from the concerned financial institution well in time.

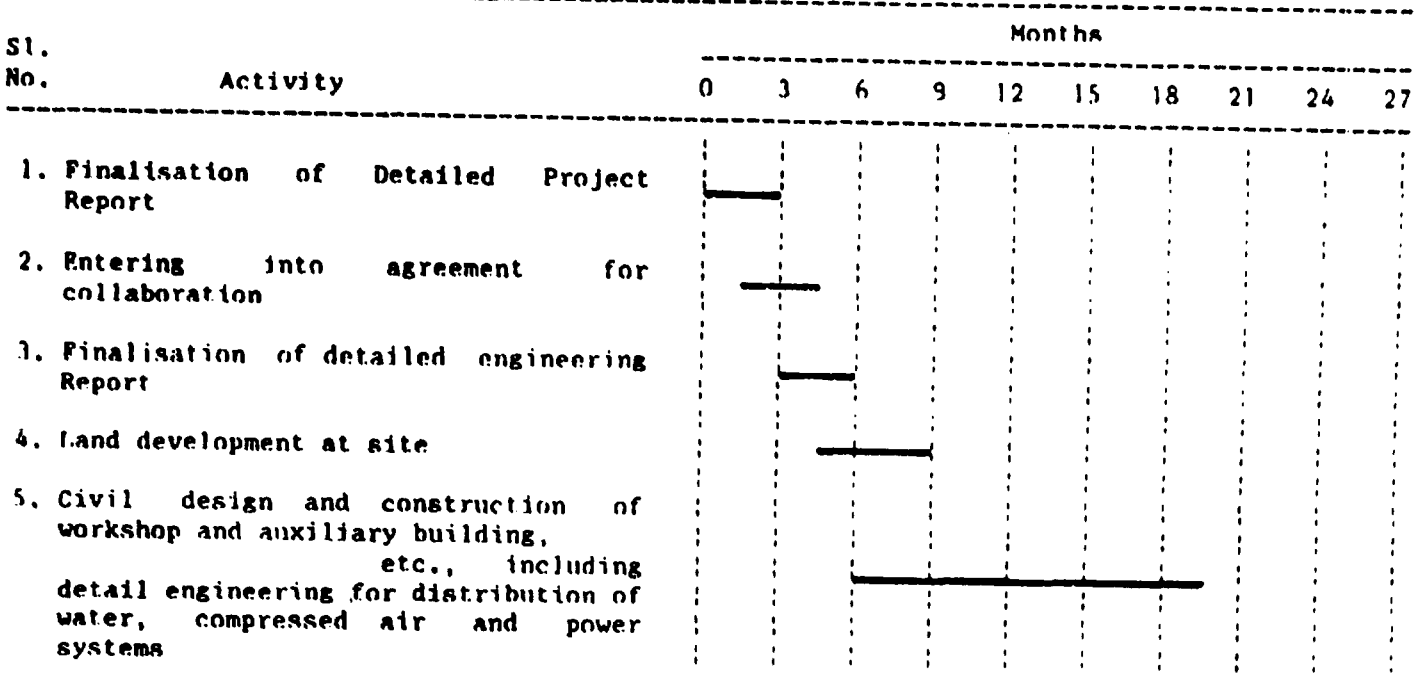
JOB NO. : DCIL-105

EXHIBIT : 106

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
AND
ARAB INDUSTRIAL DEVELOPMENT AND MINING ORGANIZATION

## PROJECT PROFILE ON BARE WIRES

### PROJECT IMPLEMENTATION SCHEDULE




DEVELOPMENT CONSULTANTS

JOB NO. : DCIL-105

EXHIBIT : 106