



KELTRON COMPONENT COMPLEX LTD

**VISION 2030
MASTER PLAN**

Submitted To: Sri. P.Rajeev,
Hon. Minister for Industries,
Govt. of Kerala

Submitted By: K.G.Krishnakumar
Managing Director

Date : July 2021

Revision 1-
Modification as
per Expert Review

KELTRON COMPONENT COMPLEX LTD.

Keltron Nagar, Kalliasseri P.O., Kannur – 670562, Kerala, India.

Tel: 0497-2780739 (Direct), (0497) 2780831-834 (4 lines)

Fax: 0497-2781055., Email: info@keltroncomp.org, Web: www.keltroncomp.org

Executive Summary

Keltron Component Complex Ltd (KCCL) is a leading manufacturer of passive electronic components and a PSU under Govt. of Kerala, and has been in operation since 1974. Since then, KCCL has grown, and now is the biggest manufacturer of Aluminium Electrolytic Capacitors in India. The company is now manufacturing Aluminium Electrolytic Capacitors, Metallised Poly Propylene Capacitors, Resistors and Crystals. The Company situated in Kalliasseri, Kannur district located in the northern part of Kerala. The Company is currently providing employment to around 600 personnel directly and is also promoting ancillary industries in the district for the supply of production consumables and packing materials. The Company's contribution to the exchequer by way of GST has been increasing every year as a result of the increased turnover achieved.

During 2009-10, three other companies viz. Keltron Crystals Ltd, Keltron Resistors Ltd and Keltron Magnetics Ltd were merged into KCCL. Main product lines include Capacitors, Resistors and Crystals. Headquartered at Kannur in Kerala with over 8 marketing offices spread throughout India in all major cities. The company is a listed company (now in dissemination board) with over 1400 public shares. The factory has a built-up area of more than 11000 sq. mtrs in a 14+ acres of land, and a skilled workforce of more than 600 persons. The factory has more than 300 automatic and semi-automatic machines.

Performance of the company during the last 4 years is detailed below.

(Rs. In Lakhs)

	2017-18	2018-19	2019-20	2020-21 (Prov)
Turnover	6348.4	6844.8	7018.06	7145.65
Production	5609.4	6352.1	6415.24	5706.41
Profit	52.05	191.68	279.25	120

As it can be seen, the company is consistently making profit and the Turnover was continuously improving during the last 4 years, inspite of COVID situation and tough competition from China etc. Keltron-Kannur is one among the few PSU's, who could consistantly stand in the market in terms of quality and service. All the new products such as MPP Capacitors, introduced recently through investments and expansion of the production plant was successful, and has already captured the market.

This document presents a master plan for the development of the company by the year 2030. The document details short-term (2021-23), mid-term (2022-25) and the long-term (2025-30) plans. As per the plan, the estimated investment over the period of 9 years is Rs.102 Crores plus, resulting in an employment generation of 230. On implementation of this plan, the turnover of the company is expected to reach Rs.400 Crores with a net profit of Rs.30 Crores by the year 2030. Government of India is also supporting the expansion plans by approving KCCL's investments under the PLI incentive scheme. By the year 2030, Keltron Component Complex Ltd. will become the biggest electronics components manufacturer in India and a leading player in the world market.

Abbreviations

AM	Assistant Manager
BEL	Bharath Electronics Limited
BOPP	Biaxially Oriented Polypropylene
CACT	Component Approval Centre Telecommunications
CAGR	Compound Annual Growth Rate
C-DOT	Centre for Development of Telematics
CEP	Capacity Enhancement Project
DGM	Deputy General Manager
DGQA	Directorate General of Quality Assurance
DM	Deputy Manager
DPP	Defence Procurement Procedure
DSIR	Department of Scientific and Industrial Research
EDP	Electronic Data Processing
ELCINA	Electronic Component Industries Association
ERP	Enterprise Resource Planning
ESDM	Electronics System Design & Manufacturing
FG	Finished Goods
GIC	General Insurance Corporation of India
GM	General Manager
GST	Goods and Service Tax
HDC	Heavy Duty Cylindrical
ICICI	Industrial Credit and Investment corporation of India
IDC	Industrial Duty Cylindrical
IDS	Industrial Duty Square type
IFCI	Industrial Finance Corporation of India
ITI	Indian Telephone Industries
KCCL	Keltron Component Complex Ltd.
KPP ER&DC	KPP Nambiar Electronics Research & Development Centre
KSEDC	Kerala State Electronic Development Corporation Ltd.
KVAR	Kilo Volt Ampere Reactive (a type of Capacitor)
LCSO	Electronic Components Standardisation Organisation
LDC	Light Duty Cylindrical
LDS	Light Duty Square type

LIC	Life Insurance Corporation
MD	Managing Director
MIS	Management Information Systems
MPP	Metallised Poly Propylene
MSME	Ministry of Micro, Small and Medium enterprises
OEM	Original Equipment Manufacturer
PE	Plant Engineering
PC	Production Centre
PSU	Public Sector undertakings in India
QA	Quality Assurance
RM	Raw Material
R&D	Research & Development
SHS	Super Heavy-Duty Square
SIDCO	Small Industries Development Corporation
TOD	Turn over Discount
UL	Underwriters Laboratories

Contents

1.Introduction.....	10
1.1. Financial performance.....	13
1.2. Major Departments & Products.....	15
1.2.1. Production Centre-1(PC-1).....	15
1.2.1.1. PC-1 Facilities.....	15
1.2.1.2. PC-1 Products.....	16
1.2.2. Production Centre-2 (PC-2).....	16
1.2.2.1. PC-2 Facilities.....	16
1.2.2.2. PC-2 Products.....	16
1.2.3. KVAR Capacitor Production Plant.....	16
1.2.3.1. KVAR Plant Facilities.....	16
1.2.3.2. KVAR Plant Products.....	16
1.2.4. Resistor Plant.....	17
1.2.4.1. Resistor Plant Facilities.....	17
1.2.4.2. Resistor Plant Products.....	17
1.2.5. Piezo Electric Quartz Crystal Plant.....	17
1.2.5.1. Crystal Plant facilities.....	17
1.2.5.2. Crystal Plant Products.....	17
1.2.6. Other Supporting Departments/functions.....	17
1.3. Factory Capabilities.....	18
1.3.1. Forming plant.....	18
1.3.2. Electrolyte production.....	18
1.3.3. Slitting process.....	18
1.3.4. Lead Tab production facilities.....	19
1.3.5. Lead Tab washing facilities.....	19
1.3.6. Printing facilities.....	19

1.3.7. Lead tab stitching/cold welding, rolling, impregnating, casing, sealing and sleeving facilities.....	19
1.3.8. Capacitor Ageing, Testing and Sorting section.....	20
1.3.9. Quality Assurance – Incoming Inspection Lab.....	20
1.3.10. Quality Assurance – Finished Production Inspection section.....	20
1.3.11. Metalized Polypropylene Capacitor manufacturing facilities.....	20
2. Capacity & Manufacturing Process of the Products.....	21
2.1. Electrolytic Capacitors & MPP Rectangular Capacitors.....	21
2.2. Process Flow Sheet.....	21
2.2.1. Electrolytic Capacitors.....	21
2.2.2. MPP Capacitors.....	21
3. Market Analysis.....	23
3.1. Marketing Strategy, Marketing Arrangements, Tie-ups.....	23
3.2. Main Competitors.....	24
3.3. Main Customers.....	25
3.3.1. OEMs.....	25
3.3.2. Dealers.....	25
4. Current Challenges.....	26
4.1. Duplicate Products.....	26
4.2. Production Automation.....	26
4.3. Improving Utilization.....	26
4.4. Waste Management.....	26
4.5. Rejection.....	27
4.6. Inventory Control.....	27
4.7. Retaining Customers.....	27
4.8. Retaining Dealers.....	27
4.9. CEP Projects.....	27
5. SWOT Analysis.....	28
5.1. Strengths.....	28
5.1.1. Good Brand Name.....	28
5.1.2. Well Established Factory.....	28
5.1.3. Well Established Dealer Network.....	28

5.1.4. Techinal knowhow.....	28
5.1.5. Dedicated R&D.....	28
5.1.6. Strategic Location.....	28
5.1.7. Skilled Human Resource.....	29
5.1.8. Market Leadership.....	29
5.2. Weaknesses.....	29
5.2.1. Less Raw Material Availability.....	29
5.2.2. Limited RM Vendors in India.....	29
5.2.3. Competitive Pricing.....	29
5.2.4. Cost of Raw Materials Imports.....	29
5.2.5. Old Machinery & Infrastructure.....	29
5.2.6. Less Automation.....	29
5.2.7. Less Succession Planning.....	30
5.3. Opportunities.....	30
5.3.1. Expanding Market.....	30
5.3.2. Government Promotion.....	30
5.3.3. Growth of ESDM Sector.....	30
5.3.4. Growth Export opportunities.....	30
5.3.5. Manpower Availability.....	30
5.3.6. Good Environment Conditions.....	30
5.3.7. Good Company Image.....	31
5.3.8. Good PSU Image.....	31
5.4. Threats.....	31
5.4.1. Foreign Competition.....	31
5.4.2. Cheap Products from Abroad.....	31
5.4.3. Increasing Producers.....	31
5.4.4. Foreign Exchange Variations.....	31
5.4.5. Less Ancillary Industries.....	31
5.4.6. Less Dynamic Investments.....	31
5.4.7. Govt. Policy changes in Taxes, Duties etc.....	32
5.4.8. Technology diversion.....	32

6. Short Term Plan (2021-2023).....	33
6.1. Supercapacitor Production Facility Phase-1.....	33
6.2. Capacity Enhancement Projects.....	33
6.2.1. Rectangular Capacitor Production Machineries.....	33
6.2.2. Automatic Stitcher cum winding Machine.....	33
6.2.3. Automatic Ageing & Testing Machine.....	33
6.2.4. Tool Room Modernization.....	33
6.2.5. R&D facility Expansion.....	33
6.2.6. Waste management facility.....	34
7. Medium Term Plan (2022-25).....	35
7.1. Large Scale and Commercial Production of Supercapacitors.....	35
7.2. Setting up Li.ion phosphate Battery production facility.....	35
7.3. Capacity Enhancement Projects.....	35
7.3.1. MPP Film Metallization Plant.....	35
7.3.2. Modernization of Resistors Plant.....	35
7.3.3. Modernization of Piezoelectric Crystal Plant.....	36
8. Long Term Plan (2025-30).....	37
8.1. Supercapacitor Production Facility Phase-2.....	37
8.2. Establishment of SMD Electronic Components Production Facility.....	37
8.3. Establishment of Active Electronic Components Production Facility.....	37
8.4. Capacity Enhancement Projects.....	37
8.4.1. Expansion & Modernization of Capacitor Production Facility.....	37
9. Road Map (2021-2030).....	38
10. Summary : Vision 2030.....	40
10.1 Revision 1 - Modification as per expert review	41

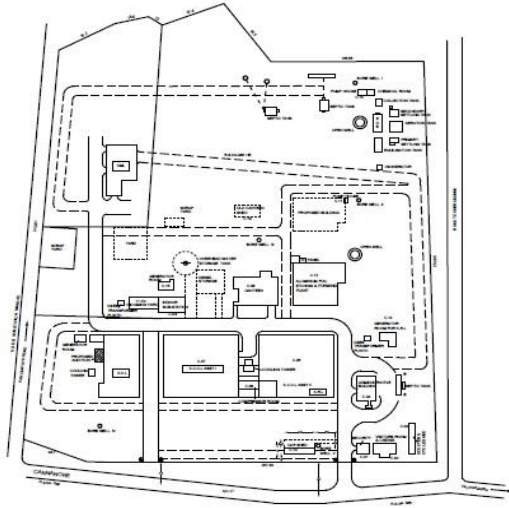
Chapter 1

Introduction

KELTRON COMPONENT COMPLEX LTD (KCCL) was established on 8th October 1974 in technical collaboration with M/s. Sprague Electromag, Belgium for manufacture of Aluminium Electrolytic Capacitors. KCCL is a Govt.of Kerala Public Sector Undertaking. The Company functions under the Board of Directors. KCCL is a listed Company (now in dissemination board) with over 1400 public Shareholders which includes financial institutions like LIC, GIC, IFCI, ICICI,UIC and SIDCO. KCCL went into commercial production on 19th August 1978. Since then KCCL has grown and now is the biggest manufacturer of Aluminium Electrolytic Capacitors in India. It also produces other passive electronic components including Resistors and Crystals. Presently the total installed annual capacity is 380 Million Pcs, all combined.

During the year 2009-10, the three sister concerns of KELTRON, viz. Keltron Crystals Ltd, Keltron Resistors Ltd and Keltron Magnetics Ltd were merged into KCCL and is working as a single entity manufacturing Aluminium Electrolytic Capacitors, Metallized Poly Propylene Capacitors, Carbon & Metal Film Resistors and Piezo-electric Quartz Crystals.

KCCL has a good manufacturing facility with more than 300 automatic and semi-automatic machines imported from Japan,Taiwan,Italy etc. We also have in-house developed Forming Plant for Low Voltage and High Voltage Foils. It has a builtup area of more than 10000 sq. mtrs for machines alone in 14+ acres of land, and a skilled workforce of more than 600 persons having an average 10+ years experience.



The plant is located on the side of NH 17 linking Kannur- Kasaragod, and is also in close proximity with Airports (Kannur, Calicut, Mangalore), Seaports (Calicut, Mangalore) and Railway station (Kannur). Thus the Company is strategically located for ease of transportation of raw materials and finished products. It has an optimized production plant layout.

KCCL's R&D is a DSIR (Dept. of Scientific & Industrial Research, Ministry of Science & Technology, Govt. of India) recognized R&D Lab with many innovative and recognized achievements. The R&D won "ELCINA Award 1993 for excellence in Research & Development" for the work done in the field of forming technology.

The R&D is now named "KPP ER&DC" (KPP Nambiar Electronics Research and Development Centre) in memory of Keltron's founder Chairman Padma Bhushan Dr.KPP Nambiar. The new R&D building (KPP Nambiar Smarakam) was inaugurated by Hon.Chief Minister on 23-2-2021.



“KPP ER&DC” has facilities for applied research for electronics components development and design. The R&D labs are named “Material Development Centre”, “Electronics Test & Calibration Lab” and “Engineering & Design Centre”.

KCCL is ISO 9001 certified (now ISO 9001:2015). The products are approved by DGQA, Ministry of Defence, Govt.of India with DPP Grade 1. It also has product approvals from C-DOT, CACT, LCSO, Defence Dept, UL etc. It has many awards and recognitions in hand including “National Productivity Award 1988-89” under large-scale electronic components units from National Productivity Council, Govt. of India.

KELTRON Capacitors are widely accepted by major equipment manufacturers and Consumer Electronic Industries including BEL, ITI, Crompton Greaves, V-Guard, Tata Motors, L&T, EXIDE, Onida, Railways, Water Authority, Electricity Board etc.



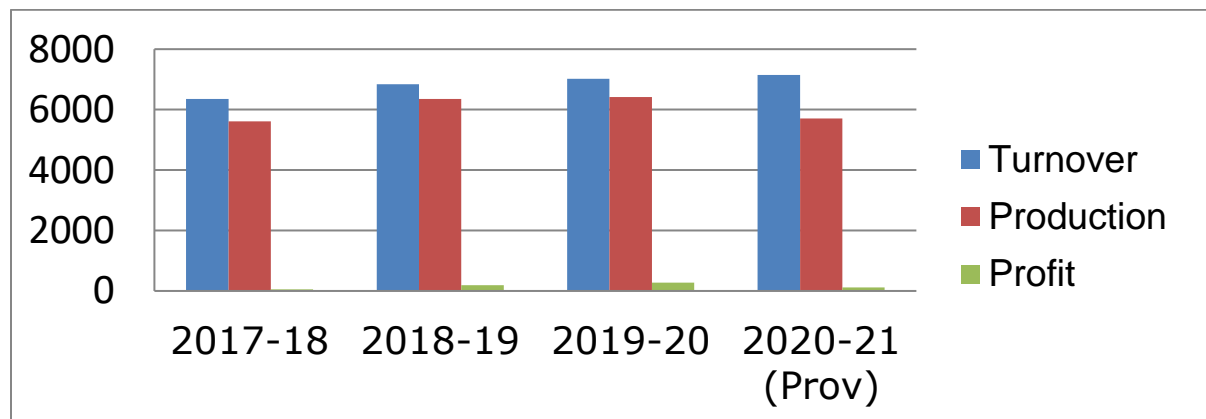
A recent Capacity Enhancement project commissioned was the new MPP Capacitor Production Plant. The project at a cost of Rs.2 Crores was commissioned on 23-2-2021 by Hon. Chief Minister. By this project, the Production capacity of MPP Capacitors increased by 8 million pieces per annum with an estimated increase in sale by Rs.7 Crores

1.1 FINANCIAL PERFORMANCE

Performance of the company during the last 4 years is detailed below.

(Rs. In Lakhs)

	2017-18	2018-19	2019-20	2020-21 (Prov)
Turnover	6348.4	6844.8	7018.06	7145.65
Production	5609.4	6352.1	6415.24	5706.41
Profit	52.05	191.68	279.25	120



As it can be seen, the company is consistently making profit and the Sales was continuously improving during the last 4 years, inspite of COVID situation and tough competition from China etc. Keltron-Kannur is one among the few PSU's, who could consistantly stand in the market in terms of quality and service. All the new products such as MPP Capacitors, introduced recently through investments and expansion of the production plant was successful, and has already captured the market.

Summarised financial details as on 31.3.2021 are given below (Rs. In Lakhs):

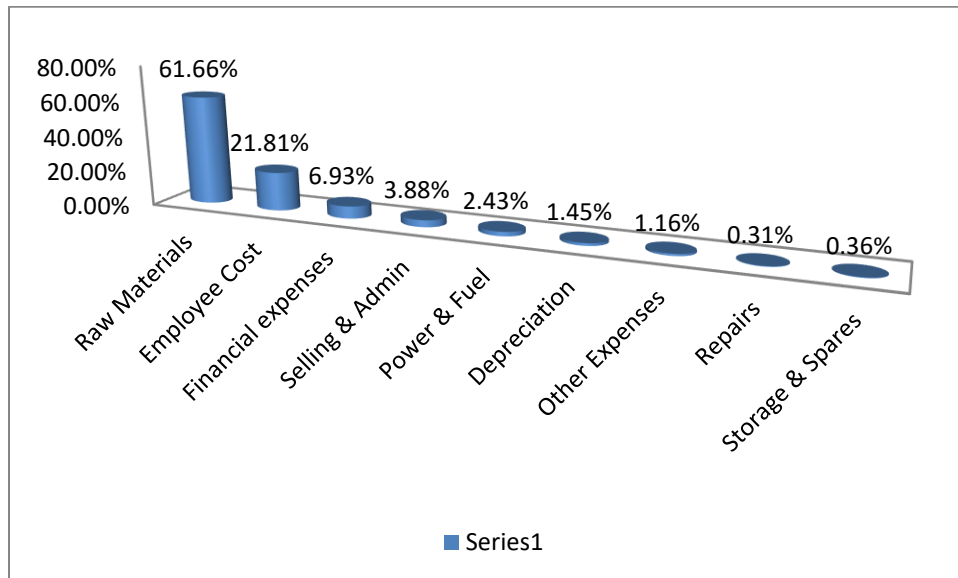
Authorized Capital	Paid up Capital	Accumulated Loss	Net worth
3500	3422.81	4445.12	(660.26)

Production Capacity is detailed below:

Products	Capacity (Million pcs p.a)	Output(Million pcs p.a)	Capacity Utilization
Radial Electrolytic Capacitor: Motor Start + High CV Capacitor	125	66.87	53.49%
Motor Run Capacitor (MPP Capacitor)	18*	12.26	68%
Resistor	175	45.72	26.13%

*Capacity increased from 10 to 18 during Feb 2021

Current Cost of Production is detailed below:



As it can be seen, the major costs are in Raw Materials. This is controlled the best possible through RM stock control. Other costs (expenses) are kept minimized as far as possible. The company has a lean management. A total of 12 members are in the managerial team [ie; MD, GM(Fin)-1, GM (Mat)-1, DGM(Prod)-1, DM-1, AM-7]

1.2 Major Departments & Products

1.2.1 Production Centre-1 (PC-1)

1.2.1.1 PC-1 Facilities

- Etching & Forming (Anodization) Plant
- Electrolyte Production Plant
- Lead tab production Plant
- Lead tab stitching/cold welding Plant
- Rolling Plant
- Casing, sealing and sleeving Plant
- Impregnation Plant
- Fully Automatic Sub miniature radial capacitor production Plant

- Capacitor Ageing, Testing and Sorting Plant

1.2.1.2 PC-1 Products

- Aluminium Electrolytic Capacitors (Radial)
- Aluminium Electrolytic Capacitors (Axial)
- Aluminium Electrolytic Capacitors (Snap-in-type)
- Aluminium Electrolytic Capacitors (Lug type)
- Aluminium Electrolytic Capacitors (Screw type)
- Aluminium Electrolytic Capacitors for Motor Start

1.2.2 Production Centre-2 (PC-2)

1.2.2.1 PC-2 Facilities

- Winding/Rolling Section
- Metallization Section
- Clearing& Soldering Section
- Potting Section
- Printing & Final Testing Section

1.2.2.2 PC-2 Products

Metalized Polypropylene (MPP) capacitors for Motor Run

1.2.3 KVAR Capacitor Production Plant

1.2.3.1 KVAR Plant Facilities

This Production Centre utilises the machines at PC-II Plant for manufacturing KVAR Capacitors. In addition, the Plant has extensive facilities for assembling of KVAR Capacitors, routine testing and inspection facilities etc.

1.2.3.2 KVAR Plant Products

KVAR Capacitors of the following types are assembled

- IDC - Industrial Duty Cylindrical
- IDS - Industrial Duty Square type
- LDC - Light Duty Cylindrical

- LDS - Light Duty Square Type
- HDC - Heavy Duty Cylindrical
- SHS - Super Heavy Duty Square

1.2.4 Resistor Plant

1.2.4.1 Resistor Plant Facilities

It is a dedicated Plant for manufacture of Carbon Film and Metal film resistors. Plant is equipped with necessary welding machine, capping and sorting machine, measuring and testing instruments etc.

1.2.4.2 Resistor Plant Products

- Carbon Film Resistors : Quarter Watt, Half Watt, One Watt
- Metal Film Resistors : Quarter Watt, Half Watt, One Watt

1.2.5 Piezo Electric Quartz Crystal Plant

1.2.5.1 Crystal Plant Facilities

Apart from standard frequency of various types of quartz crystals, it also caters to specific requirements of customised crystal products for ISRO, VSSC etc.

1.2.5.2 Crystal Plant Products

- Tuning fork Crystals
- Communication Crystals
- Customised frequency elements

1.2.6 Other Supporting Departments/functions

- QA - Incoming Inspection Lab
- QA - Finished Product Inspection Lab
- Raw Materials (RM) & Finished Goods (FG) Stores
- Plant Engineering Department
- Central Tool Room
- Calibration Department
- Research & Development Department

- Engineering & Design Department
- Materials Department
- Central Planning Department
- Marketing Department
- Personnel & Administration Department
- EDP/ERP Department
- Finance Department
- Secretarial Department
- MIS

1.3 Factory Capabilities

1.3.1 Forming plant

Forming is an electrochemical oxidation process of etched high purity anode aluminium foil, thickness range from 40 micron to 110 micron. The foils are usually supplied in 500 mm width, 300 to 500 meter length in wound roll form. Forming process demands considerable amount of power and chemicals. The plant has the necessary machineries for this high quality process.

1.3.2 Electrolyte production

Electrolytes are working fluid applied in the aluminium electrolytic capacitors. The formulation of the electrolyte depends upon the working voltage and temperature category of the capacitor. The plant has the necessary machineries for this high quality process, and has a production capacity of 1000 kg/ day

1.3.3 Slitting process

Anode foils after forming process, cathode aluminium foils and condenser tissue papers are slit into appropriate width depending on the capacitor size and capacitance. It is a continuous shearing process and the slit foils are wound to form rolls for the remaining process. The machines employed for this process in the plant are very sophisticated and advanced.

1.3.4 Lead Tab production facilities

In the electrolytic capacitor, lead tabs are the connecting material of the inner electrode foils to external circuits. This is a composite material, consists 4 different metals. Lead tab manufacturing is a high speed automatic welding, shearing and shaping process, and suitable machines are present in the plant.

1.3.5 Lead Tab washing facilities

The lead tab manufactured from the machine has welding residue and oil residue. So the item to be cleaned thoroughly before applying in the capacitor production line. Acidic, alkaline and organic solvent cleaning and drying semi-automatic machines are used in the plant for this purpose.

1.3.6 Printing facilities

Printing of rating, category –date code etc are done in two methods : (a) Printing on the capacitors outer plastic sleeve. (b) Direct printing on the curved metallic surface of the capacitor. Machines for both these methods are present in the plant.

1.3.7 Lead tab stitching/cold welding, rolling, impregnating, casing, sealing and sleeving facilities.

- Lead tab stitching/cold welding is a process where external connecting leads are attached to the electrode foil. It is a highly sensitive and precision demanding process.
- Rolling is the process in which anode electrode foil, cathode electrode foil and condenser tissue paper are rolled together to form a cylindrical section.
- Impregnation is the process in which the working electrolyte is admitted into the rolled section in vacuum condition.
- Casing is the process in which the impregnated rolled section is encapsulated in an outer Aluminium casing.
- Sealing is the process in which the outer aluminium casing is hermetically sealed using rubber/Bakelite.
- Sleeving is the process in which plastic heat shrinkable covering is done on the metal casing to electrically insulate the capacitor body.

For miniature size capacitors these process are carried out simultaneously and for large can capacitors these process are carried separately in separate machines. A number of machines for all the above processes are present in the plant.

1.3.8 Capacitor Ageing, Testing and Sorting section

Fully automatic and Semi-automatic ageing, testing and sorting machines are present in the plant.

1.3.9 Quality Assurance - Incoming Inspection Lab

Equipments and facilities for the inspection and testing of various chemicals and rawmaterials used for the manufacturing of Aluminium Electrolytic and Metalized Polypropylene Capacitors are present in the plant.

1.3.10 Quality Assurance – Finished Production Inspection Section

Equipments and instruments for the testing of various parameters and endurance are present in the plant to ensure quality.

1.3.11 Metalized Polypropylene Capacitor manufacturing facilities

The facilities include Film rolling machines, Rolled element clearing and testing machines, Metalizing machines, Finished capacitor testing and sorting machines, Potting plant, Resin production plant etc.

Chapter 2

Capacity & Manufacturing Process of the Products

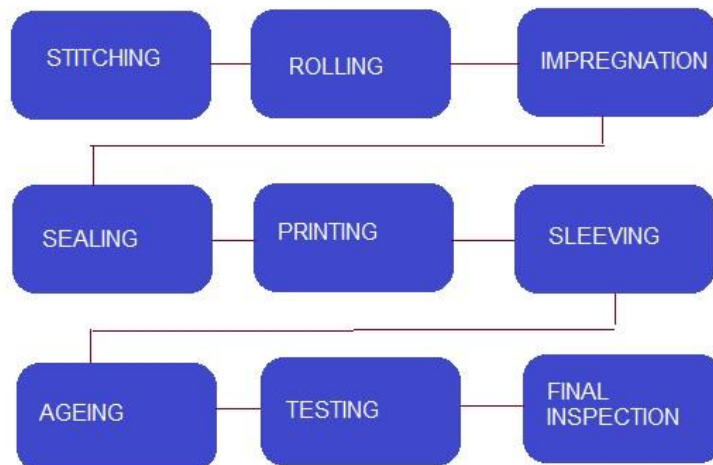
2.1 Electrolytic Capacitors& MPP Rectangular Capacitors

The current installed capacity for Electrolytic Capacitors is 125 million pieces per annum and that of MPP Capacitor is 18 million pieces per annum.

2.2 Process Flow Sheet

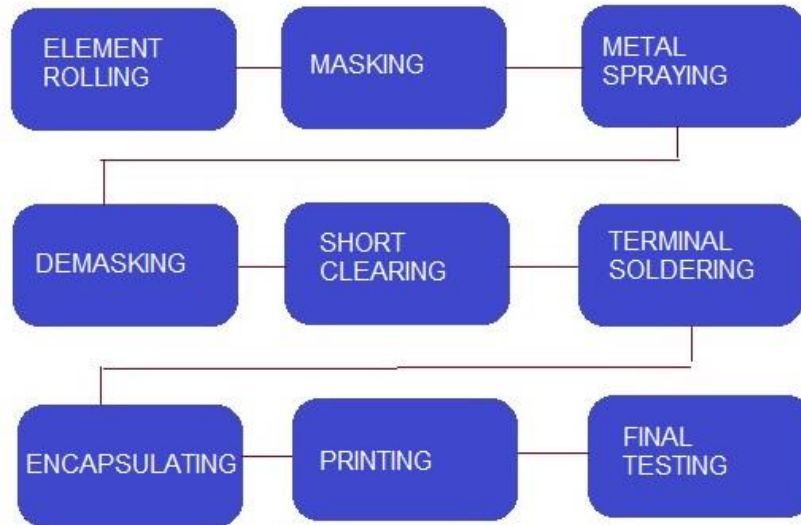
2.2.1 Electrolytic Capacitors

The manufacturing process involved in the case of Aluminium Electrolytic Capacitors are Slitting, Stitching & Winding, Impregnation, Assembling/Sealing, Sleeving, Ageing & Testing, Final Inspection and Packing. It involves Automatic and Semi-Automatic Machines of Japanese, Taiwanese and Korean Origin.



2.2.2 MPP Capacitors

The manufacturing process involved in the Metalized polypropylene Capacitors are Winding/Rolling, Metallization, Short clearing, Terminal Soldering, Potting, Printing, Final Testing and Packing. It involves Automatic and Semi-Automatic Machines of Swiss, Indian and Chinese Origin.

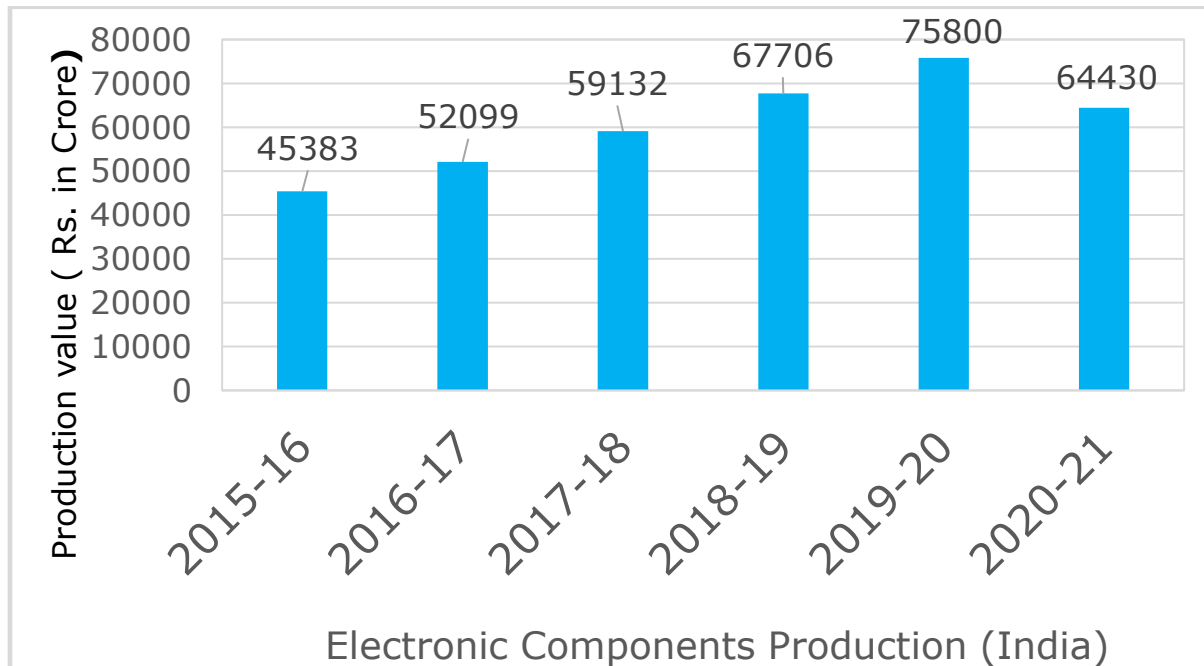


Chapter 3

Market Analysis

As per the report published by Ministry of MSME in December, 2020 (Prepared by KPMG), the global electronic capacitor market is estimated to register a CAGR of 4.69% to reach \$23.477 billion by 2023. The manufacturing of electronic components in India has grown considerably from 5.31 billion \$ in 2014 to 9.05 billion \$ in 2018. The export of electrical capacitors increased at 8.94%.

As per estimates of ELCINA, the overall production of electronics components was Rs. 75,800 Crores in 2019-20 compared to Rs. 67,706 Crore in 2018-19 (i.e.; increase by 12%). Also, there was consistent growth over the last 10 years.



Thus, the market shows a positive growth.

3.1 Marketing Strategy, Marketing Arrangements, Tie-ups

The company addresses the demand from the OEMs as well as Dealer markets. Dealers appointed after detailed scrutiny of their bonafideness, financial status, managerial capability etc. are deployed to cover the entire Indian market. Their

performance is evaluated on an ongoing basis with proper feedback from market. Each dealer is provided with a specified area of operation and no overlapping is permitted. New dealers are also appointed to cater to 100% market after complying with the above-mentioned procedures.

The company have a very good marketing network linking all the major cities in India to address the OEM market. Branch offices managed by our Parent Company KSEDC are operating from major Indian cities including Mumbai, Chennai, Kolkata, Hyderabad, New Delhi, Ahmedabad, Bangalore and Thiruvananthapuram. All branch offices have regular interaction with our customers and also with the marketing department attached with the company at our premises. The company has a well set up website with full details of our products to increase our market presence which also will help us to increase our market presence.

3.2 Main Competitors

Our major competitors in the capacitor market are given below. Some of them are world leaders in capacitor production.

- EPCOS India Pvt. Ltd.
- Vishay Components India
- Tibrewala Electronics Ltd
- Globe Capacitors Limited
- Amit Capacitors Limited
- Trishala Electrolytics Pvt Ltd.
- IEE Engineering Enterprises
- Deki Electronics Limited
- Desai Electronics
- Alcon Electronics Pvt Ltd
- Watts Electronics Pvt Ltd
- Incap Ltd
- Solid State Systems Pvt Ltd

- Panasonic India Pvt. Ltd.
- Rubycon Singapore Pte. Ltd.

3.3 Main Customers

Our main customers are given bellow. Our customers include premier Original Equipment Manufacturers (OEMS) of electronics products and equipments as well as premier dealres in India.

3.3.1 OEMs

- CG Power (Crompton), Goa
- Stranger Audio, Kolkata
- Schneider India(L&T), Mumbai
- V Guard Industries, Kerala
- CRI Pumps, Coimbatore
- Aqua Pumps, Coimbatore

3.3.2 Dealers

- Superior Electronics, Thalassery
- Amtech Enterprises Kannur
- Jayaram Enterprises, Coimbatore
- Ferrico Electronics (P) Ltd, Delhi
- Electro Chemical Lab, Delhi
- Nichani Electronics, Chennai
- Valiant Electro Sales, Mumbai
- Kelitune Electronics, Bangalore
- Elektronika Sales, Chennai
- Sri Ganesh, Secunderabad
- J.K. Electronics, Calcutta

Chapter 4

CURRENT CHALLENGES

4.1 Duplicate Products

This is a major challenge for the company. Exploiting our brand image, vulnerable sources are introducing duplicate products in the market. Various such cases were registered with Police on finding duplicates in the market. Raids were conducted in shops with the help of Police, and enquiries are progressing. Difficulty is that most of these vulnerable sources are in North India.

4.2 Production Automation

Automating human intensive activities in the production line is required to reduce production cost and time. The company has initiated various in-house project to address this. In-house developed PU Resin unit at an expense of Rs. 10 Lakhs is functional from 2019. Currently 3-4 such projects are being done for automation of certain areas which are human intensive. New machinery purchase process is in progress for Potting Automation and Brushing Automation.

4.3 Improving Utilization

Since the machineries are very old, frequent breakdowns happen. Spares of old machineries are not available in the market. Also many companies which produced these machineries are not existing today or not supporting the old version machineries. Hence we have formed our own PE department to maintain and service the machineries. There is also a dedicated tool room setup to produce spare parts for machineries. PE department is strengthened to reduce down time of the machineries.

4.4 Waste Management

Waste management is a major challenge for the company. Large amount of waste produced during production process including aluminium foil waste needs to be handled. Company plans to set up a separate waste management facility at an investment of Rs.25 Lakhs this financial year.

4.5 Rejection

This also is a major challenge for the company. Rejection during the production process is mainly due to the old age machinery. Dedicated team of PE attends to the machineries and make corrections needed. The team is enhanced. Spares for these old machineries are not available in market, and the original suppliers are not supporting. The dedicated tool room which makes spares is modernized at an expense of Rs.50 Lakhs with modern machineries. Task team is setup for review, report and implement corrective measures periodically.

4.6 Inventory Control

Raw material cost caters to more than 60% of the company expenses. To control this, raw material stock is to be effectively controlled and managed. This is also another challenge for the company to maintain the profit and growth.

4.7 Retaining Customers

We have a good standing in the market especially in the replacement market. This is achieved through our long years of quality service. It is a major challenge to retain our customers from our competitors offering cheap and unreliable products.

4.8 Retaining Dealers

We have a strong network of dealers all over India who are supporting us for long many years. Dynamic promotional scheme are to be provided to these dealers to continue with us and to prevent them from going to other competitor brands.

4.9 CEP Projects

Currently we have very minimum staff to manage the company activities. Now large scale expansion projects in the company are to be executed in time. The officers are managing these expansion projects in addition to their normal current responsibility for managing the production. This is another challenge company is facing.

Chapter 5

SWOT ANALYSIS

5.1 STRENGTHS

5.1.1 Good Brand Name

We have a good brand image. KELTRON Capacitors are widely accepted by major equipment manufacturers and Consumer Electronic Industries

5.1.2 Well Established Factory

We have a well established factory with optimized plant layout with more than 300 automatic and semi automatic machineries, many of them imported from Japan, Taiwan, Italy etc.

5.1.3 Well Established Dealer Network

We have a well established dealer network all over India, many of them are our dealers for the last 30+ years. We have sales offices in all major cities including Mumbai, Chennai, Kolkata, Hyderabad, New Delhi, Ahmedabad, Bangalore and Thiruvananthapuram

5.1.4 Technical knowhow

We have expertise in Capacitor manufacturing originally obtained through technical collaboration with Sprague Electromag, Belgium which is evolved over time.

5.1.5 Dedicated R&D

We have a well established R&D setup for the development of Capacitors and other components. The R&D is recognized by DSIR (Dept. of Scientific & Industrial Research, Ministry of Science & Technology, Govt. of India).

5.1.6 Strategic Location

The factory is located on the side of NH 17 linking Kannur- Kasaragod, and is also in close proximity with Airports (Kannur, Calicut, Mangalore), Seaports (Calicut, Mangalore) and Railway station(Kannur). Thus the Company is strategically located for ease of transportation of raw materials and finished products. The company is located in North Kerala, in close proximity to other industrial hubs, Bangalore, Mangalore, Coimbatore etc.

5.1.7 Skilled Human Resource

We have a skilled workforce of more than 600 employees with experience and expertise in Capacitor manufacturing.

5.1.8 Market Leadership

Keltron Capacitors are leading the market in India, especially in the Electrolytic Capacitor Market segment.

5.2 WEAKNESSES**5.2.1 Less Raw Material Availability**

Many of our raw materials are imported (around 70%). Quality raw materials for the manufacturing of capacitors are not available in India.

5.2.2 Limited RM Vendors in India

There are only few vendors for the raw materials required by us. Getting comparative quotations and negotiations for the raw materials gets limited.

5.2.3 Competitive Pricing

Due to the high cost of imported raw materials, our product cost is high and margins are less. Competing with low cost China items becomes difficult.

5.2.4 Cost of Raw Material Imports

For manufacturing superior quality products, we are forced to import high quality materials for higher price which depends on foreign exchange variations.

5.2.5 Old Machinery & Infrastructure

This is another weakness of the company. Many of the machineries are very old and also the buildings are more than 30 years old. All these require high maintenance cost. The old machineries cause high amount of rejection during production process and due to down-time for the repairs machine utilization is low.

5.2.6 Less Automation

Since the machineries are old technology, production automation is very limited and this causes human intensive works in the production process.

5.2.7 Less Succession Planning

During the recent years many of the experienced staff especially machine operators retired without replacement. This causes difficulties for the company in optimizing production.

5.3 OPPORTUNITIES

5.3.1 Expanding Market

The electronics component market is expanding rapidly due to the growth of ESDM sector. Requirement of capacitors are increasing which is a good opportunity for us.

5.3.2 Government Promotion

Government is promoting the manufacture of electronic components in India through various incentives like PLI (Production Linked Incentive) incentive scheme and Make-in-India initiatives.

5.3.3 Growth of ESDM Sector

ESDM (Electronics System Design & Manufacturing) sector is growing rapidly in India and all electronic devices and products manufactured require components like capacitors in a large scale. This is an opportunity for us.

5.3.4 Growing Export opportunities

The global electronic market is growing rapidly as explained in Market Analysis. The world require electronic components in a large scale. India can provide components at cheaper rate. Thus we have growing export opportunity.

5.3.5 Manpower Availability

We have experienced manpower with over 20 years of experience and expertise in component manufacturing especially capacitors. Kerala has large pool of educated technical human resource which is a plus point of us.

5.3.6 Good Environment Conditions

For components manufacturing, good environmental conditions of the factory location is very important. Moisture and humidity can affect the quality of components produced especially capacitors. Kannur, where the company is located has a good climate condition throughout the year.

5.3.7 Good Company Image

Keltron has good company image and enjoys belief and support of people in India that the company products are high quality and reliable.

5.3.8 Good PSU Image

Among PSUs, Keltron Component Complex Ltd. is performing comparatively well, consistently growing and has no bad remarks. Thus we get positive support from Government of Kerala and the society.

5.4 THREATS

5.4.1 Foreign Competition

We are competing with world leaders in components manufacturing. Company is required to continue to offer comparative good quality products at competitive price.

5.4.2 Cheap Products from Abroad

Cheap products from China and other foreign countries is a threat. This offer a tough competition.

5.4.3 Increasing Producers

In India capacitors and other electronic components manufactureres are increasing on a large scale. Foreign companies are also investing and starting production companies in India. This is also a threats the company has to address.

5.4.4 Foreign Exchange Variations

Since we import a considerable quantity of raw materials from abroad, the foreign exchange variation (Dollar to Rupee conversion etc) can seriously affect our production cost.

5.4.5 Less Ancillary Industries

Many of our raw materials are produced in north India. There are very few ancillary industries to offer quality raw material for us in Kerala. Company has to address high transportation cost, time and dependability on the outside industries supplying raw materials.

5.4.6 Less Dynamic Investments

In the electronic component sector, technology and requirements are rapidly changing. Periodic, dynamic investments and decisions to adress these is required to sustain the

company. Many a time the investments in the components manufacturing sector are huge which the company or Government alone is not able to address.

5.4.7 Govt. Policy Changes in Taxes,Duties etc.

Unexpected changes in Government policy can effect the company. One example was the recent demonitization and GST implementation.

5.4.8 Technology diversion

There could be diversion in the technology and standards of the electronic components. Company has to dynamically address those changes without delay.

Chapter 6

SHORT TERM PLAN (2021-2023)

6.1 Supercapacitor Production Facility Phase-1

This project is for setting up the Supercapacitor Production Facility at an estimated cost of Rs.1800 Lakhs. The project is expected to be complete by December 2022. The project is started and a consultancy agency for building appointed. Specifications for building and part machineries are finalized.

6.2 Capacity Enhancement Projects

The following Capacity Enhancement Projects are in the current year plan.

6.2.1 Rectangular Capacitor Production Machineries

This project is for setting up the Rectangular Capacitor Production Machineries at an estimated cost of Rs. 200 Lakhs. The project is expected to be complete by March 2022. The project is started and tender process progressing.

6.2.2 Automatic Stitcher cum winding Machine

This project is for setting up the Automatic Stitcher cum winding Machine at an estimated cost of Rs.100 Lakhs. The project is expected to be complete by December 2021. The project is started and Purchase Order released.

6.2.3 Automatic Ageing & Testing Machine

This project is for setting up the Automatic Ageing & Testing Machine at an estimated cost of Rs.200 Lakhs. The project is expected to be complete by March 2022. The project is started and tender process initiated.

6.2.4 Tool Room Modernization

This project is for setting up the Tool Room Modernization at an estimated cost of Rs.50 Lakhs. The project is expected to be complete by December 2021. The project is started and Purchase Order released for various machineries.

6.2.5 R&D Facility Expansion

This project is for the R&D facility expansion at an estimated cost of Rs.25 Lakhs. The project is expected to be complete by December 2021. The project is started and Purchase Order released for various equipments.

6.2.6 Waste management facility

This project is for setting up the waste management facility at an estimated cost of Rs.25 Lakhs. The project is expected to be complete by March 2022. The project is started and technical negotiations progressing.

Chapter7

MEDIUM TERM PLAN (2022-25)

7.1 Large Scale and Commercial Production of Supercapacitors

This aims large scale and commercial production of Supercapacitors at an estimated cost of Rs.200 Lakhs. The project is expected to be complete by 2022-25. Incubation, Engineering & Design modifications, Production of various ratings, Market promotion, and Exports exploration are all planned in this stage.

7.2 Setting up Li.ion phosphate Battery production facility

This aims setting up Li.ion phosphate Battery production facility in technical collaboration with ISRO at an estimated cost of Rs.2000 Lakhs. The project is expected to be complete by 2023-25. The project utilizes some of the manufacturing facilities of the Supercapacitor production setup.

7.3 Capacity Enhancement Projects

The following Capacity Enhancement Projects are in the plan.

7.3.1 MPP Film Metallization Plant

This aims setting up MPP (BOPP) film metallization plant at an estimated cost of Rs.1000 Lakhs. The project is expected to be complete by 2023-24. Currently we are outsourcing metallized BOPP films. By this investment we can do metallization of the film in-house, thereby reducing 10% cost of production and improve quality of MPP capacitors.

7.3.2 Modernization of Resistors Plant

This aims modernization of the Resistors plant at an estimated cost of Rs.200 Lakhs. The project is expected to be complete by 2023-24. Existing machineries are very old and requires continuous maintenance to reduce rejection, which yields very low productivity. The project is for selective modernization.

7.3.3 Modernization of Piezoelectric Crystals Plant

This aims modernization of the Crystals plant at an estimated cost of Rs.200 Lakhs. The project is expected to be complete by 2024-25. Existing machineries are obsolete and non-functional. The production facility needs to be fully re-established with modern machineries.

Chapter 8

LONG TERM PLAN (2025-30)

8.1 Supercapacitor Production Facility Phase-2

This aims setting up Supercapacitor production facility phase-2 at an estimated cost of Rs.2200 Lakhs. The project is expected to be complete by 2025-27. Phase-2 utilizes 100% electrode technology developed by ISRO.

8.2 Establishment of SMD Electronic Components Production Facility

This aims establishment of SMD electronic components production facility. The estimated cost to be assessed with DPR. The project is expected to be complete by 2025-27. Surface Mount components are currently used in PCBs and electronic devices such as Mobile Phones. Multilayer Ceramic Capacitors (MLCC) are in great demand.

8.3 Establishment of Active Electronic Components Production Facility

This aims establishment of active electronic components production facility. The estimated cost to be assessed with DPR. The project is expected to be complete by 2027-30. Currently we are producing only passive electronic components. We would like to expand the production facility for active electronic components such as Diodes, Thyristors, Power ICs, Optoelectronics components, Active Sensors (IoT) etc.

8.4 Capacity Enhancement Projects

The following Capacity Enhancement Projects are in the plan.

8.4.1 Expansion & Modernization of Capacitor Production Facility

This aims expansion & modernization of capacitor production facility at an estimated cost of Rs.20 Lakhs. The investment is for phased replacement of the very old machineries. The project is expected to be complete by 2025-30 with Rs.10 Crores investment during 2025-27 & Rs.10 Crores investment during 2027-30

Chapter 9

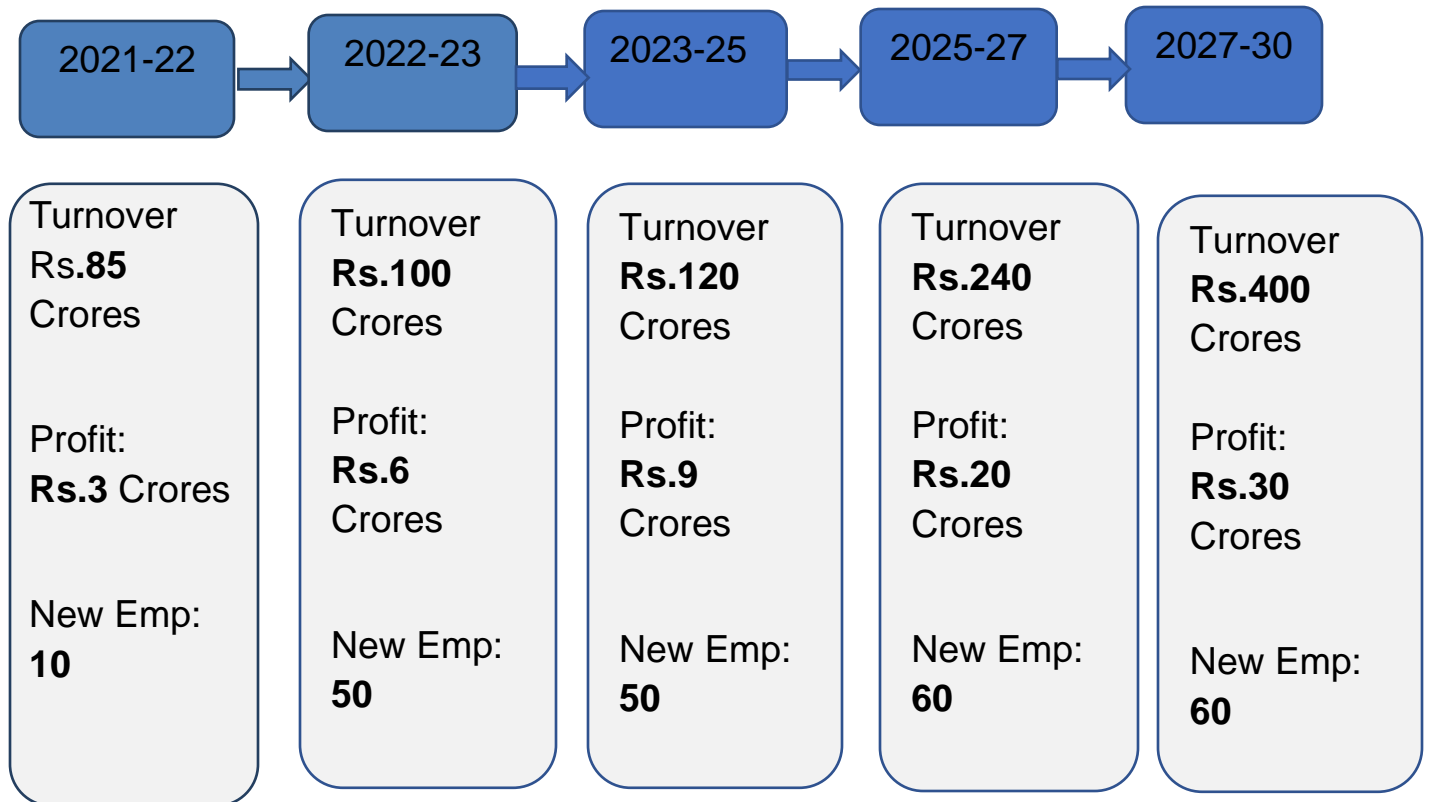
ROAD MAP [2021-2030]

The Road Map is given bellow.

		TITLE	REMARKS	INVESTMENT	EMPLOYMENT
SHORT TERM PLAN	2021-23	Supercapacitor Phase-1	Project Approved.	18	40
		CEP Projects	Part of the Rs.10 Crores Project approved and initiated in 2019-20. [Cap. Enhancement & Modernization] New Products: (1) MPP Rectangular Capacitors (2) KVAR Capacitors	6	20
MEDIUM TERM PLAN	2023-25	Li-Ion Phosphate Battery	With R&D Association with ISRO	20	40
		CEP Projects	Capacity Enhancement & Modernization (1) BOPP Film Metallization (2) Resistors Plant Modernization (3) Crystals Plant Modernization	16	10
LONG TERM PLAN	2025-27	Supercapacitor Phase-2	Using ISRO Technology	22	15
		SMD Components	To be Assessed by DPR		40
		CEP Projects	Capacity Enhancement & Modernization - Existing Products	10	5
	2027-30	Active Components	To be Assessed by DPR		55

		CEP Projects	Capacity Enhancement & Modernization- Existing Products	10	5
		Total		102	230

In summary, this plan expects to generate an employment for 230 persons at an investment of Rs.102 Crores plus over a period of 9 years as detailed above.

Chapter 10**SUMMARY : VISION 2030**

In summary, as per this plan the turnover of the company is expected to reach Rs.400 Crores with a net profit of Rs.30 Crores by the year 2030. We have been approved for the PLI incentives scheme of Government of India. As per this scheme KCCL will be eligible to get incentives of 5% to 3% on incremental sales turnover during 2021-25 [Year1 - 5%, Year2 - 4%, Year3 - 4 %, Year4 - 3%], if the investment is done as per this plan.

10.1 Revision 1- Modification as per Expert Review

Government has constituted a panel of Experts to review this master plan as per G.O.(Rt)No. 934/2021/ID dt 31.08.2021.

As per the GO, the following expert panel reviewed the master plan on 04.09.2021.

Sectoral experts	Shri. I. V. sharma ,(Expert in the first level review) Retd-Director (R&D), BEL, Ph:+ 91 99726 44554
Management Expert	Shri. E. Nandakumar ,Former Executive Director BPCL Ph:+ 91 94950 05050
Finance Expert	Shri. Suresh Mohan R ,Chartered Accountant Ph: + 91 98470 61731

The following modifications are incorporated in the Master Plan as per the review remarks.

- 1) A proper ERP (SAP or similar) system is to be implemented during the short-term plan. This may require setting up proper data centre, LAN and ERP software.
- (2) For the implementation of the Master Plan, Joint Venture or PPP model funding also to be explored.
- (3) The plan is generally appreciated and should try to speed up implementation and completion well before 2030, if funds are available.
