



CENTRAL ELECTRONICS LIMITED

1. INTRODUCTION:

Central Electronics Limited (CEL) is a Public Sector Enterprise under the Ministry of Science & Technology, Government of India. It was established in 1974 with an objective to commercially exploit indigenous technologies developed by National Laboratories and R&D Institutions in the country.

CEL has indigenously developed and manufactured a number of products in close association with the premier National & International Laboratories including Defense Laboratories. In recognition of all these efforts, CEL has been awarded a number of times with prestigious awards including *“National Award for R & D by Department of Scientific & Industrial Research (DSIR)”*.

CEL is presently working in four major business segments (viz. Solar Photovoltaics, Railway Signaling Systems, Defense Electronics and integrated Security and surveillance Systems) and has further initiated work in a fifth (training for capacity building in the area of Solar Photovoltaics).

CEL has been the pioneer in the area of Solar Photovoltaics (SPV) in the country with the distinction of honor & manufactured India's first solar cell in 1977 and first solar module in 1978. It also set -up India's first solar power plant in 1992. CEL manufactures crystalline silicon solar cells

using state-of-the-art technology and a wide range of SPV module starting from 10 Wp to 300Wp to suit customer's requirement. CEL primary focus on for off-grid, roof top, rural electrification and it has showcased Indian PV technology in many Asian, African and Latin American countries over the last two decades and it has installed over 5,00,000 SPV systems across India and in over 30 countries Internationally.

The company has recently installed a new state-of-the-art automated Module Manufacturing line for enhancing & upgrading the module manufacturing facility.

In addition, CEL is now looking for new technologies for high efficiency solar cell production. It has initiated an R & D project on the Development of Heterojunction with Intrinsic Thin layer (HIT) Solar cells with an efficiency of more than 20%.

CEL is also putting thrust on development of various application of Solar PV mainly for rural to urban applications. It has recently signed an MOU with Dedicated Mumbai Industrial Corridor Development Corporation (DMICDC) for preparing the renewable energy plan for the new smart, sustainable cities and is also working on making its own campus a green campus.



RAILWAY ELECTRONICS

The Company manufactures a range of Railways safety & signaling equipment including Axle Counters, Block Instruments etc. CEL has developed a number of systems in collaboration with IIT-Delhi, including Analogue Axle Counters, Digital Axle Counters, Multi Section Digital Axle Counters etc. It has got RDSO approvals for three products in the recent past viz. Multi Section Digital Axle Counters, (MSDAC) High Availability Single Section Digital Axle Counters (HASSDAC) and Universal Failsafe Block Interface (UFSBI). In the area of Railway Signaling the Company functions on competitive basis with a number of Indian & international firms competing for the same market space.

The Company is in the process of expanding its product range as well as for upgradation of existing products for Railways.

DEFENSE ELECTRONICS

CEL produces a range of products for the strategic sector, in collaboration with various national laboratories and institutions. Its range includes Phase Control Modules for Radar Systems, Piezo Assemblies used by Ordnance Factories as well as Piezo Elements for marine use etc. In the past year, the Company has signed MOUs with SSPL & CMET for new projects in various areas.

INTEGRATED SECURITY SYSTEMS

The current security scenario in the country has made security systems (Including Baggage Scanners, DFMDs surveillance equipment, intelligent systems, Bomb detection and disposal equipment etc.) a very high growth area. There is a need for a reputed and reliable Public Sector entity in these areas. The Company is focusing on these areas as an important business segment for future growth. To achieve the business objective, the Company has tied up with a number of reputed original equipment manufacturers and is developing in-house integration expertise for establishing a core strength in this business.

2. OPERATING RESULTS (2014-15)

During the year the Company recorded production of Rs. 167.52 Crores and sales of Rs. 168.29 Crores against the previous year's production of Rs. 175.81 Crores and sales of Rs. 172.05 Crores.

(Rs. In Crores)

Year	2014-15	2013-14
Production	167.52	175.81
Sales	168.29	172.05
Gross Margin	13.88	11.15
Gross Profit	10.28	8.40
Profit Before tax (PBT)	4.96	3.15
Net Profit after tax (PAT)	4.06	3.09

During the year (2014-15) under review Your Company has achieved the Gross Margin of R 13.88 Crores against Rs. 11.15 Crores in the previous year. The Company has also achieved Net Profit after Tax of Rs. 4.06 Crores against Rs. 3.09 Crores in the previous year.

3. EXPORTS:

During the year 2014-15, exports have been Rs 1.08 Crores.

4. MAJOR ACHIEVEMENTS (2014-15):

- During the year under review, your Company has supplied 38,210 Nos. of Phase Control Modules (PCMs) to Bharat Electronics Limited (BEL), Ghaziabad.

Company has implemented ERP for cost effective management

- It has launched certificate level training course in this area with the support of the MNRE.
- The Company has also executed surveillance works for municipal Corporation and

integrated security works across ten railway stations spread over three Zonal Railways.

- During the year under review, your Company executed an order for a 1 MWp power plant with high efficiency SPV Modules which would be biggest plant with such modules in the country.
- In the area of Solar Photovoltaics also, Company has been updating its technologies and capabilities and has recently commissioned a fully automated state-of-the-art module manufacturing production facility and dedicated to the nation by the Hon'ble Minister of Science and Technology & Earth Sciences.



Automated module manufacturing production facility



Solar Modules Developed for Science Express

- In the area of materials and strategic electronics the Company is working on developing new products to expand its product range and has entered into Transfer of Technology agreements with IIT, Delhi as well as C-MET for various products.

5. FUTURE OUT LOOK & VISION 2020

All the four areas that the Company operates in (viz. Solar Photovoltaic, Railway Signaling systems, Integrated Security & Surveillance Systems and Defence Electronics) are Per-Se high growth, core sector areas. The Company can make huge contribution to the national interests and future potential for the Company is immense.

SOLAR PHOTOVOLTAIC'S (SPV)

The Government of India has increased the target for implementation of renewable energy from 20,000 MW to 100 GW by the year 2022 under National Solar Mission. It is proposed to enhance solar PV business of Off-Grid/Grid Interactive Power Plants Defense sector, educational institutions etc. under National Solar Mission directly as well as through channel partners. Some other emerging prospects in Solar Photovoltaics business is implementation of green energy programme by Ordinance Factory Board, solar power plants for Indian Railways and rural electrification programme.

CEL aims to play an important role in these efforts and is targeting to capture 2.0% (Grid-tied) & 4% (Off-grid) market by 2022. In this regard, the Company has already increased the module production facility. This will bring down the cost of CEL modules and make it competitive in the domestic & international markets. The Company has also takes up a project development of high efficiency solar cells with the funding from Administrative Ministry, DSIR.



CEL has entered into a new market segment i.e. partnering with CPSEs to execute their Corporate Social Responsibility (CSR) activities through various energy enabled development project. This is to be a major focus area for the Company, in times to come.

FLEXIBLE MODULES FOR RAILWAY APPLICATIONS

For the first time, the Company has indigenously developed and manufactured flexible solar module specially used for Railway Coaches. The same has been installed on Science Express which was flagged off by the Hon'ble Minister of Science and Technology & Earth Science on 15th October, 2015.

RAILWAY ELECTRONICS

CEL had been engaged in design and manufacture of Railways signaling equipments such as Analog and Digital Axle Counters & Block Signaling Equipment for last 30 years. Indian Railways is planning major investment in the area of safety as well as capacity enhancement / new lines. This is expected to result in a huge demand for signaling and control equipments. CEL is working towards further developing its own R&D as well as production facilities in these areas with support from the DSIR.

The Company is upgrading its support network in Railways to enhance customer satisfaction.

In future, the Company plans to develop new interfaces for its existing equipment to make them work through optical fiber cables that are now being used by Railways.

STRATEGIC ELECTRONICS

CEL has been involved in the development of strategic electronic components such as Phase

Control Modules (PCMs) for the Radar systems, Piezo Generators for HEAT Fuse 551 & 651 for Carl Gustaf Gun, Cristoballite for space applications etc. The Company is making all efforts to further expand the product portfolio using state-of-the art technology for supply of strategic components.

NEW BUSINESS AREAS

In the recent past CEL has also made an entry into the area of integrated security systems. The first such system was installed at Delhi Main Railway Station more than two years ago and CEL is currently in the process of supplying similar systems for other Railway as well as non-railway locations.


There is a huge requirement of trained manpower in area of Solar energy – for installation, operation as well as Maintenance of Solar power plants in the country. CEL has launched a certificate course in System Sizing, Installation, and Commissioning & Maintenance of Solar Photovoltaic Systems to assist the capacity building for meeting the targets under National Solar Mission.

6. FOREIGN EXCHANGE RECEIPTS AND OUTGO:

During the year under review, your Company has spent Rs 24.35 Crores in foreign exchange as against Rs. 14.05 Crores in the previous year towards purchase of raw material, components and spares, capital goods, travel and agency commission etc. Your Company earned foreign exchange of Rs. 1.08 Crores as against Rs. 4.81 Crores in the previous year from export of its products.

7. ENERGY CONSERVATION:

The Company continues its efforts to reduce energy consumption with the Objective of optimal use of energy resources and cost reduction to the Company. The Company has recently initiated a project for converting the campus into a green campus. In



addition keeping as the philosophy that **“ENERGY SAVED IS ENERGY PRODUCED”**, the Company has taken following actions for conservation of energy:

- (a) Improvement of power factor through installation of capacitor banks etc. The Company continuously getting power factor over 0.95 for the last six months with the best over power factor 0.994 in November, 2014. This is a remarkable achievement by even the most stringent standards.
- (b) Minimizing idle running of machines during start-up through strict planning and close coordination among different activities of the plant.
- (c) Diesel savings by close monitoring of idle running of DG sets.
- (d) Display energy conservation posters in all the production divisions on lighting, Pumps, Compressor and A/C.
- (e) Replacement of flourcent tube lights with CFL's/ LED lights etc.
- (f) Gradual switchover to star rated ACs.
- (g) Regular Maintenance of electrical equipment, switch gear & motor pump sets for optimal performance.
- (h) Encouraging employees to save electricity by switching off fans/lights/working equipment, when not needed.
- (i) Taking steps to make full use of energy from in-house solar capacities.

8. PARTICULARS OF EMPLOYEES:

In terms of the provisions of Section 197(12) of the Act read with Rules 5(2) and 5(3) of the Companies

(Appointment and Remuneration of Managerial Personnel) Rules, none of the employees of your Company either employed throughout the year or employed for a part of the year was in receipt of remuneration more than that minimum prescribed in the Rules. However as per the provisions of Section 197 of the Companies Act, 2013 and rules made there under, Government Companies are exempted from inclusion of the statement of particulars of employees.

9. IMPLEMENTATION OF HINDI, INDUSTRIAL RELATIONS AND HUMAN RELATIONS:

Your Company continued to implement the Official Language policies of the Government through motivation and incentivization. Employees were imparted training in usage of Hindi in computer application. Hindi week has also been organized from 14.9.2014 to 29.9.2014. During the Hindi week, competitions in Hindi for workers and Officers belonging to Hindi and non-Hindi areas were organized.

Publication of in-house Magazine “Hamara CEL” was also started during the year. The Annual Report of your company is also regularly published in diglot form in compliance of DPE guidelines and employees are encouraged to use Hindi in official correspondence.

10. WELFARE OF RESERVED CATEGORIES:

All Government Directives relating to the reserved categories such as SC, ST, Physically Handicapped, Ex-servicemen etc. continue to be implemented during the year.

11. MEASURES TAKEN FOR PROTECTION OF ENVIRONMENT

Your Company is in the business of Solar Photovoltaic's which itself reduces pollution caused

by other sources of electricity generation. Further, your Company is concerned not only to comply with norms for prevention and control of pollution, but also to go beyond this by adopting clean technologies and improvement in management

practices. Your Company has already obtained ISO 14001:2004 environmental management systems certification and has initiated work on a project for making its campus a green campus.



