

VII-B. CENTRAL ELECTRONICS LIMITED

1. INTRODUCTION

Central Electronics Limited is the other Public Sector Undertaking engaged in the field of SPV. CEL's objectives are as follows:

Solar Photovoltaics: To be a major global and domestic player in the area of Solar Photovoltaic cells and Modules by capacity enhancement and by manufacturing higher wattage modules with special emphasis on use of thinner wafers to become price competitive in the domestic and international markets.

Railway Equipment: To maintain leadership in the development, manufacturing, supply and commissioning of signaling and safety equipment for the Indian Railways to meet their existing and emerging modernization needs in line with their future strategies.

Defence: To expand the product portfolio using state-of-the-art technology for supply of strategic components such as PCM to be used by DRDO laboratories; PZT and di-electric material for use by BEL, NPOL and BARC; and heat fuse to be used by ordinance factories.

Safety and Security: To diversify into security systems and equipment used to counter terrorist threats in India by commercializing the latest state of-the-art technology from abroad

2. OPERATION RESULTS (2010-11)

During the year the Company recorded production of 157 Crores and sales of 153 Crores against the previous year's production of 124 Crores and sales of 115 Crores.

During the year under review Company earned Gross Margin of 6.09 Crores before interest, depreciation, tax, prior period adjustments and extra-ordinary items as compared to Gross Margin of 7.30 Crores in the previous year. Gross Profit for the year under review was 3.68 Crores as against Gross Profit of 4.90 Crores in the previous year.

2.1 Exports

During 2010-11, exports have been 9.96 Crores, as against 10.53 Crores in 2009-10.

In Crore

	2010-11	2009-10
Production	156.80	123.54
Sales	152.99	114.52
Gross Margin	6.09	7.30
Gross Profit	3.68	4.90
Net Profit before tax and extra ordinary items	0.11	0.62
(+) Net Profit/(-) Net Loss after tax and extra ordinary items	(-) 17.25	(+) 0.12

2.2 Major Achievements of CEL during 2010-11

- During the year under review Company has successfully executed a project for solar electrification of villages in Afghanistan spread over the whole country through Norwegian Church Aid (NCA), Kabul.



Solar Home Lighting System installed in remote village in Afghanistan

- During the year company successfully installed and commissioned village electrification in Guinea Bissau under IPSA Programme with a total value of 1.5 Crores.
- During the year the Company has executed large number of projects worth 3.00 Crores of Solar Photovoltaic systems for Indian Railways for their integrated power supply systems.
- The Company continued the production of the phosphorous paste in-house. The manufacturing license has been taken from Inter-University Micro Electronic Centre (IMEC), Belgium for manufacturing of Phosphorous Diffusion. This has resulted in reduction of the cost of input material significantly.
- During the year, the Company has exported SPV products to Nepal, Sudan, Nambia, Afganistan, Mali etc. for a total value of 10 Crores.
- During the year, the company has installed different power plants in various location in

the country like DSIIDC-Delhi, IOCL-Dehradun, Assam Engineering College-Assam, Brahamakumari at Mount Abu, CISF, New Delhi, KREDA-Kargil and TIDCL-Agartala etc. of capacity 817 KWp at a cost of 20.85 Crores.

- Further the company also executed grid tied power plant of 25KW capacity installed on the roof of MNRE building, Small power plants of 10KW each were installed at Heritage monuments such as Jantar Mantar, Safdujung Tomb for lighting.
- During the year orders more than 60 Crores were received for putting of solar power plant of 100 KWs each at various location of Sashahtra Seema Bal (SSB) and Central Industrial Security Force (CISF) and some technical institution under roof top scheme of MNRE.



60 KWp Off-grid Solar PV Power Plant installed at Office of Sashatru Seema Bal (SSB), Sapri, Himachal Pradesh

- The R & D project for the supply of 15x15 mm CZT crystals for 1275 nos. worth 1388 Lakhs to Solid State Physics Laboratory (DRDO) Delhi has been successfully completed and for the next phase purchase order for supply of 900 nos. 20x20 mm CZT crystals worth 1450 Lakhs during the next three years has been received.
- During the year the Company sold 755 Nos. of Axle Counters (525 Nos. Digital and 230 Nos. of Universal Axle Counter) valued at 24 Crores to Indian Railway despite tough

competition from private firms and safety enhancement work in already installed SSDAC.

- The company has executed a number of Railway Signaling projects worth more than 10 Crores which includes successful completion of Block proving by Axle Counter in 50 Block Sections in Northern, North Western and Western Railway. The company also commissioned 10 panel interlocking stations worth 8.00 Crores in Lucknow Division of Northern Railway. The Company also got two contracts from Central Railway worth 4.85 Crores for the work of block proving by Digital Axle Counter in Bhusaval-Badnera and Bhusaval-Igatpuri section.
- The Company also completed project of providing Cathodic Protection Systems to Viramgam-Kandla Pipeline of Indian Oil Corporation Ltd worth 1.82 Crores.
- Company is enhancing the capacity to manufacture Phase Control Modules for Akash Missiles and weapon locating Radar to 40,000 PCMs per year. The Company has completed the order of 24,000 nos. of PCM to the tune of 30 Crores. The company has got the prestigious order of 80 Crores from BEL, Ghaziabad for the supply of 64,800 PCM (C Band 54000 Nos. and X Band PCM 10,800 Nos) in the next financial year. The Company is also expecting a repeat order from BEL Ghaziabad during the financial year 2011-12 of 80 Crores which is to be executed in the next 4-5 year. During the financial year 2012-13 further order for supply of C Band PCM 1,50,000 Nos. is to be received from BEL, Ghaziabad value 150 Crores approximately. The company is also expecting an export order from PIT, POLAND for supply of 600 PCM of the value of 1.00 Crore.
- Company has successfully developed Piezo Generator for the Heat Fuse 551 for

Ordnance Factory Khamaria (OFK). During the year the Company has supplied 98,213 Nos. Piezo Generator of the value of 21.00 Crores to OFK. A repeat order to the tune of 70,000 Nos. Piezo Generator worth 18.00 Crores is being expected in the next financial year i.e 2011-12.

- Company has successfully demonstrated the technology of project on "Public Area Security to Counter terrorist threats at Platform No.18, at Old Delhi Railway Station to guard Samjhauta Express which departs to Pakistan with a grant of 24 Crores from Technology Development Board, Ministry of Science and Technology. This will help the Company to participate in security system tender project tenders from various Government Department mainly from Indian Railways. More opportunity will be available to CEL for this purpose.

3. FUTURE STRATEGY

The Government of India has announced its policy on deployment of solar system under the Jawaharlal Nehru National Solar Mission (JNNSM). This is a major initiative of the Government of India and State Governments to promote ecologically sustainable growth while addressing India's energy security challenge. CEL has plans to adopt the available new technologies and increase the installed production capacity from existing level of 10MW to 100 MW by 2012 and enter in to a joint venture for production of silicon wafer. Under the joint venture, silicon ingots shall be produced in Russia and slicing facility shall be developed in CEL to meet the in-house and international demand of silicon wafer. The proposal for enhancement of capacity and joint venture has been prepared for approval from Ministry under 12th Five Year Plan. Further the Company is focusing more business under Bharat Nirman Scheme of Government of India for deploying solar powered drinking water pumping systems for about 55,000 villages. This will generate SPV business opportunity to the tune of 100 MW per year. Under the 'Roshni' programme,

Hon'ble President of India has desired that Universities, Raj Bhawans and other Government Offices, CSIR Labs, Defence Establishments, Para Military Forces, Ordnance Factories and Engineering Colleges are to promote use of solar energy. This could be a result into enhance future business for Solar Photovoltaic Division. The company is taking all efforts to participate in the projects to be selected under JNNSM and book order not only in the off-grid applications but also in grid-tied applications also.

The main business activities of the Company in the field of Railway Electronics consist of design, manufacture and installation of both analog and digital axle counter.

CEL has developed high reliability Single Section Digital Axle Counter with self resetting capability to achieve high system availability. This will facilitate uninterrupted movement of train into block system during failure of one system. This will be a cost effective solution to achieve high reliability.

Indian Railway has plans to deploy more than 6000 Universal Fail Safe Block Interface (UFSBI) which can work on both copper and optic fiber. CEL has taken up the development work of UFSBI to tap the market of Panel Operated Block System.

CEL is getting approval for supply of Multi Section Digital Axle Counter (MSDAC) by RDSO which is expected to be deployed in large number for track circuiting of station yards. With the addition of Multi Section and Point Zone Digital Axle Counter, our Company shall be able to provide track circuiting solutions with two detection points to forty detection points in straight section and point zones of station yards, auto block sections and absolute block sections.

Company has also taken up development of train information display system and data logger system for monitoring operation of different signalling installations. The fabrication of prototype models of both equipment is at advanced stage of completion. With addition of two new products,

your company will increase its existing product portfolio to tap more business opportunities in the field of Railway Signaling & Safety.

Company has taken initiative to sign a Memorandum of Understanding (MOU) with Nippon Signal Co. Ltd. Japan for participating in the project to implement Audio Frequency Track Circuit, Multi Section Digital Axle Counter and Train Protection & Warning System for the signalling requirement to address dedicated freight corridor to be implemented by the Indian Railways.

Company planned to supply 70,000 Nos. of Piezo Generators worth 18 Crores during the year 2011-12. Besides, business to the tune of 5 Crores can be achieved from the others customers against supply of various other Piezo based components. Further Company has successfully implemented Integrated Security System at Old Delhi Railway Station under the funding from Technology Development Board. With the successful implementation, the Company also started submitting tenders against various enquiries from Police Departments, Railways and other Government Departments for their security system. It will enhance the business opportunity to the tune of 10 Crores in the next financial year.

Company has initiated actions for development of bullet-proofing of vehicles and bullet proof jackets in association with a channel partner. With the development of bullet-proofing of vehicles and jackets it will generate business worth 100 Crores in the financial year 2012-13.

Company has developed 7seconds Delay Timer Unit (DTU) to be used in Heat 551 ammunition for 84 mm Carl Gustaf Gun for Ordnance Factory, (OFK) Khamaria and it is under process of evaluation/approval by OFK. Once it is approved, revenue generation to the tune of 20 Crores per annum can be achieved.

In strategic area, Company is in the process of enhancing the production capacity of Phase Control Modules (PCM) to 40,000 nos. per annum. The current projected demand of PCMs by Indian Army & Air Force, to be used in Akash Missile

System and Weapon Locating Radar is 3,84,000 nos. in the next five years value of 400 crores approx. This will generate business to the tune of 80 Crores for the PCM per year in the next five year.

The Company is also taking necessary steps that would gradually increase existing capacity of Solar Photovoltaic Modules to 80 MW. The existing product portfolio of CEL would be studied more closely and expanded wherever opportunity has presented itself e.g. in the CZT – discussions have been intensified with SSPL (DRDO) to take up new products such as MCT, growth of Germanium Crystals. Similarly, for SPD new product lines such as Audio Frequency Track Circuit, Multi Section Digital Axle Counter, Universal Fail Safe Interface Based Block System for station-to-station signaling are under consideration. Traction Converter (Hitachi), Train Protection and Warning System, Train Information Display System are being pursued. As regards MED, new addition to Phase Control Module Devices (PCMs), a new generation of product are being tried out. In respect of Electronic Components Division, some of the new product lines that are contemplated like AFT Enclosure for Ammunition, Armored Vehicle using composite, Sub-assemblies using Piezo Component.

Efforts that are currently underway to involve academic institutions to provide technology solutions and for suggesting ways to improve process design would be further re-enforced to bring about higher levels of productivity and management efficiencies. The Company has engaged Confederation of Indian Industry (CII) for establishing and operationalising the Activity Based Costing (ABC) for identifying redundant activity and also to utilizing the resources more efficiently.

4. FOREIGN EXCHANGE RECEIPTS AND OUTGO

During the year 2010-11 under review, company has spent ₹27.47 Crores in foreign exchange as

against ₹19.13 Crores in the previous year towards purchase of raw material, components and spares, capital goods, travel etc. Company earned foreign exchange of 9.96 Crores as against 10.53 Crores in the previous year from export of its products.

5. ENERGY CONSERVATION

The company being an electronic industry, its operations are not energy intensive. However, the company frequently evaluates its processes and plant and machinery to economize on its energy consumption. To reduce power consumption, conventional tube lights and bulbs have been replaced with CFLs. It has done redistribution of the leads in the solar photovoltaic plant so as to make optimum use of its captive DG sets. More than 1,000 poplar plants have been planted. A nursery of poplar plants has been set up to provide saplings for further plantation next year. Thus, the company is putting in efforts towards improvement of the environment.

6. PARTICULARS OF EMPLOYEES

In accordance with the Companies (particulars of employees) Rules 1975 read with Sub-section 2-A of Section 217 of Companies Act 1956 as amended in 1988, none of the employees of the Company either employed throughout the year or for a part of the year under report, was in receipt of remuneration more than the maximum prescribed in the Rules.

7. IMPLEMENTATION OF HINDI, INDUSTRIAL RELATIONS AND HUMAN RELATIONS

The company had very cordial industrial relations during the year. The management also initiated programmes for upgrading the skills of the employees. In order to ensure the use of Hindi, the employees continued to be trained in Prabodh, Praveen, Pragya Hindi Courses, Hindi typewriting and use of Hindi Computer. Hindi week was organized from 14th to 21st September, 2008. Various short-time training programmes and workshops were conducted for workers and officers during the year. Special workshops and

various competitions in Hindi were organized and awards distributed to the winner. Half-yearly Hindi Newsletter 'HAMARA CEL' was also published.

8. 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. Total number of employees in these categories was 181 which represent about 28.41% of the total strength of the Company as on 31.3.2011.