INTERVIEW: P SUDHAKAR

ACTING CHAIRMAN AND MANAGING DIRECTOR, ELECTRONICS CORPORATION OF INDIA LIMITED

'We are working to enhance localisation and value addition'

ELECTRONICS Corporation of India Ltd (ECIL), a Department of Atomic Energy enterprise, has recently received the Scope (Standing Conference of Public Enterprises) gold trophy for R&D, technology development and innovation. Since its inception in 1967, ECIL has created an array of innovative electronics and information technology sector products like solid state television, digital computers, cockpit voice recorders (known as black box), electronic voting machines, programmable logic controllers, earth station and deep space network antennas. P Sudhakar, *acting chairman and managing director of ECIL, feels ECIL is the 'icon of self-reliance in electronics'. In an interview with* **BV Mahalakshmi** *of* FE, *Sudhakar says ECIL is committed to establishing itself as a Centre of Excellence in strategic electronics and maintaining its position in the OEM space with its own products. Excerpts:*

What are the key R&D activities that helped ECIL in developing indigenous technologies for strategic sectors like atomic energy, defence, aerospace and security?

ECIL has been a technology partner in every landmark event in the nation's scientific and technological endeavours. We have recently introduced several products in the market which have their origin in the R&D laboratories of ECIL. The new-generation programmable logic controller (PLC) offers a totally indigenous solution to meet the need for secure automation. This product is a timely addition to ECIL's portfolio as the Indian nuclear programme is on an expansion course and there is an increasing need for a product that can meet the secure, reliable automation needs of the strategic sector.

ECIL, in partnership with national laboratories and academic institutions, has been working strenuously to strengthen the information security technologies in the country. The recently introduced ECR-1000 series carrier ethernet switch router, secure network access system and integrated threat management appliance are the fruits of this technology development that enhances the nation's information security. We have also developed command and control systems that are deployed extensively in the country's missile programme.

What are the driving factors fuelling self-reliance in technologies, right from small sensors to final control?

ECIL has been a technology-driven company right from its inception, with the spirit of innovation inherited from its parent organisation, BARC. ECIL has been the icon of self-reliance in strategic electronics. ECIL being a supplier of equipment for defence, nuclear, aerospace and security applications, its R&D focuses on state-of-the-art product development, Indian IPR, obsolescence management, refurbishment, import substitution and technology denial regime management. R&D activities are focused on providing indigenous technology solutions to strategic sectors—where technology independence, self-reliance and security are the key drivers—and enhancing localisation and value addition in existing product mix.

Can you briefly detail some of the products brought out by ECIL across various segments?

ECIL has recently introduced a number of products in the market originated from its R&D laboratories. The new generation programmable logic controller (PLC) offers a totally indigenous solution to meet the need for secure automation. ECIL's C4I systems and Missile Checkout Facility are complex, ruggedised computer-based systems which are being deployed in the country's missile programmes.

The new electronic voting machine (EVM) mark-II for the Maharashtra State Election Commission is another example of an appropriate technology solution that incorporates enhanced security features while retaining the simplicity and ruggedness of the time-tested EVMs. The voter verifiable printer audit trail system is an innovative add-on to the EVM, which enhances the verifiability of the voter without diluting the integrity and simplicity of the voting process.

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ECIL has developed a portable smart card reader that can be used to authenticate the live biometric data of the cardholder with information in the Resident Identity Card to establish the identity of the cardholder. This device has extensive application in border control, law enforcement, public distribution system and other government schemes. Another recent innovation includes Pramanika, a portable smart card reader.

What is the R&D budget, current revenues and the order book size of ECIL?

We have established ECIL as a centre of excellence in strategic electronics. ECIL's expenditure on R&D and infrastructure upgradation as per Plan-XII is budgeted at about ₹450 crore. Besides, ECIL is receiving a grant of ₹15-20 crore from the DAE annually for undertaking R&D in areas of interest it. The focus of R&D is two-fold which include indigenous technology solutions to strategic sectors where technology-independence, self-reliance and security are the key drivers. Besides, we are working to enhance the localisation and value addition in existing product mix. We hope to cross ₹2,000 crore in turnover. The current order book size stands at ₹1,800 crore, to be completed over a three-year period.

How many technologies have reached the commercialisation stage?

ECIL focuses its R&D efforts in the areas of strategic electronics, which are critical for maintaining the nation's security and hence the products are for meeting the country's strategic requirements. However, the commercial success of these products, measured by the amount of turnover and profits generated by the products over their life-cycle, is significant. The EVMs can readily be recognised as a commercial success by the general public. The C4I Systems for missiles which are used by the armed forces is a commercial success and has been contributing significantly to ECIL's turnover in the recent years and will continue to do so for several more years.

Radiation Detection Equipment developed by ECIL are currently being deployed at several seaports in India. Similar equipment are also likely to be deployed at many airports and land ports (international border crossings). This equipment would be a significant revenue contributor for the next few years.

Control and Instrumentation equipment developed for nuclear plants, both power generation and fuel processing, have been contributing a large share of ECIL's turnover ever since its inception. The C&I equipment are developed in close cooperation with other DAE organisations like BARC, IGCAR, RRCAT, etc. Further the products emerging out of such collaboration are also being exported for international science programmes. The Large Hadron Collider project of CERN Switzerland is one such project. Further exports are in the pipeline for the International Thermonuclear Experimental Reactor project in France and to the Facility for Antiproton and Ion Research in Germany. Access control systems have also been contributing significantly to the revenue of ECIL for the last several years.

What is the business potential of these products, in the domestic and export markets?

The business potential of the R&D products is very huge. However, given the extremely high rate of obsolescence in electronics, we have to continuously invest in upgrade of existing products and development of new products to meet the emerging requirements. The company is alive to such environmental shifts and the R&D board of ECIL, which includes technical experts from nuclear, defence and aerospace establishments, constantly monitors the shifts and changes in preferences and determines the technologies and products the R&D of the company should focus on.

While the export potential of R&D products is very high, the strategic nature of the products requires that the decision regarding exports be taken at a very high level in the strategic establishment.

HEAVY ENGINEERING CORPORATION

Hobbled by outdated technology

Company proposes ₹760-crore modernisation plan to fuel growth

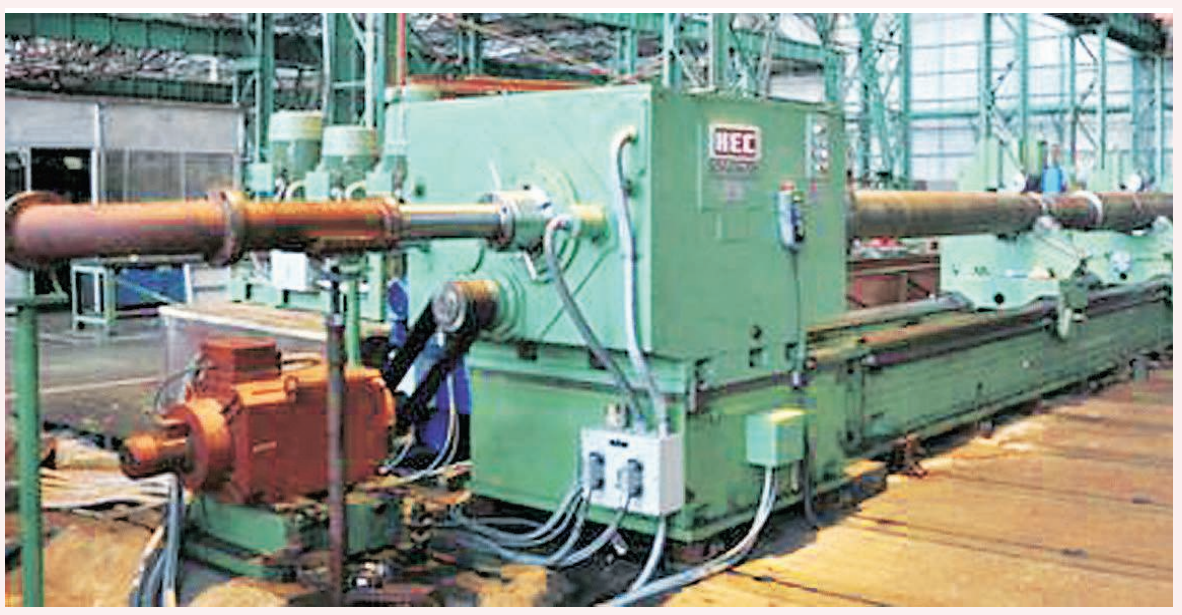
Arindam Sinha

RANCHI-based Heavy Engineering Corporation (HEC), which basically caters to the steel and coal sectors, looks for a technological upgrade to propel its growth. The corporation has submitted a ₹763-crore plan to the department of heavy industries for the modernisation of the installed plant & machinery which has now become obsolete.

There has been no capital investment in HEC in the last 40-odd years, which has the company running on outdated technologies. The efficiency of most plant & machinery has come come down to 40%, leading to frequent breakdowns. Unavailability of spares has further complicated things for the company.

An electric arc furnace (for melting metals) installed in the company long ago today takes 7-8 hours for each heat, whereas a new-tech arc furnace would take only around 80-90 minutes. This way the company is losing out hugely on productivity since, as compared to only one heat being achieved in a shift today at the company's furnace, a modern arc furnace is capable of carrying out at least five heats during the same time (in a shift). Likewise, other plant & machinery in the company too needs urgent renovation or upgrade.

> Use of LPG, instead of coal, would result in a paradigm shift once the capital infusion took place
>
> **R Misra**
> Chairman and managing director, HEC



"Unless investment is made on an urgent basis in new-tech plant & machinery there is no possibility of the company's turnover showing an annual 25%-30% increase, which the company is looking forward to," said R Misra, chairman and managing director of HEC.

It is estimated that in order to survive on a long-term basis, HEC has to achieve a net profit of at least ₹100 crore against the current net profit trend of ₹12.21 crore and ₹8.58 crore, achieved in 2011-12 and 2012-13.

Incorporated in 1958, HEC, after several years of running in losses, earned a profit of ₹2 crore in 2006-07 on a turnover of ₹304 crore and has since been in the black.

"We have sent a ₹763-crore tech-upgrade proposal and also filed a pre-feasibility report with the department of heavy industries. Apart from renovation /upgradation of plant & machinery, use of LPG, instead of coal, would also result in a paradigm shift once the capital infusion took place," Misra told *FE*.

Misra is hopeful of a favourable decision from the government in the current fiscal.

"I am optimistic that HEC's proposals would be approved by the government of India by December this year or at least before March next year, as several departments are involved. Once the investment i s in place, HEC's turnover could double to around ₹1,500 crore from the ₹739 crore it achieved in 2012-13", Misra said.

HEC's order book as on April 1, 2013 stands at ₹1,500 crore. The company has set a turnover and net profit target of ₹1,001 crore and ₹40.71 crore respectively for the current financial year. "HEC can become a disinvestment candidate in two years' time from completion of the proposed capital expenditure, which is expected to be over by the last year of the 12th Five-Year Plan," Misra said.

GRAPEVINE

Refined and redefined

IndianOil is making its presence felt in refining technology. The company's R&D division has developed a new technology that might well prove a game-changer of the bio-diesel business. Through this technology, natural diesel can be produced by processing Jatropha oil in a petroleum refinery along with crude oil. This eliminates the need for separate bio-diesel plants and saves on costs by 50%. What is more, the clean fuel so produced can be used in automobiles without any change in engine configuration. **RK Malhotra**, director (R&D), IOC, is on cloud nine these days.

A long wait

The Centre's move to introduce a policy of minimum three-year tenure for all PSU chiefs irrespective of their age should go some way towards easing the crunch of experienced personnel in CPSEs.
But on the flip side, it might make the wait longer for those aspiring for these coveted posts. It could be a source of eternal heartburn for those caught on the wrong side of age.