Board of Directors

Rama Prasad Goenka, *Chairman*
Sanjiv Goenka, *Vice-Chairman*
Pradip Kumar Khaitan
Brij Mohan Khaitan
Bhagwati Prasad Bajoria
Srinivasan Kothandaraman Vidyanathan Srinivasan
(Nominee of IDBI)
Sumantra Banerjee, *Managing Director*

Vice President & Company Secretary
Subhasis Mitra

Auditors
Lovelock & Lewes

Solicitors
Khaitan & Co.
Sandersons & Morgans

Registered Office
CESC House
Chowringhee Square
Kolkata 700 001
Telephone : (033) 2225 6040
Facsimile : (033) 2225 5155
E-mail : cesc@cesc.co.in
Website : www.cesc.co.in

Bankers
ABN Amro Bank N.V.
Allahabad Bank
Andhra Bank
Axis Bank Limited
Bank of Baroda
Bank of India
HDFC Bank Limited
ICICI Bank Limited
IDBI Bank Limited
Indian Overseas Bank
Punjab National Bank
Standard Chartered Bank
State Bank of India
UCO Bank
Union Bank of India
United Bank of India
YES Bank Limited

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Cover

A night view of Kolkata with the
Victoria Memorial as the centre of attraction

Notice to Members

Notice is hereby given that the Thirty-third Annual General Meeting of the Members of CESC Limited will be held at CITY CENTRE, Royal Bengal Room, DC Block, Sector-1, Salt Lake, Kolkata – 700 064, on Friday, 29 July 2011 at 10.30 A.M. for the following purposes :

1. To receive and consider the Profit & Loss Account for the year ended 31 March 2011, the Balance Sheet as at that date and the Reports of the Directors and the Auditors.
2. To declare Dividend.
3. To appoint a Director in place of Mr. B. M. Khaitan who retires by rotation and, being eligible, offers himself for reappointment
4. To appoint a Director in place of Mr. S. Banerjee who retires by rotation and, being eligible, offers himself for reappointment.
5. To appoint Auditors and to fix their remuneration and for the purpose to consider and, if thought fit, to pass with or without modification, the following Ordinary Resolution :

   "RESOLVED THAT the retiring Auditors, Messrs. Lovelock & Lewes (Firm Registration Number 301056E), be and they are hereby reappointed Auditors of the Company to hold office from the conclusion of this Annual General Meeting until the conclusion of the next Annual General Meeting of the Company at a remuneration of Rs. 35,00,000/- payable in two equal instalments plus service tax and reimbursement of out-of-pocket expenses"

SPECIAL BUSINESS

To consider and, if thought fit, to pass, with or without modifications, the following Resolutions :

6. **AS AN ORDINARY RESOLUTION**

   "RESOLVED THAT the consent of the Company be and is hereby accorded in terms of Section 293(1)(a) and other applicable provisions, if any, of the Companies Act, 1956 to mortgaging and / or charging by the Board of Directors of the Company ("the Board") of all the immovable and movable properties of the Company, wheresoever situate, present and future, in favour of Standard Chartered Bank (SCB) for its foreign currency loan of US$ 45 million to secure the said foreign currency loan together with interests, charges, expenses, front-end fees and all other monies payable by the Company to SCB, in terms of the Letter of Sanction, Facility Agreement, Hypothecation Agreement, or any other Agreement or any amendment thereto entered / to be entered into by the Company with SCB so that the mortgage and / or charge may be created by the Company in favour of SCB, in such form and subject to such prior charge or with such pari passu or subservient ranking of charge as may be decided by the Board in consultation with SCB.

   AND FURTHER THAT the Board be and is hereby authorised to finalise and execute with SCB all such deeds and documents for creating the aforesaid mortgage and / or charge and to do all such acts, deeds and things as may be deemed necessary for giving effect to the aforesaid Resolution."

   The Register of Members of the Company at Kolkata will remain closed from 16 July 2011 to 29 July 2011, both days inclusive.

Registered Office :	By Order of the Board
CESC House	
Chowringhee Square	
Kolkata - 700 001.	Subhasis Mitra
24 June 2011	*Vice President & Company Secretary*

NOTES :

1. A member entitled to attend and vote at the meeting is entitled to appoint a Proxy to attend and vote in his stead. A Proxy need not be a Member of the Company. Proxies, in order to be effective, must be received by the Company not less than 48 hours before the time for holding the Meeting.
2. An Explanatory Statement pursuant to Section 173(2) of the Companies Act, 1956 in respect of the Special Business under item 6 is annexed hereto.
3. If the dividend as recommended by the Board of Directors is declared at the Meeting, it will be payable to those shareholders whose names appear on the Company's Register of Members, or, who are notified as beneficiaries by the Depositories viz. National Securities Depository Limited and Central Depository Services (India) Limited at the close of business on 15 July 2011.
4. Members holding shares in physical form may intimate the Company updated particulars for ECS / NECS credit of the dividend directly to their bank accounts wherever ECS / NECS facility is available, or, for printing of their bank account details on the dividend warrants to prevent possibilities of fraud in encashing the warrants. For this purpose, members are requested to fill in the form appended to the Attendance Slip and send the filled in Form to the Secretarial Department of the Company latest by 15 July 2011. In respect of the shareholdings in demat form, any change in the Bank particulars should be intimated to the Depository Participants (DP) immediately so that the changed particulars may be used for dividend payment. Any change in the particulars of shareholders holding shares in electronic form is to be notified to the DP only.

5. CESC is active in its efforts to preserve the environment and has been working on a number of ways to reduce usage of paper. In line with the recent circular of the Ministry of Corporate Affairs, Government of India, the Company now proposes to send to its members notices, annual reports and accounts and other communication through electronic mode. Members are, therefore, requested to update their e-mail address with the Depository Participant, if the holding is in electronic mode. If the holding is in physical form and the member concerned wishes to receive notices etc. electronically, details of the e-mail address should be forwarded to the Company by sending an e-mail at **greeninitiative@cesc.co.in**. If so desired, the aforesaid communication can alternatively be obtained in physical form the Company free of cost, upon request.

PARTICULARS OF DIRECTORS WHO ARE PROPOSED TO BE REAPPOINTED AT THE MEETING ARE GIVEN BELOW :

MR. B. M. KHAITAN, 83 years, is a renowned industrialist having interest in tea, batteries and engineering industries. Mr. Khaitan has great contributions to the tea industry with which he has been associated for over five decades.

Mr. Khaitan is the Chairman of Williamson Magor & Company Limited, Eveready Industries India Limited and Mcleod Russel India Limited and is a Director of Babcock Borsig Limited and Jayshree Tea & Industries Limited (also Chairman of Remuneration Committee). He is on the Board of Directors of CESC since 1994 and is a member of its Audit Committee.

Mr. Khaitan does not hold any share in the Company.

MR. S. BANERJEE, 61 years, holds B. Tech (Hons.) from Indian Institute of Technology, Kharagpur, MS and MBA degrees and is the Managing Director of the Company since 1 August, 1993. He has 38 years of experience in India and abroad in manufacturing, engineering, finance, marketing and general management functions.

Mr. Banerjee, President and Chief Executive of RPG Power and Retail Groups, is on the Boards of Dhariwal Infrastructure Limited, Noida Power Company Limited, Saregama (India) Limited (also Member of its Audit Committee and Investor Grievance Committee), Au Bon Pain Café India Limited, Myriad Ventures Private Limited, Spencer International Hotels Limited, and Mahuagarhi Coal Company Private Limited. He is a member of Investors' Grievance Committee and Finance & Forex Committee of CESC Limited.

Mr. Banerjee does not hold any share in the Company.

EXPLANATORY STATEMENT PURSUANT TO SECTION 173(2) OF THE COMPANIES ACT, 1956 IN RESPECT OF ITEM OF SPECIAL BUSINESS SET OUT IN THE NOTICE CONVENING THE THIRTY-THIRD ANNUAL GENERAL MEETING OF THE COMPANY TO BE HELD ON 29 JULY 2011

Item No. 6

The Company has entered into an agreement with Standard Chartered Bank (SCB) to avail financial assistance of US$ 45 million to meet a part of its routine capital expenditure.

The above financial assistance, in terms of its sanction, is required to be secured by mortgage / charge over the Company's immovable and movable properties in the form and manner required by SCB.

The Ordinary Resolution set out under item No. 6 of the Notice is for obtaining the approval of the Members in terms of the provisions of Section 293(1)(a) of the Companies Act, 1956 to enable the Company to create the aforesaid mortgage and / or charge. The Board of Directors of the Company recommends that the Resolution be passed.

None of the Directors of the Company is concerned or interested in the Resolution.

Registered Office :	By Order of the Board
CESC House	
Chowringhee Square	
Kolkata - 700 001.	Subhasis Mitra
24 June 2011	Vice President & Company Secretary

Chairman's Letter

Dear Shareholder

As I wrote in last year's annual report, India is back on the growth path. Of course, there are different views about this growth — whether we can soon transit to over 9%, or whether we will be hovering around the 8% mark until we conquer infrastructural bottlenecks, or the extent to which growth prospects can get affected by persistent inflation and consequential increases in the interest rate by the Reserve Bank of India. All of us are debating these issues. However, nobody that I know of denies the fact that India has smartly recovered from the consequences of the global financial and economic crisis; and that there is enough entrepreneurial energy throughout the country to generate at least 8% real GDP growth.

There is another thing that none can deny. It is the terrible shortage of power throughout India, and the urgent need to build — and get on stream — thermal, hydro, nuclear and renewable power plants with associated transmission and distribution infrastructure throughout the land.

Consider the facts. In 2010-11, India as a whole suffered from a peak demand deficit of 9.8%. Every region faced power deficits. Among the more industrialised parts of the nation, Western India was the worst off with a peak demand deficit of 14.7%; followed by Northern at 8.9%; then Southern at 6.4%; and Eastern at 5%. The worst was the North East where the peak deficit was 18.5%.

There are three reasons for this universally persistent shortfall. First, generation capacities have not grown fast enough. Indeed, the difference between planned and actual is huge. For instance, the actual cumulative capacity addition over the last five years is around 50% of what was planned. Second, the transmission infrastructure remains weak. Despite efforts to achieve better grid connectivity, there is a major gap between targets and achievement. Third, distribution still remains an area of concern in most parts of India. Distribution loss, in monetary terms, is huge.

If India is to achieve consistent 9% plus GDP growth over the next decade, it has to improve the power infrastructure at a rapid pace. Yet, as it stands today, there are some critical constraints. Let me share with you a few of these. Despite the seeming investment boom in the power sector, I am concerned about some issues.

In the first place, most of the private sector thermal power projects were based on assumptions of high merchant power tariffs and off-take. The rates have crashed, typically to levels well below those that were assumed in preparing the feasibility studies. Thus, the presumed basis for profitability of many private power projects — where high merchant tariffs and demand would more than compensate for low state electricity board (SEB) tariffs and payouts — seems to have got stuck. Merchant power is offering less per unit than anticipated; and most SEBs have neither the money nor the financial ability to adequately pay for power. Thus, power projects that planned for a blended tariff rate of over Rs.3.60 per unit are under risk; and those who planned at Rs.5 and above are completely unviable.

Then there is the issue of coal linkage. As many thermal power projects are discovering to their dismay, coal linkages often exist only on paper — but not in reality. Moreover, with steady increase in coal prices world-wide and with India's largest public sector supplier of coal having become more income sensitive now that it is a listed company, the price of coal is getting higher than planned. And the existing buyers of power are not necessarily interested in underwriting that higher price.

Finally, there is the problem of grid connectivity. Even if a power plant got assured coal, it would have to connect its perishable product to the national grid. That is proving to be a problem in many regions, especially remote power plants that, while being close to mine pitheads, are far removed from the main inter-state transmission lines.

Power, therefore, is an opportunity — but not an opportunity for all and sundry. One has to know the business; one has to have serious expertise; one must have adequate 'back-stops' at all levels; and, ideally, one has to own the distribution.

This is where your Company scores over many others. CESC generates as well as distributes. Its generating stations at Budge Budge, Southern, Titagarh and New Cossipore cumulatively generate 1,225 MW, which feeds into the Company's distribution grid for meeting the power needs of Kolkata and its neighbourhoods. CESC is a utility company that services over 2.5 million customers. Last year alone, it added around 1.2 lakh customers — an increase of over 25% over the previous year. In spite of a significant increase in peak demand to 1,686 MW, your Company was able to maintain its high standards in the availability and reliability of power.

It is this combination of generation and distribution that has allowed your Company to be relatively insulated from the increasing uncertainties of the power sector which I have outlined above.

Consequently, CESC has done well financially. During 2010-11, your Company's earnings from sale of electricity increased by 19.7% over last year to reach Rs.3,940 crore. Including other income, total income grew by 18.7% to Rs.4,092 crore. Profit before depreciation and taxation (PBDT) grew by 21.2% to Rs. 882 crore during the year. Profit after taxes (PAT) for 2010-11 increased by 12.7% to Rs.488 crore. These are sound results.

The 2 x 300 MW coal fired thermal power project at Haldia (West Bengal) is progressing well. All requisite clearances and investment approval are in place. Coal linkages have been secured. The project is scheduled to be completed by the end of 2013-14. The 2 X 300 MW coal fired thermal power project at Chandrapur (Maharashtra) is also progressing according to schedule. We have also entered the solar energy space at Bikaner (Rajasthan), to understand the business and create necessary expertise in an area that promises to be significant in the future.

May I, on behalf of you and the Board of Directors, congratulate your Company's management for achieving strong financial and operational results in 2010-11? I feel proud of being the Chairman of an enterprise that does so well in power generation and distribution. May it progress. Finally, my thanks to you for your support and good wishes.

R P Goenka

24 June 2011 Chairman

Directors' Report

The Directors have pleasure in presenting the Annual Report and Audited Accounts of CESC Limited for the year ended 31 March 2011.

Financial Results *(Rs. Crores)*

Particulars	**2010-11**	**2009-10**
Earnings from Sale of Electricity	3939.85	3292.84
Other Income	152.44	156.20
Total Income	**4,092.29**	**3,449.04**
Profit before Depreciation & Taxation	881.62	727.69
Depreciation	(267.37)	(205.64)
Taxation	(125.85)	(88.75)
Profit before transfer to Reserves	**488.40**	**433.30**
Profit brought forward from previous year	**133.56**	**125.91**
Reserve for unforeseen exigencies	(23.47)	(17.38)
General Reserve	(350.00)	(350.00)
Proposed Dividend @ Rs. 4 per Equity Share & tax thereon	(58.08)	(58.27)
Leaving a balance carried forward	**190.41**	**133.56**

Performance Overview

During the year under review, the Company's earnings from sale of electricity increased by 19.65% over last year to reach Rs. 3939.85 crore. Including other income, total income grew by 18.65% from Rs. 3449.04 crore in 2009 - 10 to Rs. 4092.29 crore in 2010 - 11. Profit before depreciation and taxation (PBDT) grew by 21.15% to Rs. 881.62 crore during the year. After providing for depreciation of Rs. 267.37 crore and taxation of Rs. 125.85 crore, the profit after taxes (PAT) for 2010 - 11 stands at Rs. 488.40 crore, which reflects a 12.72% increase over Rs. 433.30 crore during 2009 - 10.

A detailed review of the operations for the year ended 31 March 2011 is given in the Management Discussion & Analysis, which forms a part of this Report.

Dividend

The Board is pleased to recommend payment of equity dividend for the year ended 31 March 2011 at the rate of Rs. 4 per share on the paid-up equity share capital as on that date (Rs. 4 per share in 2009 - 10). The dividend is proposed to be paid to those shareholders whose names appear in the Register of Members of the Company, or appear as beneficial owners as per particulars furnished by the Depositories at the close of business on 15 July 2011. No tax on the said dividend will be payable by the shareholders - as required, the Company will pay appropriate tax thereon.

Subsidiaries

As on 31 March 2011, CESC had ten subsidiaries: Spencer's Retail Limited, Au Bon Pain Cafe India Limited, Music World Retail Limited, CESC Infrastructure Limited, Haldia Energy Limited, Dhariwal Infrastructure Limited, Surya Vidyut Limited, CESC Properties Limited, Metromark Green Commodities Private Limited and Nalanda Power Company Limited. Since the close of the year, two more subsidiaries had been formed namely Bantal Singapore Pte Limited and CESC Projects Private Limited.

The details of operations of subsidiaries are given in the section 'New Projects' under 'Power Business' and the section 'New Businesses' in the Management Discussion & Analysis, which forms a part of this report.

In accordance with the general exemption granted by the Central Government under Section 212(8) of the Companies Act, 1956, ('the Act') the accounts of the subsidiaries for the year 2010 - 11 and the related detailed information will be made available to the holding and subsidiary companies' shareholders seeking such information at any point of time and are not attached. Copies of the annual accounts of the subsidiary companies will also be kept open for inspection by any shareholder in the Registered Office of the Company and of the subsidiary companies concerned. The Company shall furnish a hard copy of accounts of subsidiaries to any shareholder on demand. The Company publishes Consolidated Financial Statements of the Company and its subsidiaries duly audited by Messrs. Lovelock & Lewes, Auditors, prepared in compliance with the applicable Accounting Standards and the Listing Agreements with the Stock Exchanges. The Consolidated Financial Statements for the year 2010 - 11 form part of the Annual Report and Accounts.

CESC is concerned about the environment and takes various steps for its protection. In line with the decision of the Ministry of Corporate Affairs, Government of India, the Report and Accounts and other communication from the Company are, from now on, sent to the shareholders by e-mail, wherever such addresses are registered with the Company.

Projects

Currently, four power generation projects are being executed by various CESC subsidiaries — thermal generation project at Haldia, Chandrapur and Bhagalpur as well as a solar power project in Rajasthan. CESC itself is carrying out a number of projects to enhance its distribution capabilities and to conserve the environment.

Further details on these projects have been provided in the relevant sections of the Management Discussion & Analysis, which forms a part of this report.

Awards

During the year, your Company won the following awards :

1. Budge Budge generating station received Gold Award for best environmental performance power plant of the year in Asian Power Awards 2010 organised by Asian Power Magazine, Singapore.
2. In recognition of its safety record and initiatives, Southern generating station was awarded with 'Greentech Gold Award for Safety – 2011' by Greentech Foundation.
3. In recognition of its safety record and initiatives, New Cossipore generating station was awarded with 'Greentech Silver Award for Safety – 2011' organised by Greentech Foundation.

Directors

In terms of provisions of Section 256, read with Section 255 of the Act and Article 102 of the Articles of Association of the Company, Mr. B. M. Khaitan and Mr. S. Banerjee, Directors, retire by rotation at the forthcoming Annual General Meeting and, being eligible, offer themselves for re-appointment. The necessary resolutions for obtaining approval of the Members have been incorporated in the notice of the forthcoming Annual General Meeting. The requisite disclosure regarding the re-appointment of the above Directors has been made in the Report of Corporate Governance which forms a part of the Directors' Report.

Mr. R. K. Misra, who was appointed by the Government of West Bengal as its nominee, ceased to be a Director of the Company with effect from 31 March, 2011. ICICI Bank Limited has withdrawn its nominee, Mr. Ajay Saraf, effective 21 June 2011. The Board places on record its appreciation of the valuable contribution made by Mr. Misra and Mr. Saraf, during their tenure as Directors.

Listing

The equity shares of your Company continue to be listed at the Bombay Stock Exchange (BSE), the National Stock Exchange (NSE), the Calcutta Stock Exchange (CSE) and the London Stock Exchange. The Company has paid the requisite listing fee to the Stock Exchanges up to the financial year 2011 - 12.

Directors' Responsibility Statement

Pursuant to Section 217(2AA) of the Act, your Directors hereby state and confirm that :

i) in the preparation of annual accounts for the financial year ended 31 March 2011, the applicable accounting standards have been followed along with proper explanation relating to material departures;

ii) appropriate accounting policies have been selected and applied consistently and judgments and estimates have been made that are reasonable and prudent so as to give a true and fair view of the state of affairs of the Company as at 31 March 2011 and of the profit for the period from 1 April 2010 to 31 March 2011;

iii) proper and sufficient care has been taken for the maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding the assets of the Company and for preventing and detecting fraud and other irregularities;

iv) the annual accounts for the financial year ended 31 March 2011 have been prepared on a going concern basis.

Promoter Group

Pursuant to intimation from the Promoters, the names of the Promoters and entities constituting 'group' are disclosed in the Annual Report for the purpose of the SEBI (Substantial Acquisition of Shares and Takeovers) Regulations, 1997.

Corporate Governance

A report on Management Discussion and Analysis is also attached herewith (Annexure 'A'). A separate Report on Corporate Governance (Annexure 'B'), along with Additional Shareholder Information (Annexure 'C'), as prescribed under the Listing Agreement with the Stock Exchanges, are annexed as a part of this Report along with the Auditor's Certificate.

Fixed Deposits

Your Company has not accepted any deposits within the meaning of Section 58A of the Act and, as such, no amount of principal or interest was outstanding as on the date of the Balance Sheet. 349 deposits aggregating Rs. 0.62 crore remained unclaimed as on 31 March 2011.

Auditors

Messrs. Lovelock & Lewes, Chartered Accountants, Statutory Auditors of the Company hold office till the conclusion of the forthcoming Annual General Meeting and being eligible, offer themselves for reappointment. The Company has received a letter from the Statutory Auditors to the effect that their reappointment, if made at the forthcoming Annual General Meeting, would be within the limits prescribed under Section 224 (1B) of the Act

Cost Audit

Messrs. Shome & Banerjee, Cost Accountants, were reappointed to conduct the audit of the cost accounting records of the Company for the year under review. The due date and the actual date of filing of cost audit report for the year under review had been 27 September 2010 and 13 September 2010 respectively.

Conservation of Energy, Research & Development, Technology Absorption, Foreign Exchange Earnings and Outgo

The information relating to conservation of energy, research & development, technology absorption and foreign exchange earnings and outgo, as required under Section 217(1)(e) of the Act read with the Companies (Disclosure of Particulars in the Report of Board of Directors) Rules, 1988 is given in Annexure 'D', forming a part of this Report.

Particulars of Employees

The information as required in accordance with Section 217(2A) of the Act read with the Companies (Particulars of Employees) Rules, 1975, as amended, is set out in an annexure to this Report. However, as per the provisions of Section 219(1)(b)(iv) of the Act, the Report and the Accounts are being sent to all the Shareholders of the Company excluding the aforesaid information. Any shareholder interested in obtaining such information may write to the Vice President & Company Secretary at the Registered Office of the Company. The said information is also available for inspection at the Registered Office during working hours up to the date of the Annual General Meeting.

Industrial Relations

A detailed section on your Company's Human Resource initiatives is attached in the Management Discussion & Analysis. During the year under review, industrial relations in your Company continued to be cordial.

Acknowledgement

The Board wishes to place on record its sincere appreciation for the continued assistance and support extended to your Company by its consumers, banks, vendors, Government authorities and employees.

Your Directors are also grateful for your continued support and encouragement.

On behalf of the Board of Directors

R. P. Goenka

Kolkata, 24 June 2011 — Chairman

CESC Limited ('CESC' or 'the Company) is a fully integrated power utility engaged in the generation and distribution of electricity across 567 square kilometres of licensed area in Kolkata and Howrah, West Bengal, since 1899. The Company supplies safe, cost-effective and reliable electricity to over 2.5 million customers — consumer households, commercial and industrial establishments. As a part of its strategy for diversification and long-term growth, the Company, through its subsidiaries, is also active in the organised retail sector and has recently ventured into real estate development.

This chapter presents an overview of the energy sector as well as details of operational and financial performance of the Company. It also discusses important initiatives taken by the Company during the year to achieve its growth and performance objectives.

ECONOMIC OVERVIEW

Global Energy Outlook

Insofar as energy consumption goes, the global economic crisis has certainly come to an end. After a decline of 0.9% in 2009 which was for the first time since 1981, global energy consumption increased by 5.5% in 2010 to 12,852 million tons of oil equivalent (Mtoe).

According to the World Energy Outlook 2010, world primary energy demand under the 'New Policies Scenario' will grow by around 4,500 Mtoe between 2008 and 2035, a CAGR of 1.2% (Chart A). These estimates take into account broad policy commitments and plans that have been announced by countries around the world to cut down on emissions. As expected, the demand in non-OECD will grow much faster, and will account for over 90% of this increase in energy demand.

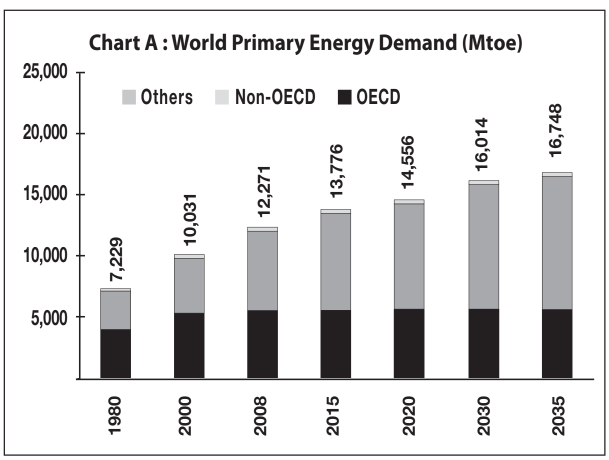

Chart A : World Primary Energy Demand (Mtoe)

Source : New Policies Scenario, World Energy Outlook 2010, IEA

Much of this increase in primary energy demand will come from China and India, which along with United States, are the top three consumers of energy in the world. Energy demand from China and India is expected to surge during this period to 5,142 Mtoe (Chart B) and they will account for over half the incremental energy demand between now and 2035. As a result, by 2035, these two countries will account for 30% of global energy demand, up from 15.6% in 2000.

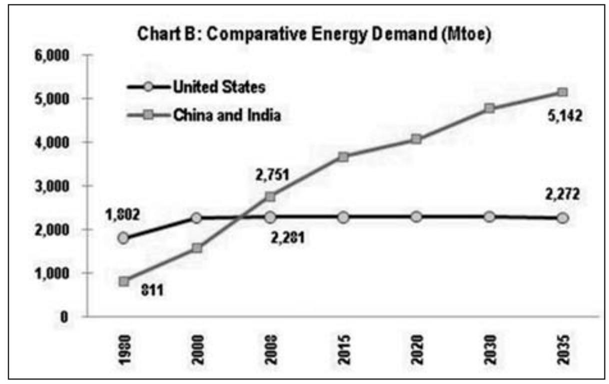

Chart B: Comparative Energy Demand (Mtoe)

Source : New Policies Scenario, World Energy Outlook 2010, IEA

Fossil fuels coal, oil and gas remain the dominant source of energy, meeting more than 80% of energy demand. Rising fossil-energy prices and increasing costs of carbon, together with policies to encourage energy savings and switching to low-carbon energy sources, will restrain demand growth for all three fossil fuels. Their share in the energy mix is expected to come down to 74% by 2035. However, most of this shift is only expected to take place around 2020. Until then, increase in demand for fossil fuels will continue to be high. And, although natural gas will be the fastest growing fossil fuel energy source, coal and oil will continue to be the dominant sources of energy contributing over 50% of the energy demand by 2035.

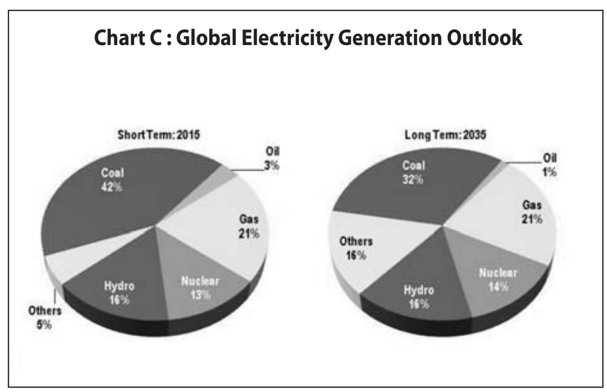

Chart C : Global Electricity Generation Outlook

Source : New Policies Scenario, World Energy Outlook 2010, IEA

The power sector accounts for 53% of the increase in global primary energy demand, with total capacity additions of 5,900 GW projected between 2008 and 2035. Coal remains the leading fuel for electricity generation, accounting for over 40% of total power generation, followed by gas, nuclear and hydro. As shown in Chart C, this dominance of coal is expected to continue, although its share will come down in the long term as policies favour use of other renewable sources such as solar, geothermal and wind.

India's Power Scenario

India is the world's fifth largest generator of power after US, China, Japan and Russia, with a total capacity of 174 gigawatt (GW) in

2010-11. Fossil fuels are the primary source of generation of electricity, accounting for 65% of the capacity. Coal accounts for over 50% of the total capacity (93.9 GW) and is the dominant fuel source. This is followed by hydro-electricity, which contributes 21.6% (or 37.6 GW) to the total power mix. With 4.8 GW of generation, nuclear power is still way below coal, hydro and gas, although it has started to slowly gain ground as an alternative fuel source (see Table 1).

Table 1 : Power Generation in India : 2010-11 : By Fuel Source

Fuel	MW	% share
Coal	93,918	54.1%
Gas	17,706	10.2%
Diesel	1,200	0.7%
Thermal	**112,824**	**65.0%**
Nuclear	4,780	2.8%
Hydro	37,567	21.6%
Others	18,455	10.6%
Total	**173,626**	**100.0%**

Source : Central Electricity Authority, March 2011

During the period April 2010 to March 2011, the all-India peak demand for power was 122 GW of power, whereas the actual power met was 110 GW – a shortfall of 9.8%. This all-India average, however, hides glaring fluctuations within regions (Table 2). The north-eastern and western regions are the worst affected in terms of availability of power.

Table 2 : Power Demand and Deficit : 2010-11

Region	Peak Demand (MW)	Peak Met (MW)	Deficit	Deficit %
Northern	37,431	34,101	-3,330	-8.9%
Western	40,798	34,819	-5,979	-14.7%
Southern	33,256	31,121	-2,135	-6.4%
Eastern	13,767	13,085	-682	-5.0%
North-Eastern	1,913	1,560	-353	-18.5%
All India	**122,287**	**110,256**	**-12,031**	**-9.8%**

Sources : Ministry of Power; Central Electricity Authority

Although this is an improvement over the last few years, the shortage in availability of power continues to be significant and can be attributed to three main reasons. First, the addition in generation capacities have been slow and below the planned targets. The cumulative achievement in capacity addition during the last five years has been around 50% of the targeted additions. Second, the transmission infrastructure continues to be a weak area despite efforts to achieve better grid connectivity. There is a significant gap between targets and achievement in upgrading the existing infrastructure. During 2009-10 and 2010-11, achievement of planned increase in transmission lines was 79.1% and 81.7% respectively. Finally, in spite of the unbundling of composite power providers and the creation of distribution companies, distribution remains an area of concern. Aggregate Technical & Commercial (ATC) losses vary widely across companies, but on an average, they are significantly above the 15% ceiling that has been recommended by the Accelerated Power Development and Reform Programme (APDRP)[1].

If India is to achieve double digit growth over the next few years, ramping up India's power infrastructure is of utmost importance. Besides, as economy grows, increase in the level of well-being will trigger significant increase in the consumer demand for electricity. India's per capita consumption of electricity, at around 734 kWh, is much lower than other developed and emerging economies. The US leads per capita consumption at around 15,000 kWh; China (with a population greater than India) has a consumption of around 1,800 kWh – approximately two and a half times that of India[2].

Meeting this demand will require significant investments. According to CRISIL Research estimates, about Rs. 750,000 crore is likely to be invested in the power sector by 2013-14, of which Rs. 480,000 crore is expected to be invested in power generation. This quantum of investment can only take place with large scale private sector participation in this business. It is expected that nearly half of these investments would have to emanate from private power players, thus giving rise to new opportunities for growth[3].

POWER BUSINESS

CESC's operations in the sector comprise generation and distribution of electricity to its 2.5 million customers across 567 square kilometres of licensed area in Kolkata and Howrah, West Bengal. Demand for power across the licensed area is quite variable depending upon the time of the day, with peak period demand higher than 1,600 MW and a lean period demand as low as 550 MW. During peak demand period, CESC in addition to its own generation, also purchases power from the state and national power grid. Conversely, during the lean period, CESC exports surplus production, when possible.

Generation

CESC operates four generating stations: Budge Budge, Southern, Titagarh and New Cossipore, which cumulatively generate 1,225 MW. Three of these stations (Budge Budge, Southern and Titagarh) use pulverised fuel (PF) as the primary energy source. CESC puts best effort for maximisation of own generation to supply the customer uninterrupted, reliable and cost effective power. In spite of the different age, capacity and technologies of the four generating stations, CESC has excelled to achieve the best possible results, some of which are nationally and internationally benchmarked.

[1] *Source: Planning Commission, Approach Paper to 11th Five Year Plan.*

[2] *Source : KPMG : Power Sector in India : White paper on Implementation : Challenges and Opportunities, Jan 2010.*

[3] *Source : CRISIL Research : Power Annual Review – Opinion; Aug 2009 : quoted in KPMG White Paper.*

Table 3 gives the details of installed capacity, generation and plant load factor (PLF) for the year 2009-10 for the three pulverised fuel plants.

Table 3 : Details of CESC's Generating Stations for 2010-11

Generating Stations	Installed Capacity (MW)		Generation (MU)		Plant Load Factor (PLF) %	
	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10
Budge Budge	3*250 MW	3*250 MW	5,439	4,286	82.78%	93.75%
Titagarh	4*60 MW	4*60 MW	1,866	1,889	88.76%	89.84%
Southern	2*67.5 MW	2*67.5 MW	1,089	1,102	92.06%	93.15%

Output from a power plant is measured by Plant Load Factor (PLF) which is the ratio of actual power produced to the maximum power producing capacity. CESC's composite Plant Load Factor (PLF) of the three PF plants was 85.2% for 2010-11 – well above the national average of 75.1% for thermal plants. To achieve this high PLF, the Company has taken various steps and measures like full utilisation of designed limit, benchmarking with top in class power plants, integrated operation and maintenance planning and exploring the fullest export opportunity. Export of power, after meeting consumers' demand, however, is totally dependent on the commercial viability of selling power in low demand hours. Low export demand during this year caused a small drop of overall PLF compared to previous years.

Budge Budge

Budge Budge is CESC's newest power generation plant, which comprises three units of 250 MW each. The first two units are little over a decade old and the third unit started commercial from February 2010. 2010-11 was the first full financial year of operation of all three units. During the year, Budge Budge generated 5,439 MU (million units) of power, with a PLF of 82.78% and a Plant Availability Factor (PAF) of 91.89%. This represents an increase in generation by 1153 MU, which is almost a 27% rise compared to the previous year.

Titagarh

CESC's Titagarh station generated 1,866 MU of power during the year, with a PLF of 88.76% and a PAF of 96.77%. The station could generate these efficiencies in spite of its age (twenty eight years) which bears ample testimony to the continuous and rigorous maintenance programmes that CESC conducts.

Southern

Southern generated 1,089 MU of power during the year under review, with a PLF of 92.06% and a PAF of 96.53%. Various energy savings initiatives, energy audits, in-house refurbishment/renewal of major energy consuming equipment, adopting industry best practices and other similar measures are being undertaken at Southern.

New Cossipore

The Company's generating station at New Cossipore was established way back in 1950. Yet, the sixty one year old station generated 363 MU of power with a PAF of 83.2% during the year, thus extending reliable support to the system during peak hours.

Improvement of Availability

In spite of the commissioning hurdles of Budge Budge generating station's new unit, an overall availability of 93.5% could be achieved for our PF stations. The entire maintenance planning has been structured : (a) to reduce forced outages; and (b) to reduce the capital overhauling time.

To reduce forced outages, CESC has adopted a number of measures. This includes detailed failure analysis of each failure, taking appropriate corrective actions or process modification to eliminate such failure, mean time before failure (MTBF) analysis and benchmarking, time bound action plan, periodic inspection schedules for all units and adopting integrated condition monitoring of dynamic equipment with sophisticated hardware and software. To reduce the time in case of boiler tube leakage failure, the Company has undertaken steps like sliding pressure operation and introducing tackles like sky climbers.

To reduce the capital overhauling time, CESC has introduced a 'round the clock maintenance' regime, modular replacement of components. The time saving technique of forced air cooling system to cool down the turbine in a very short time has also yielded satisfactory results.

Energy Conservation and Quality

CESC's generating stations have also excelled in the field of energy conservation by achieving extremely low figures for auxiliary consumption and heat rate. To achieve this, CESC regularly undertakes technical enhancements, following best practices and implementing recommendations of external energy auditors. During the year, several energy conservation measures were taken across locations. These included installation and refurbishment of energy saving equipment, process and equipment optimisation to save power, replacement of fluorescent lamps by energy saving LED lamps, and installation of solar PV modules.

All PF stations of CESC are ISO 9001:2008 certified in respect of Quality Management Systems. Various quality projects are undertaken and successfully implemented on a regular basis. During the year, the Company implemented a Kaizen initiative to inculcate a culture of continuous improvement among employees. The programme has been a great success and has achieved participation of all levels of employees. The winners are awarded on a monthly basis for promoting the culture and encouraging the participants.