

# OPTIMISING OUR RENEWABLE ENERGY POTENTIAL

ANNUAL REPORT 2015

# OUR VISION

A world-class commercial electricity utility enabling the social and economic development of the region

# OUR MISSION

We meet the expectations of our customers and stakeholders by :

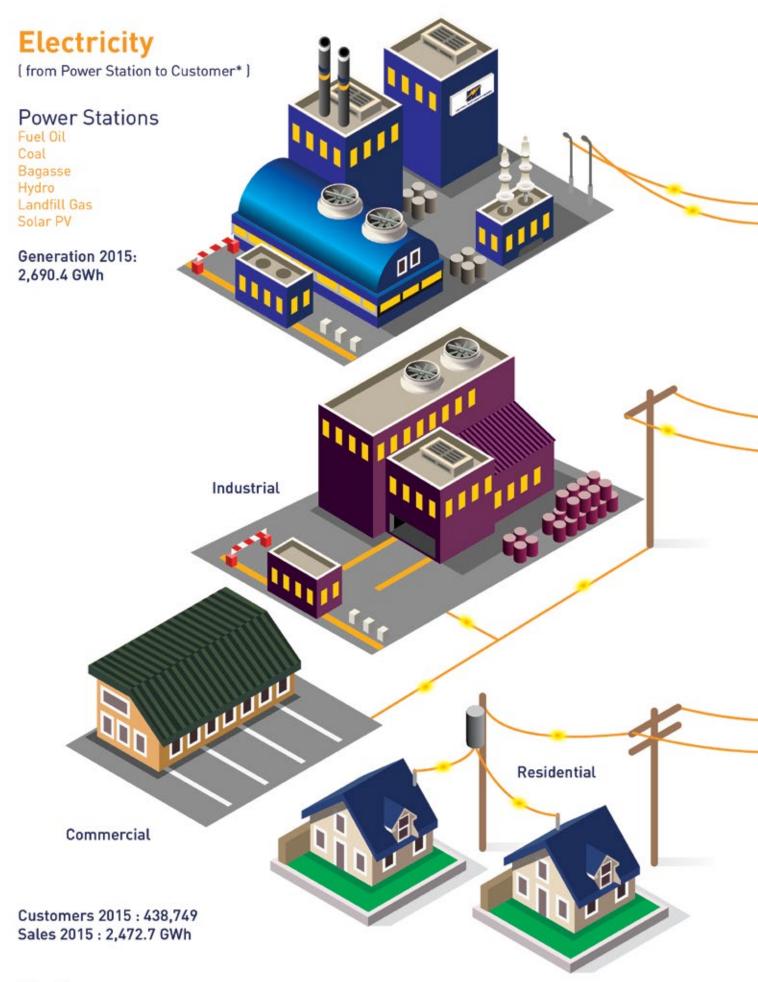
- Delivering prompt and efficient customer services
- Developing our employees and providing them with incentives
- Providing an affordable, safe, and reliable electricity supply
- Undertaking our business in an environmentally responsible manner
- Being the preferred employer in the region

# OUR CORPORATE VALUES

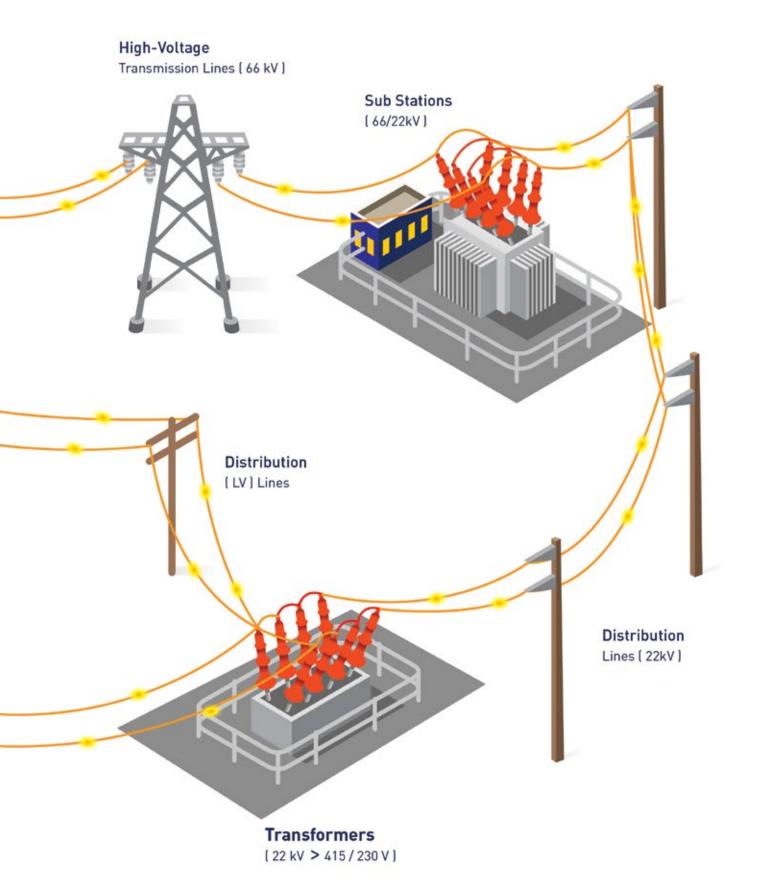
- Respect, Honesty and Loyalty
- Pride and Ownership
- Courteous, Excellent Service
- Superior Performance
- Team Culture

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\* Mauritius



## **CORPORATE PROFILE**

The Central Electricity Board (CEB) is a parastatal body wholly owned by the Government of Mauritius and reporting to the Ministry of Energy and Public Utilities. Established in 1952 and empowered by the Central Electricity Board Act of 25 January 1964, the CEB's business is to "prepare and carry out development schemes with the general object of promoting, coordinating and improving the generation, transmission, distribution and sale of electricity" in Mauritius and Rodrigues Island.

## HISTORY

The CEB was constituted on 8 December 1952 in accordance with the provisions of the first Central Electricity Board Ordinance 1951. It took over the functions and assets of the individual electricity undertakings operated by the Department of Electricity and Telephones, and the Electric Generating Power Company.

At the time of Independence in 1968, the national rural electrification program got under way. As the population increased and habitations cropped up all over the island, the CEB had to expand its networks to connect schools, water pumping stations, housing estates and allotments, as well as various industries.

As from the early 1970s, further network extension took place to supply new sectors such as tourism and textile. By 1981, the national rural electrification programme was completed, with about 153 villages and housing estates connected to the grid.

Over the years, the CEB has set a proven record of providing reliable, safe and affordable electricity supply to the country, through massive capital investment in new generation capacity and development of the electricity infrastructure. Today, Mauritius enjoys a more diversified economy, an extensive network of electricity supply facilities, and the benefits of a stable and continuous electricity supply.

CENTRAL ELECTRICITY BOARD ANNUAL REPORT 2015

CENTRAL

## VISION AND STRATEGIC OBJECTIVES

The vision of the CEB is to become a world-class commercial electricity utility enabling the social and economic development of the region.

The utility's main strategic objectives are:

- To ensure the sustainability of the business through balanced financial, social and environmental decision-making;
- To optimise the use of assets, resources and skills;
- To balance supply and demand of energy for security of supply;
- To exploit alternative and renewable sources of energy;
- To promote energy conservation; and
- To enhance customer service delivery.



## OUTLOOK

The needs of Mauritius in terms of energy will inevitably increase in the coming years, as the country strives to embark on a higher growth trajectory in a harshly competitive world economy.

Given the present state of technological development, in the years to come, we shall, unfortunately, continue to depend for the most part on fuel oil and coal for our energy mix. However, the key for a secure and sustainable energy future is to create a sufficiently broad energy portfolio, with more emphasis laid on renewable energy sources and the exploitation of alternative sources of energy, while being sensitive to energy conservation and environmental protection.

# OPTIMISING OUR RENEWABLE ENERGY POTENTIAL

"....the era of renewable energy optimisation is well under way, and we are well on target towards meeting 35% of renewables in the overall generation mix by 2025"

# CHAIRMAN'S REVIEW

I am pleased to present, on behalf of the Board of Directors and Management, the Annual Report and Accounts of the Central Electricity Board (CEB) for the financial year ending 31 December 2015.

2015 was a challenging, but rewarding, year for the CEB. Rewarding in the sense that we strengthened our financial position and moved forward in important areas such as the modernisation of the electricity infrastructure, customer service delivery and renewable energy penetration. But it was all the same challenging owing to several hurdles we had to overcome to set rolling a number of key generation projects that are critical to meet the projected increase in demand in the short-tomedium term.

As a provider of an essential service, we will, in the years to come, continue to act as an enabler of the socio-economic development of the Republic of Mauritius as the country embarks on a higher growth strategy.

## OPTIMISING OUR RENEWABLE ENERGY POTENTIAL

For small island developing states like Mauritius, development in renewable energy technologies provides salvation; not only due to the fact that it reduces our heavy dependence on energy import and lowers our carbon footprint, but also because it provides us with a viable energy security option. Government's long-term strategy is to increase progressively the share of renewables to attain 35% of the overall generation mix by 2025, and put Mauritius on the list of countries that are most respectful of the Paris Agreement.

The year 2015 represented a turning point in our quest to optimise our renewable energy potential, as demonstrated by the number and variety of projects that were commissioned or started. It is gratifying to note that, by the close of that year, some 547 GWh of electricity was generated from renewable energy sources in Mauritius, representing an increase of 16.38% with respect to 2014. Overall, the percentage of renewable energy generation stood at 20.35%, an outstanding performance which indeed gives us the confidence required to move forward in our journey towards the goal of 35% renewable energy by 2025.

One of the main projects launched by the CEB in 2015 was the new Small Scale Distributed Generation (SSDG) Scheme, with the objective of integrating an additional capacity of 5 MW on our Grid. This scheme aimed to enable around 2,000 small customers, mainly households, to produce their own electricity from renewable energy sources and benefit from lower monthly utility bills through net metering, while at the same time contributing to environmental protection. Much progress was also made in relation to the construction of a 9.35 MW wind-farm at Plaines des Roches by Eole Plaine des Roches Lté. The plant is expected to be commissioned in early 2016. Other large-scale projects, mainly from private promoters and pertaining to solar power and wind energy, are also well on track and are due to be on the Grid by 2017, with a capacity exceeding the threshold of 100 MW. In a nutshell, the CEB is driving forward the deployment of transformational clean energy technologies that are slowly but surely changing the energy landscape of Mauritius.

## STRENGTHENING OUR FINANCIAL POSITION

On the financial side, thanks to the falling prices of heavy fuel oil and coal on the world market, coupled with low interest rates on borrowings, the CEB ended the year 2015 with a net surplus of Rs 1,767 M, as compared to a net surplus of Rs 1,436 M for 2014.

A series of reform measures have also been initiated, with a focus on containing controllable elements of recurrent expenditure, prioritizing project implementation, enhancing revenue collection, and improving efficiency at all levels. The overall aim is to tighten control on expenditure and cut down unproductive spending, through the elimination of wastage, cost monitoring, and ensuring value for money at all times.

It is forecasted that, over the next few years, the Utility will continue to benefit from lower commodity prices and, consequently, consolidate its financial position. This will certainly help us to raise the requisite funding for upcoming generation and network expansion projects, which have to be implemented on a priority basis. As a responsible corporate entity, we are therefore directing our financial resources to where they are needed most, with the objective of securing a sustainable energy future for the Republic of Mauritius.

## BUILDING OUR GENERATING CAPACITY

During 2015, one of the top priorities of the CEB was planning for additional generating capacity to ascertain that there was no risk, whatsoever, of any power shortage in the short-to-medium term. In this respect, much emphasis was laid on the redevelopment of the Saint Louis Power Station, as a contingency plan to respond to the decision of the authorities not to proceed with the implementation of the CT Power coal-power project.

The Saint Louis Redevelopment Project provides for the decommissioning of six old and less-efficient Pielstick units and the installation of new generation capacity to the tune of 60 MW. A Request for Proposals was launched to that effect in 2015 and the contract was awarded in March 2016. Construction works are in progress, with the commissioning of the engines scheduled for the last quarter of 2017. In the near future, it is also planned to set up a 120 -140 MW Combined-Cycle Gas Turbine (CCGT) Power Plant at Fort George. This project is the stepping stone towards the introduction of liquid natural gas (LNG) as a cleaner source of fossil fuel for the production of electricity with a view to significantly reducing our CO2 emissions.

With the above-mentioned injection of additional generating capacity, and with the other power generation expansion projects in the pipeline, we are confident that the CEB will be able to meet the projected growth in demand in the coming years and support Mauritius in its next phase of development.

## CONSOLIDATING OUR TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE

The expansion and consolidation of our Transmission and Distribution infrastructure, the backbone of our power system, was also high on our agenda during 2015 with a view to improving the quality and reliability of supply, while minimising system losses and power outages. The maximum demand for the year reached 459.85 MW (2014: 446.2 MW) and was recorded on Tuesday 03 March 2015 at 19.30 hours.

During the year under review, much headway was made regarding the construction of the new major 66 kV / 22 kV substations at La Tour Koenig, Case Noyale and Jin Fei; their commissioning were scheduled for 2016. These substations would serve important load centres, comprising mainly big industrial and commercial customers. Moreover, the refurbishment and strengthening of existing 66 kV lines were carried out islandwide to enhance the reliability and security of supply. The CEB is also investing hugely in the replacement of bare conductors by insulated cables to minimise power outages. Likewise, the undergrounding of networks on main feeders in towns and in major villages are in progress, and we are well on target to achieve 50% of undergrounded 22 kV and low voltage network by 2025.

## ENHANCING OUR CUSTOMER SERVICE LEVELS

Today, more than ever before, the customer is the be-all and end-all of corporate success. I wish to report that, at the close of year 2015, our customer base in Mauritius and Rodrigues amounted to more than 450,000, which is a measure of the enormous challenges we have to face as the sole provider of electricity to the whole nation.

Building on the initiatives undertaken over the past few years, several projects were implemented during the year to enhance our customer service delivery and instil a strong customer service culture. Our focus in 2016

was to finalise the necessary administrative prerequisites for the progressive implementation of ISO Standards with a view to re-engineering our multiple processes and setting the pathway for a world class service.

In a similar vein, the CEB recognises the need to be socially involved and supportive of the wider needs of the community, more specifically those of our less fortunate citizens. Electricity is, no doubt, an essential commodity, and providing access to those who are "more vulnerable" is an integral part of our corporate social responsibility. In this respect, a number of assistance schemes have been upheld to facilitate access to electricity for low-income customers and support to those with financial difficulties. They include the Low Voltage Network Assistance Scheme and the Social Tariff.

## INVESTING IN OUR HUMAN CAPITAL

Whatever we do and perform at the CEB starts and ends with our employees. Our human capital remains our most important asset and I can confidently state that we are well-equipped to maintain the high quality standards expected by our customers, within the parameters of an ambitious plan to move our economy towards a higher growth path. Our aim is to continue to be recognised as an employer of choice and to create a working environment where every employee feels that his or her contribution is recognised and valued, and where everybody has the opportunity to develop and grow professionally.

In the years ahead, we will continue to invest in the learning and development of our human resources. The focus will be not only on the enhancement of hard skills, but equally on the development of soft skills, which have somehow been overlooked in the past. Another priority for the near future is to conduct a consultancy study in order to evaluate the effectiveness of the current organisational structure towards the fulfilment of our strategic goals, and address the dilemma of succession planning which remains a key concern for the sustainability of our organisational structure which is more responsive will enable Management to set the guidelines for implementing a new organisational structure which is more responsive to our business environment and allows our employees to perform optimally.

## **GOING FORWARD**

As the Mauritian economy strives to keep pace with globalisation and, in regional terms, with the economies of its African and Asian neighbours, the demand for energy is set to continue to rise in this quest for higher growth and greater competitiveness.

In the years to come, the CEB is likely to depend largely on fuel oil and coal in its energy mix. The Utility will, however, strain every sinew to achieve a broad energy portfolio, where room can be found for renewable sources of energy, whilst due care will be taken to protect the environment. All in all, we can affirm that the era of renewable energy optimisation is well under way, and we are well on target towards meeting 35% of renewables in the overall generation mix by 2025.

Mootoosamy Naidoo Chairman

KEY FACTS 2015		
Total Assets (Rs M)	29,436	
Surplus (Rs M)	1,767	
Net Cash from Operating Activities (Rs M)	3,508	
Capital Expenditure (Rs M)	1,160	
Employees (number)	1,884	
Customers (number)	452,605	
Electricity Sales (MWh)	2,505,432,490	
Nominal Capacity including IPPs (MW)	777.59	
Effective Capacity including IPPs (MW)	685.80	
Peak Demand (MW)	459.85	
Power Lines (all voltages) (km)	10,147	

Figures for Mauritius and Rodrigues



# **CORPORATE GOVERNANCE**

STATEMENT OF COMPLIANCE (Section 75(3) of the Financial Reporting Act)

Name of PIE: Central Electricity Board

Reporting Period: 1 January 2015 to 31 December 2015

We, the Directors of the Central Electricity Board, confirm that to the best of our knowledge, the Company has complied with all of its obligations and requirements under the Code of Corporate Governance.

Signed by:

M. Naidoo Chairman

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S. Appanah (Mrs) Board Member

23 May 2017

## **CORPORATE GOVERNANCE**

In compliance with the Code of Corporate Governance for Mauritius, this section delineates, *inter alia*, the corporate governance structures in place at the CEB and describes the organisation of the Board's business. It also sets out the systems and processes established for maintaining and monitoring internal controls, as well as identifying and managing risks. Moreover, it outlines the efforts made to enhance corporate social responsibility and communication with stakeholders.

The CEB views good corporate governance practices as integral to good performance. As a parastatal body, wholly owned by the Government, the utility is committed to fulfilling its mandate in a manner which is consistent with good governance practices and, in particular, with regard to accountability, transparency, responsibility and ethics.

The year 2015 was a particularly challenging one for the CEB, due to the variety and complexity of the issues that had to be dealt with. Thirty-five meetings of the Board of Directors and Sub-Committees were held during the review period, and numerous matters were discussed and resolved.

## **GOVERNING BODIES**

The direction, control and accountability of the business of the CEB are vested in the Board. The fulfilling of these responsibilities is facilitated by a well-developed governance structure comprising various Board Sub-Committees. Management is accountable and subject to the control of the Board and operates within the policy framework laid down by the latter.

Business is conducted in accordance with the CEB Act, other relevant statutory provisions, and the principles of good corporate governance. All functions are exercised honestly, in good faith, with due care and diligence and in the best interests of the CEB and its stakeholders.

## THE BOARD

The Board is ultimately responsible and accountable for the performance and affairs of the organisation. It subscribes to sound corporate governance principles and ensures that the highest standards of business ethics, honesty and integrity are maintained.

The role and functions of the Board include:

- Providing strategic direction and leadership;
- Reviewing objectives, strategies and structures with a view to satisfying stakeholders' interests;
- Ensuring that the CEB complies with all relevant laws, regulations, codes of best business practice, and guidelines laid down in the Code of Corporate Governance;
- Ensuring greater levels of fairness, transparency and accountability in the decisions and acts of the CEB;
- Ensuring the integrity of CEB's accounting and financial reporting systems, including the independence of audit, control systems, systems for monitoring and managing of risks, financial control, and compliance with Law and relevant accounting standards;
- Overseeing the process of disclosure and communication; and
- Ensuring that the utility develop a succession plan, both for its executive directors and senior management.

## COMPOSITION OF THE BOARD

In accordance with the CEB Act, the Board is constituted of a Chairman, the General Manager and nine other members. The latter are drawn from diverse backgrounds and they bring a wide range of experience and professional skills to the Board.

The Chairman is appointed by the Minister; the General Manager is appointed by the Board.

The profiles of the directors for the year 2015 are given hereunder. None of the Directors, who held office at the end of the financial year, had any interest in the affairs of the CEB.



(Mrs) Nirmala Devi Nababsing

**Ag. Chairperson** (up to March 2015) Age: 62

*Qualifications:* BA (Hons) Administration

*Position:* Senior Chief Executive, Ministry of Energy and Public Utilities



Mootoosamy Naidoo

Chairman (as from 09 April 2015) Age: 48

*Qualifications:* Chartered Institute of Management Accountants (CIMA), Post Graduate in Law



Shiam Krisht Thannoo

General Manager (up to 01 Feb 2015) Officer-in-Charge (02 Feb to 12 April 2015) Age: 49

*Qualifications:* B. Tech (Hons), MBA, CRPE

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Gérard Hébrard, O.B.E.

Rajcoomar Bikoo

**General Manager** (as from 13 April 2015) Age: 66

*Qualifications:* Ing. EEMI, AMI. Mech., C. Eng., MIEE.

**Representative of the Ministry of Energy and Public Utilities** *Age:* 60

*Qualifications:* B. Tech (Hons), MBA

*Position:* Director General (Public Utilities)



Claude Wong So, O.S.K.

#### **Representative of the Institution of Engineers** *Age*:62

#### Qualifications:

BSc Civil Engineering, University of Nairobi, Kenya;- MSc Occupational Hygiene, University of Newscastle Upon Tyne, U.K; Fellow Institution of Engineers Mauritius (FIEM); Fellow Institution of Occupational and Safety Management Mauritius (FIOSHM); Retired Fellow Institution of Occupation Safety UK (FIOSH)

#### Position:

Member of Institution of Engineers Mauritius, Chairman of Airport of Rodrigues Ltd; CEO State Land Development Company Limited; Chairman of Road Development Authority



**Rohit Mungra** 

**Representative of the Central Water Authority** (up to February 2015)

*Age:* 66

*Qualifications:* B. Tech (Civil); Dipl. in Public Health Engineering; Dipl. in Water Quality Control

Position: Senior Advisor, Central Water Authority



(Mrs) Sadhna Appanah

Representative of the Ministry of Finance and Economic Development Age: 51

*Qualifications:* BA Hons.in Economics and Management; MBA Finance

*Position:* Lead Analyst, Ministry of Finance and Economic Development



Ally Damree

Member with experience in Agricultural, Industrial, Commercial, Financial, Scientific or Administrative Matters (as from April 2015) Age: 43

*Qualifications:* Business and Finance, Business Administration and Finance, Bachelor of Laws (LLB)

## Position: Director of Investments ACI The Financial Markets Association



Harryduth Chummun

Member with experience in Agricultural, Industrial, Commercial, Financial, Scientific or Administrative Matters (as from August 2015) Age: 69

*Qualifications:* Diploma in Agriculture and Sugar Technology; Advanced Certificate in Business Management



Dev Aukle

**Representative of the Central Water Authority** (as from March 2015) Age: 63

Qualifications: Master Civil Engineering; CPE; IEM

Position: Officer-in-Charge Central Water Authority



Member with experience in Agricultural, Industrial, Commercial, Financial, Scientific or Administrative Matters (from April to May 2015)

Ken Fat Fong Suk Koon, O.S.K.

Board meetings are scheduled annually in advance. Special meetings are convened as necessary to address specific issues. The attendance of members at the twelve Board meetings (including 2 special meetings) held during the reporting period is shown hereunder.

## **BOARD MEETINGS 2015**

	No. of Meetings Attended	Overall Percentage (%)
(Mrs) Nirmala Devi Nababsing (Ag. Chairperson) (up to March 2015)	3 of 3	100
Mootoosamy Naidoo (Chairman) (as from 09 April 2015)	9 of 9	100
Shiam Krisht Thannoo <i>(up to12 April 2015)</i>	3 of 4	75
Gérard Hébrard, O.B.E. (as from 13 April 2015)	8 of 8	100
Rajkoomar Bikoo	12 of 12	100
Claude Wong So, OSK	12 of 12	100
Rohit Mungra ( <i>up to February 2015</i> )	2 of 2	100
Dev Aukle (as from March 2015)	9 of 10	90
(Mrs) Sadhna Appanah	9 of 12	75
Ally Damree (as from April 2015)	 8 of 9	89
Ken Fat Fong Suk Koon (from April to May 2015)	 1 of 2	50
Harryduth Chummun (as from August 2015)	5 of 5	100

## DIRECTORS' REMUNERATION

During the year 2015, the fees paid to Directors amounted to Rs 858,700 (excluding the Chairman and General Manager).

The Chairman was paid a monthly fee of Rs 108,600. The monthly salary of the General Manager amounted to Rs 185,750.

All other Board Members were entitled to a monthly fee of Rs 10,000 in respect of attendance at the main Board meetings. No fee was payable if a Board Member absented himself during a calendar month. Likewise, the fee was not payable if there was no Board meeting in a calendar month.

In regard to attendance at Sub-Committee meetings, the monthly fee payable to a member was Rs 6,000. The Chairman of a particular Sub-Committee was paid a monthly fee of Rs 8,000. No fee was payable in case of the absence of a member, or the non-holding of Sub-Committee meeting during a calendar month.

## BOARD COMMITTEES

In the conduct of its duties, the Board is assisted by three Committees, namely, the Finance Committee, the Audit, Risk and Good Governance Committee, and the Human Resource Committee. Each Committee operates within its defined terms of reference that set out the composition, role, responsibilities, and delegated authority. Matters are discussed in advance at the level of these committees before they are presented to the Board.

## FINANCE COMMITTEE

The Finance Committee is made up of four Non-Executive Directors and the General Manager. The Committee reviews and makes recommendations to the Board on the financial situation, the budget and the evaluation of tenders.

The functions of the Committee include the:

- Examination of tender evaluation reports prepared by Management in respect of tenders whose value exceeds Rs 10 million and submitting recommendations to the Board for their award;
- Examination of Capital and Revenue Budgets, Cash flow Statements, Management Accounts and Financial Statements; and
- Analysis of proposals for tariff review.

Ten Finance Committee meetings were held during the year 2015.

	No. of Meetings Attended	Overall Percentage (%)
Rajkoomar Bikoo (Chairman)	10 of 10	100
Claude Wong So, OSK	7 of 10	70
(Mrs) S. Appanah	9 of 10	90
Rohit Mungra <i>(up to February 2015)</i>	2 of 2	100
Dev Aukle (as from March 2015)	7 of 8	88
Shiam Krisht Thannoo <i>(up to 12 April 2015)</i>	2 of 2	100
Gérard Hébrard, O.B.E. (as from 13 April 2015)	6 of 6	100

## FINANCE COMMITTEE MEETINGS 2015

## AUDIT, RISK AND GOOD GOVERNANCE COMMITTEE

The Audit, Risk and Good Governace Committee is made up of three Non-Executive Directors and ensures that risks, audit and internal control are properly addressed. Furthermore, the Committee examines the annual financial statements and reviews the financial aspects of transactions which are considered as significant.

The functions of the the Audit, Risk and Good Governace Committee include:

- Monitoring of important risk areas and ensuring that these are being effectively addressed by Management;
- Monitoring the effectiveness of the system of internal control, accounting practices, information systems and internal audit;
- Evaluation of the financial management and auditing policies of the CEB;
- Review of the financial reporting process to ensure CEB's compliance with the applicable laws and regulations;
- Examination and review of the annual financial statements;
- Examination of accounting and auditing concerns identified by internal and external audit;
- Ensuring integration of internal control and risk management;
- Making recommendations to the Board on risk policies;
- Examination of risk reports on the cash flow position of the CEB, market changes, the current situation in terms of interest rates, exchange rates and commodity prices, and forecasts; and
- Providing advice on financing arrangement and structure.

In 2015, the Audit, Risk and Good Governace Committee met on three occasions.

## AUDIT, RISK & GOOD GOVERNANCE COMMITTEE MEETINGS 2015

	No. of Meetings Attended	Overall Percentage (%)
(Mrs) Sadna Appanah (Chairperson)	3 of 3	100
Ally Damree (as from April 2015)	2 of 3	67
Harryduth Chummun <i>(as from August 2015)</i>	1 of 1	100

## HUMAN RESOURCE COMMITTEE

The Human Resource (HR) Committee consists of four Non-Executive Directors and the General Manager. Its specific terms of reference include direct authority for, or consideration of, and recommendations to the Board on matters relating to, *inter-alia*:

- Human Resource strategies;
- Selection and appointment;
- Remuneration and performance management;
- Training and development;
- Industrial relations; and
- Succession planning.

Ten meetings of the HR Committee were held during the review period.

## **HR COMMITTEE MEETINGS 2015**

	No. of Meetings Attended	Overall Percentage (%)
Ken Fat Fong Suk Koon (Chairman) (from April to May 2015)	1 of 1	100
Harryduth Chummun (Chairman) (as from August 2015)	7 of 7	100
Rajkoomar Bikoo	8 of 10	80
Claude Wong So, OSK	9 of 10	90
Ally Damree (as from April 2015)	10 of 10	100
Gérard Hébrard, O.B.E (as from April 2015)	 10 of 10	100

## MAJOR DECISIONS OF THE BOARD

The major decisions of the Board during the year 2015 were as follows:

- Constitution of a new Board of Directors under the Chairmanship of Mr Mootoosamy Naidoo, with effect from April 2015;
- Appointment of Mr Louis Joseph Gérard Hébrard, O.B.E, as General Manager, with effect from 13 April 2015;
- Approval for the Saint Louis Redevelopment Project, comprising the installation of 4x15 MW engines;
- Approval for an additional channel for the payment of electricity bills through the Emtel Mobile Payment Solution;
- Approval for the financing of the Saint Louis Power Plant Redevelopment Project by the African Development Bank;
- Approval to Consolidated Energy Limited for the extension of operation on coal beyond July 2015;
- Approval for the funding of the Low Voltage Network Extension Scheme by the CEB as a social contribution up to a maximum of MUR 6 M per annum, in replacement of the previous Scheme granted by Government;
- Approval for the implementation of a New Small-Scale Distributed Generation Scheme (SSDG) and executing requests already received for Medium-Scale Distributed Generation (MSDG), both using renewable energy sources;
- Approval for the "Review of the Organisation Structure and Job Descriptions" for employees of the CEB;
- Approval for the redefinition of Social Tariff 110 A, meant for needy customers;
- Approval for the purchase of land at Eau Bonne, Bambous from Médine Ltd for the setting up of a new quarters for the Transmission and Distribution Department; and
- Approval for the setting up of a Multi-Purpose Sports Complex for the welfare of employees.

## OTHER GOVERNANCE STRUCTURES

## TENDER COMMITTEE

The Tender Committee assists the Board in making procurement decisions, approves procurement policies, and ensures that CEB's procurement system and processes are fair, transparent, competitive and cost effective. It examines evaluation reports in respect of tenders and makes recommendations for their approval to the General Manager or the Finance Committee, as appropriate.

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### INTERNAL AUDIT

CEB's internal audit function provides the Audit, Risk and Good Governace Committee and Management with assurance that the internal controls are appropriate and effective. This is achieved by means of an independent and objective appraisal and evaluation of internal controls and other governance processes.

The Audit Department is fully supported by the Board and the Audit, Risk and Good Governace Committee, and has unrestricted access to all organisational activities, records, property and staff.

## TECHNICAL AUDIT

The Technical Audit Unit provides assurance to the Executive Management, through the audit function, on the technical, environmental, quality and safety performance of the CEB. The Unit is responsible for technical audits as well as for quality assurance and incident investigation.

#### MANAGEMENT

Management is accountable and subject to the control of the Board and operates within the policy framework laid down by the latter. The profiles of members of the CEB Top Management team are given hereafter.



**Gérard Hébrard,** O.B.E. General Manager (*as from13 April 2015*)

Age: 66

Qualifications: Ing. EEMI, AMI. MechE., C. Eng., MIEE.

*Experience:* Joined CEB in 1966 as Apprentice; Appointed Asst. Head of Department (Production) in 1984; Appointed Production Manager in 1989; Deputy General Manager 2006-2014; Appointed General Manager on 13 April 2015



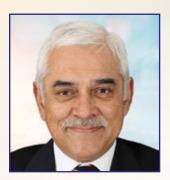
#### **Shiam Krisht Thannoo**

Corporate Administration / Non-Utility Generation Manager (as from 01 June 2015)

#### Age:49

Qualifications: B. Tech (Hons), MBA, CRPE

*Experience:* Joined CEB in 1985 as Clerical Assistant; Appointed Engineer in 1996; Appointed Non-Utility Generation Planner in 2002; Appointed Secretary/Non-Utility Generation Manager in 2007; Officer-in-Charge - Nov 2010 to Sept 2011; General Manager- Oct 2011 to 01 Feb 2015; Officer-in-Charge -02 Feb to 12 April 2015; Non-Utility Generation Manager - 13 April to 31 May 2015; Appointed Corporate Administration / Non-Utility Generation Manager on 01 June 2015



Hassen Fakim, O.S.K. Deputy General Manager (Technical)

Age: 62

Qualifications: B.Sc (Hons.); DOSH

*Experience:* Joined CEB as Cadet Engineer in 1977; Appointed Principal Engineer in 1993; Appointed Production Manager in 2006; Ag. Secretary as from Nov 2010; Ag. Deputy General Manager from Dec 2013 to May 2014; Appointed Deputy General Manager (Technical) in May 2014



Prabhakar Sembhoo

Deputy General Manager (Administrative) (up to 05 July 2015)

Age: 63

Qualifications: B.E. (Elec.), MIEEE

*Experience:* Joined CEB in 1976 as Cadet Engineer; Appointed Principal Engineer in 1998; Appointed Area Manager in 2002; Appointed Transmission & Distribution Manager in 2004; Appointed Deputy General Manager (Administrative) in May 2014



#### **Chavan Dabeedin**

Transmission & Distribution Manager (as from 01 June 2015)

Age: 49

*Qualifications:* B. Tech (Hons), MBA, MSc, EPSE Bath U.K, MIET, MIEEE, MIDGTE, CRPE

*Experience:* Joined CEB in Feb 1992 as Trainee Engineer; Appointed Engineer in Aug 1995; Appointed Senior Engineer in Sept 2002; Appointed Principal Engineer in Nov 2007; Appointed Corporate Administration Manager in Aug 2008; General Manager Nov 2008 – Nov 2010; Corporate Administration Manager Nov 2010 - May 2015; Appointed Trans & Distn Manager on 01 June 2015



#### **Shamshir Mukoon**

Production Manager (as from 01 June 2015)

Age: 53

Qualifications: B. Tech (Hons), MBA, CRPE, MIEM

*Experience:* Joined CEB in 1989 as Cadet Engineer; Engineer 1992-2002; Senior Engineer 2002-2007; Principal Engineer 2007-2008; Corporate Planning & Research Manager Aug 2008 - May 2015; Appointed Production Manager on 01 June 2015



## Jayram Luximon Customer Services Manager

Age: 46

*Qualifications:* DEUG-Sciences Economiques; Diplôme des Hautes Etudes Commerciales et Financières (ESC Pau, France)

*Experience :* Shop Manager Winners (IBL) 1994-1998; Marketing Manager, Consumer Health, IBL Pharmaceuticals 1998-2005; Appointed Customer Services Manager CEB in 2006



Shyam Abacousnac Information Technology / MIS Manager

Age: 46

Qualifications: BSc Computer Science; MSc Software Engineering

*Experience:* Research Officer, National Computer Board 1997-2001; Systems-Analyst, Development Bank of Mauritius Ltd 2001-2002; IT Manager, State Trading Corporation 2002-2006; IT Manager, Wastewater Management Authority 2006-2009; Joined CEB as IT/MIS Manager in March 2009



#### Vishwanath Jhummon

Non-Utility Generation Manager (up to 12 September 2015)

Age: 63

*Qualifications:* Bachelor in Technology in Electrical Engineering; PG Diploma in Electric Power Distribution Systems; MBA

*Experience:* Joined CEB in 1976 as Cadet Engineer; Appointed Senior Engineer in 1983; Appointed Principal Engineer in 2002; Appointed Corporate Administration Manager in 2009; Appointed Non-Utility Generation Manager in July 2012



#### **Pharad Kurreemun**

Chief Internal Auditor (up to 17 June 2015)

Age: 52

Qualifications: ACMA; CGMA

*Experience:* Joined CEB in 1985 as Temporary Clerical Assistant; Appointed Meter Reader in 1986; Appointed Auditor in 1993; Appointed Chief Salaries and Wages Officer in 2002; Appointed Administrative/Finance Officer in 2003; Appointed Accountant (Budget & Reporting) in 2005; Appointed Senior Accountant in 2006; Acting Chief Financial Officer Mar 2011-Feb 2012; Officer in Charge Supply Chain Dec 2012-Sep 2013; Acting Chief Financial Officer Oct 2013-Aug 2014; Chief Internal Auditor August 2014-June 2015



Rajden Chowdharry Officer-in-Charge Supply Chain

Age: 56

Qualifications: B. Tech (Mech), MBA, C Eng, AMIE, MIEM, MIDGTE

*Experience:* 1989-1991 Cadet Engineer; 1991-1992 Engineer; 1992-2006 Station Superintendent; 2006-2013 Principal Engineer; Officer-in-Charge Supply Chain Department as from Oct 2013



#### **Ravin Nundlall**

Ag. Production Manager (up to 31 May 2015)

Age: 56

Qualifications: B.E-Mech; MIEM; RPEM

*Experience:* May 86 to Nov 87-Trainee Engineer; Dec 87 to Nov 89-Cadet Engineer; Dec 89 to Aug 93-Engineer; Sep 93 to Apl 2006-Senior Engineer; May 2006 to Nov 2013-Principal Engineer; Ag. Production Manager Dec 2013-31 May 2015



#### **Abdool Fezal Azeer**

Ag. Transmission & Distribution Manager (up to 31 May 2015)

Age: 58

Qualifications: B.E (Elect), RPEM

*Experience:* Joined CEB in May 1983 as Trainee Engineer; Appointed Asst Engineer in Sep 1984; Appointed Senior Engineer in Feb 1990; Appointed Principal Engineer in Dec 2007; Ag. Transmission & Distribution Manager May 2014-31 May 2015



Kesnalall Balgobin Officer-in-Charge Finance

Age: 52

Qualifications: FCCA, MBA

*Experience:* Joined CEB in Jan 1984 as Cadet Meter Reader; Appointed Junior Clerk in Aug 1985; Appointed Asst Salaries & Wages Officer in June 1987; Appointed Chief Salaries & Wages Officer in Feb 1991; Appointed Trainee Finance Officer in July 1999; Appointed Business Planning Analyst in Aug 2004; Appointed Accountant in Jun 2005; Appointed Senior Accountant in Mar 2013; Officer-in-Charge Finance as from Aug 2014



Li Yun Fong Kin Cheong Patrick Officer-in-Charge Audit (as from 01 August 2015)

Age: 58

Qualifications: FCCA

*Experience:* Joined CEB in 1990 as Principal Accounts Asst; Appointed Accountant (Production Dept) in 2005; Supervising Officer Internal Audit Dept 2006-2008; SAP Controller 2009-2010; Management Accountant 2011-Feb 2012; Officer-in-Charge Finance Dept Mar 2012-Sept 2013; Officer-in-Charge Audit Dept as from 01 August 2015



#### Sailendra Sahye

Officer-in-Charge Human Resources (05 March to 02 August 2015) Officer-in-Charge (Admin, Train. & Devt)) (as from 03 August 2015)

Age: 41

Qualifications: BSc (Hons), MBA

Experience: Joined CEB in July 2007 as Human Resources Executive



#### Goranah Asiriah

Officer-in-Charge (Employee Relations & Welfare) (as from 03 August 2015)

Age: 61

Qualifications: Diploma in Personnel Management

*Experience:* Joined CEB in September 1973 as Cadet Meter Reader; Appointed Principal Personnel Asst (re-styled Human Resources Executive) in July 1990.

## COMMUNICATION WITH STAKEHOLDERS

Open lines of communication are maintained to ensure transparency and optimal disclosure. Besides official press communiqués, regular meetings are held with the press to ensure that stakeholders and the public at large are kept informed on matters affecting the Utility.

## CORPORATE SOCIAL RESPONSIBILITY

The CEB recognises the need to be socially involved and supportive of the wider needs of the community, more specifically those of less fortunate citizens.

During the review period, a number of assistance schemes were maintained to promote access to electricity to low-income customers and support to those with financial difficulties. They include:

## LOW VOLTAGE NETWORK ASSISTANCE SCHEME

This scheme provides assistance to needy households in the following instances:

- Connection of houses which are deprived of electricity supply due to their remoteness from the electricity grid;
- The displacement of poles, transformers, and electric network that are obstructing the construction of individual houses; and
- The insulation of bare electric wires which may constitute an electrical hazard.

The scheme is applicable to households whose income does not exceed Rs 22,500 per month.

## SOCIAL TARIFF

Special consideration is given to the social dimension of electricity consumption by households. In this respect, the CEB has in place a social tariff (Tariff 110A) which is meant for needy customers. Under this scheme, customers whose monthly consumption does not exceed 85 kWh benefit from concessionary electricity rates.

## STATEMENT OF DIRECTORS' RESPONSIBILITIES

The Statutory Bodies (Accounts and Audit) Act requires the Directors to prepare Financial Statements for each financial year, which fairly present the state of affairs of the organisation and the result of its operations and cash flows for that period. The Financial Reporting Act lays down that these Financial Statements should be prepared in accordance with International Financial Reporting Standards (IFRSs). Not later than 4 months after the end of every financial year, the CEB shall submit the annual report to the auditor.

In preparing those financial statements, the Directors are required to ensure that adequate accounting records and effective system of internal controls and risk management have been maintained; select suitable accounting policies and then apply them consistently; make judgments and estimates that are reasonable and prudent; and state whether applicable accounting standards have been followed. The Directors confirm that they have complied with these requirements in preparing the Financial Statements. The Directors also report that the Code of Corporate Governance has been adhered to.

The external auditors are responsible for reporting on whether the financial statements are fairly presented.

The CEB has to submit a copy of its audited financial statements to the Financial Reporting Council, in accordance with the Financial Reporting Act 2004.

The code of Corporate Governance has been adhered to.

"Approved by the Board of Directors and signed on its behalf"

M. Naidoo Chairman

S. Appanah (Mrs) Board Member

## **INTERNAL CONTROL**

Management is charged with the responsibility of establishing an effective internal control environment, including adequate internal financial controls. In addition, operational control systems are developed and maintained on an on-going basis to provide reasonable assurance to the Board regarding:

- The integrity and reliability of the financial statements;
- The safeguarding of the organisation's assets;
- The economic and efficient use of resources;
- The verification of the accomplishment of established goals and objectives;
- The detection and minimisation of fraud, potential liability, loss and material misstatement; and
- Compliance with applicable legislation and regulations.

These controls are contained in organisational policies and procedures, structures and approval frameworks, and they provide direction, establish accountability and ensure adequate segregation of duties. They each contain self-monitoring mechanisms.

The Board ensures that an effective internal control framework has been established. The Internal Audit function monitors the operation of the internal control systems and reports findings and recommendations for improvement to Management and to the Audit, Risk and Good Governace Committee.

The Audit, Risk and Good Governace Committee monitors and evaluates the duties and responsibilities of Management and of Internal and External Audit to ensure that all major issues reported have been satisfactorily resolved. Finally, the Audit Committee reports all important matters to the Board.

Over the years, the CEB has regularly upgraded its organisational structure and accounting system so as to produce timely financial statements that present a true and fair view of its state of affairs. An effective internal control system has been developed in all spheres of activities and processes and all transactions are accounted for and recorded in an integrated accounting system.

## PROCESSES

The day-to-day operational activities are performed throughout different organisational processes, which are subject to rules and regulations. The CEB has introduced these rules and regulations over a long period of time in an objective manner to detect and prevent malpractices and corruption. Some of the processes are examined below:

#### ACCOUNTS PAYABLE

Management is committed to ascertain that all purchases or services rendered to the CEB are settled in accordance with contractual terms and are adequately recorded. It also ensures that operations in the Accounts Payable Section are as transparent as possible and that necessary internal control is inherent in the system to prevent fraud and corruption. The control framework regarding Accounts Payable is summarised hereunder.

FRAMEWORK	DETAILS
Risk Management	<ul> <li>Invoices can be processed only if goods or services have been received and are in accordance with contractual terms as evidenced by authorized persons.</li> <li>Physical access to Accounts Payable Section restricted to authorized personnel.</li> <li>Safe custody of bank cheques.</li> <li>All cheques bear 'A/C PAYEE ONLY'.</li> <li>All payments supported by original documents.</li> <li>All documents are stamped 'PAID' and filed after payments.</li> </ul>
Transparency	<ul> <li>General rules in connection with payment procedures are laid down in General Staff Instruction Circulars.</li> <li>Payment terms are clearly specified on contracts/order forms.</li> <li>Audit trail of all payments are kept.</li> </ul>
Accountability	<ul> <li>All payments are approved by duly authorized persons.</li> <li>Access to capture invoices and process payments are restricted.</li> <li>Cheques and bank transfers are signed by Top Management only.</li> <li>All payments are accounted for under appropriate General Ledger Code.</li> </ul>
Integrity Management	<ul> <li>Information system records all users who accede to any Module on SAP.</li> <li>Payments once processed cannot be captured in the system again.</li> <li>Segregation of duties in the Accounts Payable Section.</li> </ul>

## SUPPLY CHAIN MANAGEMENT (SCM)

The SCM function at the CEB has a strategic approach to procurement and the focus is on attaining businessrelated outcomes, while ensuring that basic principles of procurement best practices such as Economy, Efficiency, Fairness, Reliability, Transparency, Accountability and Ethical Standards are maintained. To this end, four core functions, namely Procurement, Contract Management, Transport and Warehousing, and Supplier Management have been established. The internal processes and procedures, which were already well-developed, have been aligned with the provisions of the Public Procurement Act.

The functions highlighted above have been interrelated to ensure a reliable flow of goods and services and information along the value chain, as well as within the whole supply chain of the CEB. However, appropriate separation of responsibilities has been established in order to maintain confidentiality and transparency in the system.

## BIDDING EXERCISE

The bidding exercise at the CEB is established in a structured way so as to ensure compliance with existing procurement regulations and maintain confidentiality and transparency in the process. A systematic approach is adopted as soon as a procurement need arises until bids are received and opened in public. Interface between bidders and the CEB is made through the Chairman of the Tender Committee, who has the sole prerogative to communicate with and instruct bidders on matters pertaining to the bidding process.

## EVALUATION OF BIDS AND APPROVAL OF PROCUREMENT CONTRACTS

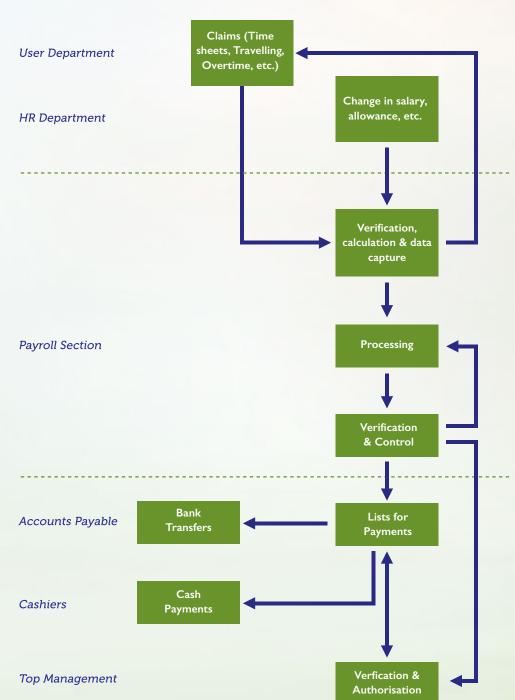
As soon as bids are received and registered by the Tender Committee, all bids are secured until the setting up of an Evaluation Committee composed of at least three members. The Evaluation Committee evaluates the bids according to pre-determined evaluation criteria and in all independence. An appropriate internal control system has been set up to ensure that all procurements are supported by approval at relevant levels so that no commitment is taken by any officer on behalf of the CEB until the approval has been obtained.

## METER READING, BILLING, CASH COLLECTION AND DEBTORS MANAGEMENT

The principle of separation of functions and responsibilities is also maintained with regard to meter reading, billing, revenue management, and revenue protection. This ensures that officers who issue bills do not collect payments or investigate suspected cases of illegal abstraction of electricity or under-billing.

## SALARIES AND WAGES

There is a well-defined payroll process, with adequate internal controls, in accordance with the principle of check and balances. The process flow is shown below:



## SALARIES AND WAGES PROCESS FLOW

The Board acknowledges that organisational objectives can only be achieved through its employees. Accordingly, a lot of emphasis is placed upon the human capital by providing a healthy and safe working environment and adopting an equitable and fair approach towards employees' remuneration and benefits.

## LEAVES

Employees are encouraged to proceed on vacation leave, whether locally or abroad. The general rule is that, every employee should enjoy at least 50% of her/ his yearly vacation leave entitlement, which, otherwise, would be forfeited. Not only does this scheme ensure that employees get a deserved rest during the year, with increased efficiency and output thereafter, but it also helps the organisation in preventing and detecting corrupt practices during the employees' absence.

## CONFLICT OF INTEREST

The internal rules provide that, where an employee, in the course of the discharge of his duties, suspects or should reasonably suspect that he may find himself in a conflict of interest, he shall disclose his suspicion to his immediate superior who shall note the declaration in writing and issue such direction as he feels proper.

Such disclosures are made by members of panels set up to evaluate tenders and by members of the Tender Committee.

## CODE OF ETHICS / CONDUCT

The Collective Agreement between the Board and the Unions on salaries and conditions of service contains a Code of Conduct which should be adhered to by the personnel. The Code of Conduct was reviewed in consultation with ICAC.

By setting out the minimum standards of ethical conduct expected from employees, the Code of Conduct aims at ensuring that their conduct and behaviour are professional and lawful at all times. The dissemination of the Code of Conduct has been done through circulars and e-mails and is also readily available on the organisation's intranet. New recruits are made aware of its content during their induction programme.

Employees at different levels of the organisation hierarchy are required to abide by the Code of Conduct and report to their respective Head of Department or immediate superior, difficulties encountered in its interpretation and understanding. Non-compliance can end up with sanctions depending on the seriousness of the breach; accordingly, disciplinary proceedings may be initiated.

## CONFIDENTIALITY AND SECRECY

The affairs of the CEB are conducted in a transparent manner, with the timely preparation of financial statements and annual reports. In addition, there are certain rules that employees have to adopt in relation to disclosure of information regarding the CEB.

## DISCIPLINARY PROCEDURES

There is a clear and defined policy at the CEB regarding disciplinary procedures which act as a deterrent to malpractices and wrongful conduct.

## TECHNOLOGY

The CEB has adopted an IT Governance Framework, referred to as COBIT (Control Objectives for Information and Related Technology) to implement, operate and maintain its IT infrastructure and applications.

COBIT provides the CEB with a set of clearly defined processes that integrates good practices grouped into four domains, namely:

- Planning and organising;
- Acquiring and implementing;
- Delivering and supporting; and
- Monitoring of IT performance.

It ensures that IT resources are properly and optimally used to provide the CEB with the information that it needs to achieve its business objectives, while minimizing the risks of fraud, corruption and misuse of resources.

While providing its employees with up-to-date IT facilities and tools to enable them to operate more efficiently and effectively, the CEB has adopted a number of policies and implemented measures to ensure an ethical and lawful use of the IT infrastructure.

However, with the rapidly changing nature of electronic media and services, no policy would be able to cover every possible situation. Therefore, the policies adopted at the CEB express the general principles and define the boundaries for the "acceptable use" of the information technology infrastructure and applications of the CEB.

## **VOICE RECORDING**

In very sensitive and high risk areas, dealings between CEB officers and Financial Institutions are recorded with a view to mitigating any risk of collusion.

## ELECTRONIC METER-READING EQUIPMENT

The CEB has witnessed a significant increase in illegal abstraction of electricity involving substantial loss of revenue. Accordingly, it has invested in the latest technology as regards metering equipment, which has an inbuilt system to detect and reveal any tampering thereof. More importantly, all movement of meters, both used and unused, are strictly controlled to minimise any risk of misuse.

## OUTLOOK

The relevance of corporate governance principles in the management of corporate organisations cannot be underestimated, as evidenced by the recent corporate frauds and scandals across the globe. It is important to learn from these experiences and to realise that business entities need to take pre-emptive actions and revisit their existing governance practices, so as to identify where any weaknesses exist and what improvements are necessary. These challenges, if not appropriately dealt with, could thwart the administration of corporate organisations and other vitally important institutions in the concerned economy.

The CEB is conscious of the need to further improve its governance structures and processes so that that they are in line with best practice and are responsive to the prevailing business environment. The utility is equally aware of the need to re-examine and reinforce its risk management systems. These are being addressed in the short-to-medium term perspective in the context of various reform programmes.

# REVIEW OF OPERATIONS





# PRODUCTION

The bulk of the energy production for Mauritius comes from fossil fuels, namely fuel oil and coal. The CEB uses heavy fuel oil, for its base load plants and kerosene (JET A1) for its gas turbines. The CEB also produces energy from its hydro facilities, but in a relatively smaller proportion. For their part, the plants of Independent Power Producers (IPPs) are operated mainly as co-generation facilities, with bagasse as fuel source during the crop season, and coal during the off-crop season. Electricity is also produced from waste and photovoltaic sources but this accounts for a very small portion of the total energy generated.

The total energy generated for the year under review was 2,690.4 GWh. The CEB plants generated 1,218.3 GWh (45.3%), while purchases were of the order of 1,472.1 GWh (54.7%). The energy derived from renewable sources (bagasse, hydro, solar PV and waste-to-energy) accounted for 20.3 % of the total generation, whilst coal-derived energy represented 38.9 %, with the remaining, that is, 40.8 % being produced from fuel oil and kerosene.

## DEMAND PATTERN (ENERGY AND POWER)

The total energy generated was 2,690.4 GWh representing an increase of 1.8 % over last year. The CEB plants generated nearly 1,218 GWh and purchases from IPPs were around 1,472 GWh. The maximum power demand for the year reached 459.85 MW and was registered on 03 March 2015 at 19.30 hours. This represents an increase of 13.65 MW over the maximum demand of 2014 (446.2 MW).

The various outputs are tabulated below:

SECTOR	FUEL SOURCE	ENERGY (GWh)	(%)
Hydro	Water	121.88	4.5
Thermal	Fuel Oil & JET A1	1,096.48	40.8
Purchases (CPP)	Bagasse	6.01	0.2
Purchases (IPP: Coal + Bagasse)	Coal & Bagasse	1,421.95	52.81
Purchases (Landfill)	Landfill gas	20.36	0.8
Purchases (Sarako)	Solar	21.36	0.8
Purchases (SSDG & MSDG)	Solar	2.39	0.09
Total		2,690.43	100

The proportion of renewable energy to non-renewable energy was as follows:

FUEL S	OURCE	ENERGY (GWh)	(%)
	Bagasse	381.19	14.2
Renewable	Hydro	121.88	4.5
	Solar PV	23.76	0.8
	Waste-to-Energy	20.36	0.8
TOTAL % RENEWABLE ENERGY			20.3
	Fuel Oil	1,094.47	40.7
Non-Renewable	Coal	1,046.77	38.9
	JET A1	2.00	0.07
Total % Non-Renewable Energy			79.7

## **OPERATION AND MAINTENANCE**

While the CEB focused on meeting the growing demand, emphasis was also laid on maintaining high reliability and availability of existing generating sets. Major overhauls were successfully completed on all units in power stations, as planned. It is to be pointed out that no major breakdown was experienced during 2015.

## THERMAL

## FORT GEORGE POWER STATION

Total energy generated was 667.28 GWh, i.e. 54.8 % of CEB's generation and 24.8 % of total energy generated.

The table below shows the cumulative running hours of each unit as at 31 December 2015.

	RUNNING HOURS		
UNIT	During Year 2015	Since commissioning	
G1	7,015	160,389	
G2	7,159	160,054	
G3	7,842	138,798	
G4	7,335	117,785	
G5	7,653	114,992	

Units 1 & 2 have clocked more than 160,000 running hours and are in service since 1993. They had an average running hours of 7,000 each for year 2015.

Units 3, 4 and 5 had an average of 7,600 running hours each. Scheduled maintenance was successfully carried out on all the five units. An engineer from MES Technoservice visited the power station during the major overhaul of Unit 3 in November 2015. A general inspection of the engine was carried out but no abnormality was noted.

It is to be pointed out that, following a safety bulletin from engine builder MAN Diesel regarding the containment risk of the turbochargers of type NA70 and further to the approval of the Board in July 2015, the contract for the replacement of the turbochargers on Units 4 and 5 was awarded to MAN Diesel & Turbo Ltd. The delivery is scheduled for April 2016 and retrofitting on engines will be carried out in July-August 2016.

As regards the project for the construction of a new HFO pipeline from Fort George to MPA's New Oil Jetty, a request was made to the Mauritius Ports Authority (MPA) to extend the waiver for another five years in order to continue using the existing pipeline at Quay No. 1 for unloading of fuel oil. During a meeting held in August, the MPA informed the CEB that the project of 'Re-routing of HFO pipeline from Fort George to Oil Jetty' was being put on hold. This decision in favour of the CEB resulted in a saving of the order of Rs 75 Million which was earmarked for the project.

Other capital projects that were successfully implemented during 2015 were:

- Replacement of critical parts on Units 1, 2 and 3;
- Purchase of turbocharger rotor for Unit 3; and
- Inspection and refurbishment of three HFO storage tanks, each of capacity 6500 m<sup>3</sup>.

## FORT VICTORIA POWER STATION

Total energy produced was 268.80 GWh, i.e. nearly 10 % of the total energy generated.

	RUNNING HOURS		
UNIT	DURING YEAR 2015	SINCE COMMISSIONING	
Wartsila G1	4,398	19,876	
Wartsila G2	3,649	23,177	
Wartsila G3	4,813	16,337	
Wartsila G4	3,680	12,427	
Wartsila G5	2,806	11,866	
Wartsila G6	3,623	11,532	
MAN G11	1,368	102,957	
MAN G12	1,205	88,511	

The table below shows the cumulative running hours for each unit at Fort Victoria Power Station.

All the engines performed satisfactorily and no major incident was noted during the year 2015. Four engines, namely Wartsila Units 2, 3, 4, and 5, underwent their respective scheduled major maintenances.

The four new Wartsila Units from FVPS Phase 2 Redevelopment Project, which were commissioned in July 2012, performed satisfactorily. Prior to the expiry of their special extended warranty on the nozzle rings, inspection was carried out on the turbocharger units of Wartsila engine G3. Abnormal cracks were again detected on the nozzle rings fitted on the turbocharger units of the said engine. Burmeister & Wain Scandinavian Contractor A/S (BWSC), the main Contractor for the FVPS Phase 2 Redevelopment Project, was called upon to remedy the situation, and full Inconel nozzle rings will be supplied and fitted on the engines, at their own costs, during the course of year 2016.

MAN B&W Engines G11 and G12 were operated for 1,368 and 1,205 hours respectively during the year and produced 19.47 GWh. No major problem was encountered with those engines.

The other capital projects completed at Fort Victoria Power Station during year 2015 was asphalting of the yard near MAN Powerhouse, and the complete refurbishment of HFO Tanks No. 4 and 5.

## LES GRANDES SALINES PROJECT Design of 6 x 6500 m<sup>3</sup> Heavy Fuel Oil Storage Tanks & Construction of 3 x 6500 m<sup>3</sup> Tanks

On 9 February 2015, the Central Procurement Board (CPB) informed the CEB of the outcome of the bidding exercise for the construction of a 3 x 6500 m<sup>3</sup> HFO tank farm. After the Notification of Award, one unsuccessful bidder lodged a challenge at the Independent Review Panel (IRP). On 2 July 2015, the IRP did not find any merit in the challenge of the unsuccessful bidder and gave a ruling in favour of the CEB and the CPB.

The Letter of Award was issued to the successful bidder, Arun Fabricators, on 29 July 2015 and, after submission of all the necessary contractual documents, the site was handed over to the contractor. However, when the Forestry Department was approached for clearance in relation to the felling of trees and clearing of the site, a vast tract of marshy/wet land covering nearly 20% of the site was identified. It is to be pointed out that Les Grandes Salines area is not on the Environmentally Sensitive Areas (ESA) list of 2009 of the Ministry of Environment, Sustainable Development, Disaster and Beach Management.

Representations were made to the Ministry of Environment, Sustainable Development, Disaster & Beach Management and the Ramsar Committee, with the support of our parent Ministry, the Ministry of Energy and Public Utilities, for obtaining the necessary clearances for the implementation of the project.

On 30 October 2015, the Ramsar Committee exceptionally approved the grant of Ramsar Clearance for the project, subject to a number of conditions. On 6 January 2016, the Ministry of Environment, Sustainable Development, Disaster and Beach Management approved CEB's application for the relocation of the tanks to the southern end of the site. It is to be noted that the proposed CCGT plant contemplated at Les Grandes Salines would be shifted to another site as the land available for setting up the plant would be insufficient after excluding the wetland and the mandatory 30 metres buffer zone around the wetland.

Work on the tank farm would start by mid-January 2016 and it is expected that the three tanks and the whole installation would be ready for operation in early 2017.

## SAINT LOUIS POWER STATION

Total energy production was 158.3 GWh, i.e. 5.9 % of the total energy generated. The Wartsila Units generated 133.68 GWh and the Pielstick engines generated 24.62 GWh.

The Pielstick generating sets, (Units 1 to 4), although having reached the end of their serviceable life, had to be operated for an average of about 1,165 hours per unit for peak looping. It is to be pointed out that these engines were commissioned in the late 70s and are no longer compliant to present-day regulations of the Environmental Protection Act. However, they are being kept in running condition, even at a high cost, in order to have adequate generating capacity, pending the redevelopment of the Saint Louis power station.

The pulling down and carting of Powerhouse G5/G6 started in October 2015 and the works were completed in November 2015.

The Wartsila Units performed satisfactorily, clocking an annual average of 3,902 operating hours each. Major overhaul as well as 36,000 hours maintenance were carried out on Wartsila Unit 8 during the reporting period.

The tender for the St Louis redevelopment was re-launched in July 2015. The evaluation of the offers was undertaken at the CPB. The preferred bidder retained for this project was Burmeister & Wain Scandinavian Contractor A/S (BWSC).

## NICOLAY POWER STATION

The three Gas Turbine Units clocked a total of 126 operating hours for the year 2015, generating 2 GWh, i.e. 0.07 % of the total energy generated.

A "boroscopic" inspection was carried out in March on all units to ascertain the healthiness of the turbine hot gas path and combustion components.

A major overhaul of the Alternator and Exciter was carried on Unit 2, which included the renewal of the rotor inter-polar connection and the refurbishment of the stator radial and lateral wedging.

Other major projects completed / in progress were as follows:

- Procurement of new digital generator protection relay for Unit No 1;
- Procurement of turbine lubricating oil purification plant;
- Refurbishment of fuel storage Tanks No 7 & 8;
- Renewal of Exhaust Silencer Set on Unit 1
- Refurbishment of Inlet Filter House on Unit 1

### **HYDRO**

The total generation from the Hydro Power Stations for the year 2015 was 121.88 GWh, i.e. 10 % of CEB's generation and 4.5 % of the total energy generated.

The scheduled maintenance at all hydro power stations was carried out successfully during the year, with no major problems encountered.

It is worth mentioning that the electricity generated from hydro in 2015 was 30 % higher than the normal production due to high rainfall throughout the year.

The major projects initiated or completed during 2015 were:

• Refurbishment and installation of Guide Vanes Servomotor on Unit G1 at Champagne;

- Replacement of new alternator on Unit G2 at Ferney; the replacement of the second alternator is scheduled to be completed in 2016;
- Upgrading of Turbine Controller on both Units G1 & G2 at Ferney Power Station (completed);
- Installation of new diesel standby set at Champagne Power Station, scheduled for completion in January 2016;
- Upgrading of Governor System of Unit G1 at Tamarind Falls Power Station, scheduled for completion in 2016;
- Upgrading of 6.6 kV Switchgear (Riser Panel) and SEPAM protection on both units at Ferney (completed);
- Upgrading of governor hydraulic system of turbine unit at AIA Power Station, scheduled for completion in 2016; and
- Conduct of feasibility study by EDF, France for increasing dam capacity at Sans Souci Dam.

### LARGE SCALE INDEPENDENT POWER PRODUCERS (LSIPPs)

The total energy purchases for the year from the LSIPPs were 1,469.67 GWh, which corresponds to a 2.1% decrease, as compared to the year 2014.

Overall, the LSIPPs accounted for 54.6% of the total energy sent out to the grid. The total amount of energy sent out on Bagasse and Coal were 381.2 GWh and 1,046.8 GWh respectively. The total amount of energy sent out from the Landfill Gas-to-Energy Facility and the Solar Farm were 20.4 GWh and 21.4 GWh respectively.

Prior to the expiry on 31 December 2014 of the Power Purchase Agreement (PPA) with Médine Limited (ML), the latter, through Médine Sugar Milling Limited (MSML), signed a new PPA with the CEB in September 2014. MSML has upgraded ML's existing bagasse-fired steam power plant at Bambous from a name-plate capacity of 9.5 MW to 21.7 MW. The upgraded power plant is expected to produce some 23 GWh of bagasse-fired energy annually. The facility achieved Commercial Operation Date on 20 November 2015.

An agreement was signed on the 16 June 2015 for the extension of the operation of Consolidated Energy Limited (CEL) from 31 July 2015 to 31 December 2018. This agreement became effective on 31 July 2015, following the obtention by CEL of the extension of its EIA Licence for operation of the power plant up to December 2018.

The construction of the wind farm of Eole Plaine des Roches Ltee (EPR), having a name-plate capacity of 9.35 MW and comprising eleven wind turbines, was initiated in February 2015. The wind farm is scheduled to start commercial operation in February 2016.

The commissioning by Consortium Suzlon Padgreen Co Ltd (CSP) of another wind farm at Curepipe Point, which was rescheduled for the year 2016, would most probably be further delayed on account of legal issues regarding planning clearance.

On 13 March 2015, the Cabinet decided not to proceed with the coal power plant project of the (Mauritius) CT Power Limited (MCTP) at Pointe aux Caves, taking into consideration the circumstances surrounding the award of contract and the failure of the promoters of the project to submit evidence of their financial capacity or the sources of funding. MCTP has sought judicial review of this Cabinet decision.

# SMALL SCALE DISTRIBUTED GENERATION (SSDG)

In the past, the CEB and the Large Scale Independent Power Producers (LSIPPs) were the only producers of electricity for the whole island. However, in the year 2010, in order to democratise access to the CEB grid and to allow the public at large to become small independent power producers (SIPPs), the Government and the CEB came up with the Small Scale Distributed Generation (SSDG) scheme. This scheme allowed the public at large to produce electricity primarily for their own consumption and export the surplus energy to the CEB grid, for which they were paid as per a predetermined Feed-In Tariff (FIT). This FIT was made very attractive in order to kick start that new project in Mauritius and also because the investment in such Renewable Energy projects were very high at that point in time. The project was initially launched for 2 MW in December 2010 and was later extended to 3 MW in December 2011.

Another scheme was launched simultaneously in December 2011, reserved exclusively for four types of institutions, namely Public, Educational, Charitable and Religious (PECR) due to the large demand for SSDG installations from these institutions. This scheme was launched for 2 MW and, in this case, the surplus energy exported to the CEB grid was remunerated at CEB's average marginal cost of electricity production.

During the year 2015, 11 SSDGs were commissioned under the FIT Scheme for a total capacity of 88.6 kW, while for the PECR Scheme, the number of SSDGs commissioned totalled 27, with a total capacity of 356.4 kW.

As at 31 December 2015, the total number of SSDGs commissioned under the FIT and PECR Schemes and their equivalent capacities were as follows:

SCHEME	No. OF SSDG COMMISSIONED (units)	CAPACITY (kW)
FIT (Mauritius)	239	2,064
FIT (Rodrigues)	26	167
PECR	66	835
TOTAL	331	3,066

# CEB 2015 SSDG NET METERING SCHEME

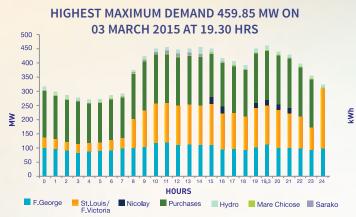
Due to the high demand from the public, and in line with the objective of the Government and the CEB to attain 35% of renewable energy in its energy mix by the year 2025, another SSDG Scheme was launched in August 2015. The scheme, named the "CEB 2015 SSDG Net-Metering Scheme", aimed primarily at giving CEB customers the opportunity to produce their own energy from renewable energy sources such as photovoltaic and wind.

In this scheme, the energy generated by the SSDG is first used to meet the load demand of the premises and, thereafter, the surplus energy is exported to the CEB grid and stored in the form of kilowatt-hour (kWh) credits in the owner's account. This credit is used to net off the amount of energy imported by the premises at night, or when the energy generated by the SSDG is not sufficient to meet the load demand.

Under this Scheme, the SSDG owner will benefit from the energy storage capacity of the CEB grid at no cost, and will not be required to make investment in costly battery energy storage systems. The imported energy will be net off with the surplus energy exported by the SSDG, thus helping the SSDG owner reduce his monthly electricity bill. This monthly saving on electricity bill can be used to pay for the investment made in the acquisition of the renewable energy system. Moreover, part of the initial investment in a Solar Energy Unit can be recouped through a relief in tax payment.

Given that the net metering concept is new, the scheme was launched on a pilot basis for a total capacity of 5 MW in Mauritius and 200 kW in Rodrigues. Out of the 5 MW allocated for Mauritius, 4 MW has been reserved for Category 1, which consists of single-phase Domestic Customers excluding IRS, RES, and 1 MW for Category 2 which consists of three-phase Domestic Customers, IRS, RES and other customers having a declared load below 20 kVA.

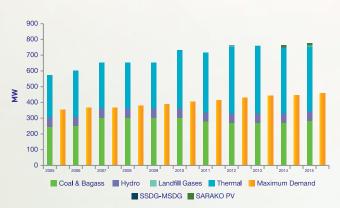
For Rodrigues, 150 kW was earmarked for Category 1 customers and 50 kW for Category 2 customers. As at December 2015, some 1,300 applications had already been received under this scheme. The applications are being processed as per the connection procedures stated in the SSDG Grid Code 2015, on a *first come, first serve basis.* 



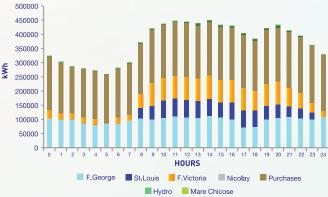
**HIGHEST THERMAL PRODUCTION** 4,876,888 kWh ON 24 FEBRUARY 2015



**INSTALLED CAPACITY AND** MAXIMUM DEMAND 2005-2015



MAXIMUM UNITS GENERATED 9,218,787 kWh ON 18 DECEMBER 2015





**HYRO PRODUCTION 2015** 

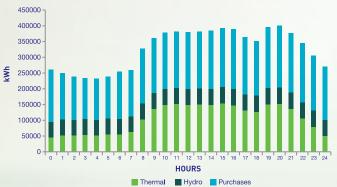


# **CUMULATIVE**



**OPTIMISING OUR RENEWABLE ENERGY POTENTIAL** 

MAXIMUM HYDRO GENERATION 1,225,023 kWh ON 10 FEBRUARY 2015



HIGHEST PURCHASES 4,811,950 kWh **ON 29 DECEMBER 2015** 



	Plant Capacity (MW)	Effective Capacity (MW)	Units Generated (kWh)	% Units Generated	Units Exported (kWh
CEB - HYDRO					
L Champagne	30.00	28.00	47,061,000	1.75%	46,763,94
2 Ferney	10.00	10.00	33,188,998	1.23%	33,097,54
3 Tamarind Falls	11.70	9.50	18,934,300	0.70%	18,846,34
4 Magenta	0.94	0.90	2,331,200	0.09%	8,437,65
5 Le Val	4.00	4.00	8,501,138	0.32%	3,271,79
6 Cascade Cécile	1.00	1.00	4,280,123	0.16%	4,265,25
7 Réduit	1.20	1.00	3,287,244	0.12%	830,211
3 La Ferme	1.20	1.20	2,103,164	0.08%	2,315,74
9 La Nicolière F.C	0.35	0.35	834,912	0.03%	1,357,95
0 Midlands	0.35	0.35	1,361,793	0.05%	2,087,31
TOTAL HYDRO (A)	60.74	56.30	121,883,872	4.53%	121,273,317
CEB - THERMAL					
1 St. Louis	89.00	66.60	158,390,804	5.89%	152,464,27
2 Fort Victoria	109.60	107.00	268,801,405	9.99%	263,081,76
3 Nicolay	78.40	75.00	2,005,800	0.07%	1,597,62
4 Fort George	138.00	134.00	667,278,200	24.80%	638,962,71
TOTAL THERMAL (B)	415.00	382.60	1,096,476,209	40.75%	1,056,106,38
TOTAL CEB (A+B)	475.74	438.90	1,218,360,081	45.28%	1,177,380,14
IPPs - PURCHASES <sup>(1)</sup>					
1 CTSAV	90.00	74.00	471,565,396	17.53%	471,565,39
2 CEL - Beau Champ	28.40	22.00	141,513,062	5.26%	141,513,06
3 CTBV - Belle Vue	71.20	62.00	425,614,270	15.82%	425,614,27
4 F.U.E.L	36.70	27.00	161,106.079	5.99%	161,106,07
5 CTDS	32.50	30.00	222,144,950	8.26%	222,144,95
6 Médine <sup>(2)</sup>	21.70	11.00	6,009,733	0.22%	6,009,73
7 Sotravic	3.45	3.00	20,358,331	0.76%	20,358,33
8 Sarako <sup>(3)</sup>	15.00	15.00	21,361,740	0.79%	21,361,74
9 SSDG - MSDG <sup>(3)</sup>	2.90	2.90	2,399,815	0.09%	2,399,81
TOTAL PURCHASES (C)	301.85	246.90	1,472,073,376	54.72%	1,472,073,37
GRAND TOTAL (A+B+C)	777.59	685.80	2,690,433,457	100%	2,649,453,51

PLANT CAPACITIES, UNITS GENERATED AND EXPORTED : YEAR 2015

Note 1: Energy purchased by IPPs is metered at the CEB's Substation and represents exported figures to the grid Note 2: Operates only during Crop Season; 9 MW for first two months of Crop Season Note 3: The Effective Capacity of the PV Plants depends upon the availability of sunlight

Effective Capacity (MW)	e Capacity (MW) Crop	
Belle Vue	46	62
F.U.E.L	20	27
CTSav	65.5	74



# **TRANSMISSION AND DISTRIBUTION**

With the commitment to improving the quality and reliability of supply, further initiatives were launched on the Transmission and Distribution side during the year under review. New substations and networks were commissioned and improvements were brought to existing parts of the networks.

The major activities during the year 2015 and the key operational statistics are highlighted below.

# SYSTEM PERFORMANCE

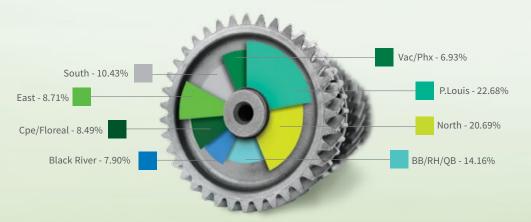
On the whole, the general performance of the Transmission and Distribution system was satisfactory for the year under review. The number of trips recorded amounted to 17 (2014:30) and these were mostly associated with lightning and other transients. The networks were, however, subject to some disturbances caused by the passage of Cyclone Bansi in the proximity of Mauritius; these were promptly cleared.

Six load shedding incidents were experienced in 2015, when the system frequency dropped to 48.2 Hz. on account of generation shortage. Two of the load-shedding incidents, which occurred respectively on 28 February and 16 April, were caused by the tripping of all engines at Fort Victoria Power Station. The disconnected load, through load-shedding operations, was approximately 21 MVA. It is to be noted that Fort Victoria Power Station is one of the largest generating stations with 107 MW generating capacity. The most severe load-shedding incident, which occurred on 14 June at 09.19hrs, was associated with the tripping of the 66 kV line Union Vale/ Champagne resulting in the tripping of both CTSAV engines which were exporting around 55 MW. Ten feeders, representing a load of approximately 33 MVA, together with an additional load of 17 MVA from Union Vale and Combo Substations were disconnected from the system. The total disconnected load of 50 MVA represented around 20% of the demand at that particular moment.

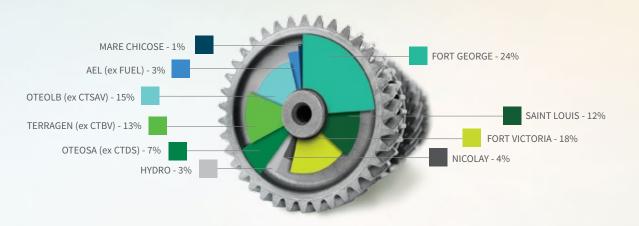
# SYSTEM MAXIMUM DEMAND

The maximum demand for the year reached 459.85 MW at 19.30 hrs on Tuesday 03 March 2015. This represented an increase of 3.0% over the previous year. It is worth noting that the average increase in demand over the period 2009-2014 was 2.81%.

The approximate load distribution over the island on a regional basis at the time of the highest demand, and the generating plants contribution at the time of the highest demand are shown hereunder.

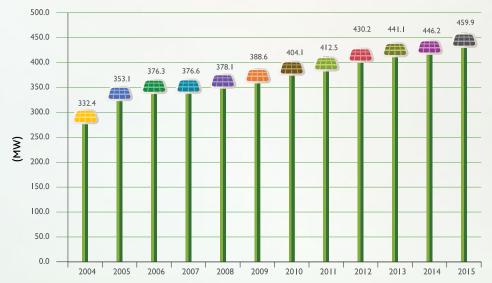


### PERCENTAGE LOAD DISTRIBUTION PER REGION ON 03 MARCH 2015 AT 19:30 HRS



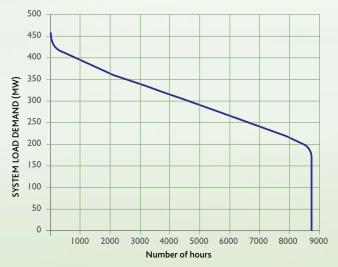
### GENERATING STATIONS' CONTRIBUTION AT THE TIME OF MAXIMUM DEMAND - 03 MARCH 2015 AT 19:30 HRS

The yearly maximum demand for the last twelve years, as well as the load duration curve for the year 2015 are shown hereunder:



### MAXIMUM DEMAND FOR PERIOD 2004 - 2015





The average load factor for the year, based on monthly average data, was 73.57%, representing an increase of 1.24% over 2014. This indicates that there has been a more efficient use of electrical plant during the review period.

# TRANSFORMER CAPACITY, NETWORK GROWTH, AND SYSTEM LOSSES

# TRANSFORMER CAPACITY

At the end of the year, the total installed transformer capacity in the major substations was 2,292 MVA, whilst for the distribution substations the total installed capacity reached 1,755 MVA, thus making a total of 4,047 MVA installed on the system.

# **GROWTH OF NETWORK**

In the course of the year, the overhead transmission and distribution network was extended by 182.8 km, thus bringing the total length of overhead lines to 8,871 km. This figure does not include a stretch of 2.5 km of 66 kV overhead transmission lines associated with the undergrounding of the existing network at Bois Sec (I.C.W. Avalon Golf Course).

The underground transmission and distribution network was extended by 88.7 km during the year to bring the total route length to 768.5 km, which includes 25.6 km of 66kV underground cables.

The grid lengths as at December 2015 were as follows:

DATA	TRANSMISSION	DISTRIBUTION MV	DISTRIBUTION LV
Voltage Levels (kV)	66	22/6.6	0.400/0.23
Length of Overhead Cables (km)	289	3,023	5,558
Length of Underground Cables (km)	25.5	460	283

# SYSTEM LOSSES

The overall system losses for the year under review were contained to 6.59%. This figure compares favourably with the figure recorded for 2014 (6.86%). The figures for the last five years are reproduced for comparison.

YEAR	2011	2012	2013	2014	2015
Losses (%)	7.95	7.65	7.1	6.86	6.59

### TRANSMISSION

In order to cope with the load growth and to channel energy from both the CEB and the IPP generating plants, the following works were carried out on our transmission networks during the year 2015.

# 66 kV NETWORKS

# Refurbishment of 66 kV Transmission Line

The existing 66 kV Wooton – Champagne, Henrietta – St Louis, Henrietta – Chaumière, Dumas – Belle Vue – Amaury – FUEL lines, which are more than 30 years old, require proper refurbishment in order to extend their working life. During the year under review, major reconstruction works were undertaken for the systematic replacement of corroded members in order to strengthen and increase the lifespan of the existing lines. Corrosion protection treatment and replacement were also carried out, subject to the availability of power cuts.

In 2015, maintenance and refurbishment works were carried out on 66 kV Champagne – FUEL, Henrietta – Chaumiere 1 & 2, Amaury – FUEL 1 & 2, St Louis – Chaumiere 1 & 2, Wooton – Ferney – Champagne, Dumas – Belle Vue 1 & 2, CTBV 1 at Belle Vue Harel, and Belle Vue – Amaury 1 & 2. Maintenance of tower bases, corrosion treatment, painting of towers, replacement of rusty strain insulator sets, rotten cross-arms, rotten landing plates, replacement of earthing and phase fittings, T plates and shackles were carried out on towers on the above lines. Works were also undertaken for the replacement of rotten fittings on the 132 kV Wooton-Dumas, Wooton – Amaury, Dumas – Amaury, St Louis - Dumas 1 & 2, and Wooton – L'Avenir lines.

It is to be highlighted that an audit exercise of the Transmission lines was conducted in late 2015 by an expert from EDF. Further to his recommendations, a tender for the replacement of severely rusted members on towers of 66 kV Champagne – Wooton line was prepared and would be floated in early 2016. The implementation of works, subject to award of the above tender, is scheduled for early 2016.

### Henrietta - Case Noyale - Combo 66 kV Line

The strengthening of the line (about 60 km) was planned to be completed by July 2009. The work was delayed due to issues related to Le Morne Cultural Heritage. The extension of HT network in the vicinity of Le Morne area had to be carried out using underground cables instead of overhead lines as originally planned. After overcoming all wayleave problems, the line works were completed by late 2014 over a stretch of about 60 km, consisting of about 7.3 km of underground 66 kV cables and 52.7 km of overhead 66 kV lines. The line is presently energised at 22 kV until the completion of Case Noyale 66/22kV substation, scheduled for 2016.

In 2015, stringing of OPGW conductor was carried out between Combo and Case Noyale over a stretch of approximately 26 km.

### 66 kV lines from Beau Plan to Riche Terre - Jinfei Economic Zone

The erection of the 66 kV double-circuit overhead line, that will supply the 66/22 kV substation at Riche Terre, was completed over a route length of 6.5 km. Cable-laying works for about 1.5 km of 66kV underground cable were scheduled to be carried out during the period September to December 2015, for connection to the Jinfei 66/22 kV substation. However, due to delay in the Avalon project, site constraints at La Tour Koenig for the laying of cables, and wayleave problems with RDA, the 66kV cable works at Jinfei have been re-scheduled for early 2016.

### 66 kV lines to supply La Tour Koenig

The La Tour Koenig 66/22 kV Substation will be energised from the existing 66 kV St. Louis – Chaumière lines and will involve the erection of 0.5 km overhead network and the laying of some 1.3 km of underground cables.

Civil and pipe-laying works were completed in 2010. However, on account of the urgency of the Fort Victoria Re-development Project, which required the replacement of existing old oil-filled cables by new underground cables between St Louis and Fort Victoria, the earmarked cables for La Tour Koenig project were re-allocated to the latter project and new cables were ordered.

The cable-laying works were carried out only in late 2015 on account of other ongoing similar projects. The works were further delayed due to rainy weather and a number of issues with the local inhabitants. The 66 kV St Louis – La Tour Koenig and La Tour Koenig – Chaumière lines were finally commissioned and energised on 23 December 2015.

# **OPGW on Transmission lines**

The purpose of optical ground wire (OPGW) is to shield the transmission lines against lightning-stroke effects, while also providing communication facilities between the System Control and all major 66/22 kV substations. It is planned to replace all traditional earth conductors on transmission networks by OPGW.

In 2015, stringing of OPGW was carried out on 66 kV St Louis – Chaumière, 66 kV La Tour Koenig, 66 kV Beau Plan – Riche Terre, and 66 kV Combo – Case Noyale. By the end of the year, 272 km of OPGW had been installed, corresponding to 79% of total length contemplated.

# 66 kV Underground Cables from Saint Louis to Fort Victoria

Implementation of the Fort Victoria Re-development Project has relied on the use of the existing oil-filled 66 kV cables between Saint Louis and Fort Victoria for the evacuation of power from the newly-installed generators. The CEB was advised in early 2011 by BWSC, the contracting firm responsible for the implementation of the project, to consider the replacement of two existing 66 kV cables which are more than 30 years old. This work involves the laying of two underground 66 kV cables from Saint Louis to Fort Victoria over a distance of approximately 2.3 km. Cable-laying works, which suffered from unforeseen delays due to non-permission of the Traffic Management and Road Safety Unit for road closures, were completed in late 2014.

It is worth noting that, following the occurrence of a fault on the existing oil-filled 66 kV interconnector Fort Victoria – St Louis 1, one of the newly-laid 66 kV cables was temporarily commissioned in November 2014 to enable reliable export of electrical power from Fort Victoria to St Louis. This cable was de-commissioned and de-energised in March 2015 after repairs effected to the faulty 66 kV cable St Louis – Fort Victoria No. 1. Commissioning of the new 66 kV cables are scheduled to be carried out after completion of works associated with the new 66 kV switching station at Fort Victoria.

### 66 kV line from Belle Vue to Sottise

Construction of a second 66 kV line from Belle Vue Substation to Sottise Substation will help reinforce the 66 kV transmission grid and improve reliability of power supply to the Northern part of the island. The route length of the proposed line is about 10 km.

Survey works were completed and way-leave was secured, except for a stretch of land in the vicinity of Circle Square at Sottise. Erection of poles was completed in regions where way-leave was obtained and erection of part of the line was in progress. Construction files for the undergrounding of existing 22 kV and LV overhead networks along a proposed corridor over a distance of 5 km have been prepared. Implementation of these files has been re-scheduled for 2016 (after completion of all way-leave formalities) and works are expected to be completed during the same year.

Design for additional bays at Belle Vue and Sottise has been completed, and the erection of the bays is expected to be completed by mid-2016. The implementation of this new 66 kV network will be pursued in 2016 and is expected to be commissioned in early 2017.

### 66 kV line from Fort Victoria to Neotown

The requirement of 60 MW of power in 2016 for the Neotown Project would have necessitated the laying of about 1.3 km of 66 kV underground cables from the proposed 66 kV substation at Fort Victoria to the new 66/22 kV substation at Les Salines. Excavation works and the laying of a major portion of UPVC pipes were carried out in 2012.

The implementation of the 66 kV cable works had to be cancelled following Government's decision in March 2015 not to proceed with this project.

### Pointe aux Caves - Chebel 132 kV Lines - CT Power Project

Following the EIA tribunal's decision to grant an EIA license to CT Power and the signature of an amended PPA in December 2013, formalities were initiated for the laying of approximately 8 km of underground 132 kV cables for the evacuation of 110 MW of power from the new coal-fired power station to be constructed at Pointe aux Caves to La Chaumière Substation. Way-leave formalities for the laying of these underground cables were almost completed. Implementation works were cancelled following Government's decision in early 2015 not to proceed with the CT Power Project.

### Undergrounding of 66 kV at Bois Sec – Avalon Golf Estate Project

The implementation of the Avalon Golf Estate Project has necessitated the relocation and undergrounding of part of the existing 66 kV Henrietta – Combo transmission network at Bois Sec, over a distance of approximately 2.3 km. Works, which were delayed due to bad weather, were completed in late 2015.

### 66/22 kV MAJOR SUBSTATIONS

### Case Noyale 66/22 kV Substation

The Case Noyale Substation will improve the quality and reliability of supply to existing hotels and customers in the Southern and Western parts of the island, while providing power to the various IRS projects located at La Balise (Tamarin), Valriche (Bel Ombre), Matala(Yemen), Les Salines and Ile-aux-Bénitiers.

Civil works, which started in early 2015, are expected to be completed in early 2016. It is to be noted that the implementation schedule was initially delayed due to bad weather and the spongy nature of the soil. The extent of the civil works was also increased to cater for the construction of two additional bays. (BESS and PV injection). Partial handing over is planned for February 2016 so as to allow the CEB to proceed with electrical works in the building. Commissioning of the substation is scheduled for end of September 2016.

### Jinfei 66/22 kV Substation

This substation is being constructed to cater for the projected load of the Jinfei Economic Zone, as well as for the future load growth in this part of the island.

The setting up of SCADA equipment and cabling was completed on the 22 kV switchgear. Installation of electrical equipment was delayed due to unforeseen circumstances. It is to be noted that the installation of Power transformers (67 tons each) could not be effected due to problems encountered with the poor compaction of the asphalt in the driveway. Tender for the supply and fixing of precast concrete cover slabs in cable duct at Jinfei Substation was awarded in early 2016. The substation is now expected to be commissioned by the first quarter of 2016.

### Bus Zone Protection at 66 kV Anahita, Dumas and Union Vale Substations

In line with the recommendation of PB Power, bus zone protection schemes were implemented at Anahita and Union Vale substations. Installation of 66 kV bus zone protection at Dumas Substation was in progress and was scheduled to be completed in 2016.

### Additional 22 kV Panel at Amaury Substation - Eole Plaine des Roches Project

The connection of the proposed Wind Farm Eole Plaine des Roches (EPR) to the CEB grid has involved the laying of underground cables over a distance of 6 km, from Plaine des Roches to Amaury, and the installation of one additional 22 kV panel at Amaury. The CEB has provided assistance to EPR in connection with the laying of the underground cables and has carried out all jointing works. Works, associated with this interconnection facility, were completed and the network was commissioned in December 2015 so as to allow EPR to receive power for its commissioning tests, and to achieve COD by mid-Jan 16 as per the ESPA. It is to be noted that the cost of the interconnection facility at Amaury will be equally shared between the CEB and EPR.

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### 66 kV Bay Curepipe Point at Henrietta Substation

The Suzlon/Padgreen Wind Farm Project at Curepipe Point was originally expected to be operational in mid-2015, but implementation of the project was significantly delayed due to clearance issues. Connection of this new wind farm to the grid would require the construction of an additional 66 kV bay at Henrietta Substation.

Civil works for installation of electrical equipment were completed back in 2013, and the electrical equipment had already been procured. Installation and commissioning of the electrical equipment will be carried out once the promoter obtains all clearances to proceed with the project.

### Erection of 66 kV Bays at Henrietta and Combo Substation for Case Noyale 66 kV Line

In connection with the construction of the Case Noyale 66/22 kV Substation, additional 66 kV bays would be required at Henrietta and Combo substations. The erection of the 66 kV line was completed in 2014. Commissioning of the line as well as the commissioning of the Case Noyale 66/22 kV Substation are scheduled for 2016.

### La Tour Koenig 66/22 kV Substation

This substation will provide power to the Industrial Zone of La Tour Koenig, while relieving our existing 22 kV feeders in this region.

The installation of substation equipment, which started in September 2010, was severely hampered by a major theft in 2012. The switchgear panel's missing parts were received in early 2014. Flooring levelling works, as recommended by the Technician from Schneider, was carried out in early 2015. The mounting of panels and installation of SCADA facilities were completed, and the 66 kV bus bar was commissioned in December 2015. The commissioning of the power transformers, 22 kV bus bar, and outgoing feeders is scheduled for early 2016.

# 22 kV Substation at Médine

The new 22 kV indoor substation at Médine will be used as an interconnection facility to allow the export of some 9 MW of power by Médine Sugar Estate during the crop season, as well as provide supply to the new development projects at Creek and Jardin d'Anna at Flic en Flac. It will also help to meet the load growth and improve the reliability of supply in the surrounding localities.

Civil works were completed in June 2015 and the 22 kV switchgear panels have already been procured.

Given that the substation would not be ready before the beginning of crop season 2015, a contingency plan was set up whereby it was convened that Médine Unit 1 shall export directly on Médine – Chaumière line, and Unit 2 on Médine – Henrietta line. That setup would remain effective for the crop season 2015 only. Re-conductoring works were carried out on the existing 22 kV lines Médine – Chaumière and Médine-Henrietta to allow for this power evacuation.

# 66 kV Switching Substation at Fort Victoria

This switching station caters for the evacuation of power from the Fort Victoria Re-development Project, and for the supply to the Neotown project at Les Salines. Civil works, which started in early 2014, were completed in December 2015. It is to be highlighted that these works were delayed due to a change in design to cater for drainage problems following flooding complaints from neighbours. Electrical equipment have already been procured and will be installed at a later stage. The commissioning of the switching station is planned for 2017.

# Reconstruction of 22 kV Major Substations

There are presently seventeen 22 kV outdoor oil circuit breakers installed at our outdoor substations islandwide. Replacement of these breakers by SF6 circuit breakers and the renewal of old erratic battery sets are under way.

In 2015, a new battery set and battery charger were commissioned at Caudan Substation. In 2016, the renewal of batteries and battery charger is scheduled at Union Vale, Combo, Nicolay, F.U.E.L, Roches Brunes substations, together with the replacement of outdoor circuit breakers at F.U.E.L and Roches Brunes substations. The reconstruction of Ferney outdoor substation using RMUs is also planned for 2016.

# Upgrading and Extension of La Chaumière Substation

The extension of the switchgear room will allow for the installation of a new control panel associated with the new 66/22 kV substation at La Tour Koenig, and for the relocation of existing control panels presently installed in the existing 22 kV switchgear room. Works were completed in late 2015.

# Upgrading of Security in Major Substations

Following numerous break-ins and the loss of conductors, it was decided to proceed with the construction of 2.4m-high boundary block walls with razor wire on top at La Chaumière, Floréal, Amaury and Henrietta substations.



# DISTRIBUTION

In order to cope with the normal load growth and cater for the demand of new customers, numerous projects were completed in the distribution sector during the year under review.

# 22 kV Rings and Feeders

The under-mentioned projects were implemented in 2015 with a view to improving the reliability and quality of supply, as well as reducing line losses:

- 22 kV Ring Nouvelle Découverte Salazie;
- 22 kV Ring Le Morne Village Berjaya;
- 22 kV Ring Rose Belle Gébert/Mont Fertile;
- 22 kV Ring Mare d'Albert;
- 22 kV Ring Mare Tabac;
- 22 kV Ring Feeders Nouvelle France Wooton & Le Val Motorway Wooton at Beau Climat/ Wireless (4.2 km);
- 22 kV Ring Beemanique (from Soless to Beemanique) (4km); and
- 22 kV Ring Le Morne Village Berjaya (2km).

# **MV Reconstruction and Distribution Network Reinforcement**

In order to enhance the reliability of supply and reduce line losses, the following projects were implemented in 2015:

- Re-routing of part of Nouvelle France Wooton Feeder from Nouvelle France to Beau Climat (6 km);
- Reconstruction of HT network Ferney Union Vale at St Hubert (1 km);
- Re-routing of Ferney Union Vale Le Val from Le Val Substation to St Hubert (5.5 km);
- Re-routing and insulating of part of Feeder Combo La Prairie from Chemin Grenier to Belle Vue; and
- Reconstruction of part of 22 kV Feeder Ferney GRSE Coastal line from Deux Frères to Petit Sable (4.5 km).

# Conversion of 6.6 kV feeders to 22 kV

With the objective of meeting our line losses reduction targets, the following projects were implemented in 2015:

- Stanley Feeder: Conversion of two 6.6 kV transformers (TXs) at Orchard Tower;
- Part of Feeder Floréal Curepipe has been upgraded to 22 kV and 7 TXs converted from 6.6 kV to 22 kV;
- St Paul feeder has been upgraded from 6.6 kV to 22 kV from Cabin St Paul to Nabee;
- Barracks Feeder: Intermediate poles have been erected from Cemetry road to Carreau Laliane and 1 Tx has been converted from 6.6 kV to 22 kV;
- Sodnac Feeder: 4 km bare network has been replaced by HT Torsade and 4 Txs have been converted from 6.6 kV to 22 kV. Conversion of 15 Txs will be carried out in 2016;
- Roche Brunes Feeder: 1.2 km bare network has been replaced by HT torsade and 8 Txs have been converted from 6.6 kV to 22 kV. Remaining conversion of 13 Txs will be carried out in 2016; and
- Berthaud Feeder: 3 km bare network has been replaced with HT Torsade and 13 Txs have been converted.

# Inspection of Poles on 66 kV and Distribution Networks

With a view to improving the security of supply and the reliability of the network, the CEB has embarked on a programme which involves the systematic testing and replacement of insecure wooden poles, and the replacement of all round concrete poles which were erected some 40 years ago.

Some 1,114 HT and LV poles were replaced island-wide during 2015.

# SYSTEM CONTROL

### Implementation of Recommendations of PB Power

In line with the recommendation of PB Power, bus zone protection schemes were completed at Anahita and Union Vale substations. Installation of 66 KV bus zone protection at Dumas Substation is in progress and is scheduled to be completed in 2016. The gradual replacement of static protection relays by numerical units on the distribution system is also in progress. This will improve discrimination and hence the reliability of our distribution system.

In 2015, definite time relays were replaced by IDMT relays at Union Vale Substation.

# SCADA System Upgrade

The 48 Volts DC System is a vital component for the efficient operation of the SCADA facilities. Sixteen substations are equipped with DC system of make Coredel which have been in operation since 1983, and the spare parts for these units are no longer available.

Battery chargers were procured during the first half of 2015 for the replacement of the existing Coredel DC system. The gradual replacement of these units is scheduled to be carried out in 2016. The hardware of the existing front end server together with its operating software were also upgraded.

# **Remote Terminal Unit**

The SCADA System communicates with Remote Terminal Units (RTUs) located at all substations. These RTUs were originally supplied by Microsol, and it was very difficult to get spares because the corresponding cards had gone out of production.

The replacement of Microsol RTUs by RTUs C264, supplied by Areva, was completed at all substations in 2015. All the C264 RTUs are now on line providing communications on both protocols IEC 101 and IEC 104.

### MAJOR DISTRIBUTION PROJECTS

### Supply to Important Customers

Major electrical infrastructural works were performed in 2015 to supply a number of such important consumers, as mentioned below:

- Firemount Textiles Ltd (2 MVA) La Tour Koenig;
- Apollo Tubes Ile d'Ambre (1 MVA) ;
- Empak Freeport Mer Rouge (5 MVA);
- UBP Poudre d'Or (1 MVA);
- Aquaplast Surinam (2 MVA); and
- Super-U Flacq (1 MVA).

# **Important Cable Laying Works**

Cable-laying works associated with the supply to the Azuri Project were completed in 2015.

Electrical infrastructural works to supply the important consumers/projects mentioned below were initiated in 2015:

- Supply to New Cargo & Freeport Zone at SSR Airport (15 km);
- Laying of 22 kV UG cable from Union Vale Substation to BPML at Rose Belle (7.5 km);
- Supply to Morcellement Highlands Rose at Côte d'Or (21 km); and
- 22 kV feeders to supply Morcellement Creek and Jardin d'Anna at Flic en Flac (25 km).

It is to be noted that delays were experienced during project implementation due to the reluctance of various authorities such as the RDA, District Council, Traffic Management Unit and Forestry Department to grant the necessary way-leaves for off-site excavation works.

# SAIDI AND SAIFI INDICES FOR DISTRIBUTION AREAS

The average SAIDI and SAIFI indices for the year under review for the three geographical areas are given below.

Parameters	Units	Areas	2014	2015
		North	2.01	1.77
SAIDI *	Hours	Centre	2.63	3.99
		South	4.84	3.19
		North	0.6	0.52
SAIFI **	Index	Centre	1.08	1.08
		South	2.16	1.44

**SAIDI (System Average Interruption Duration Index)** is the average duration of interruption of electricity experienced by a customer during the year.

**SAIFI (System Average Interruption Frequency Index)** is the average number of times a customer has experienced interruption of electricity during the year.

### MAINTENANCE WORKS

During the year, regular maintenance works, including tree lopping, were carried out on the existing networks with a view to reducing the risks of power outages. Infra-red sensing device for monitoring specific equipment and network analyser were also used to detect any abnormal performance of equipment and ensure quality of supply.



### **STREET LIGHTING**

Surveys were carried out on a fortnightly basis to check the lighting network along highways. Remedial actions were taken to replace any defective street lighting equipment falling under the responsibility of the CEB. The other cases were referred to the Local Authorities concerned for appropriate actions.

### **TREE LOPPING/FELLING**

Numerous trees, which were in proximity to the electricity networks, were felled during the year in order to improve the clearance with overhead cables and conductors. The branches of trees can adversely affect the supply of electricity, especially during windy and cyclonic conditions.



### METER LABORATORY

# Testing, Commissioning and Inspection of Meters

In 2015, some 400 Smart Meters were installed and commissioned at MDI consumer premises and on 22 kV feeders.

Other important activities of the Meter Laboratory included the inspection and verification of MDI metering installation to uncover cases of tampering and under-billing, and the testing of doubtful meters which were forwarded by the Revenue Protection Section.

The Meter Laboratory Section was also involved in the testing of the metering equipment of Independent Power Producers, namely Sotravic Ltd, CEL and CTDS and the commissioning of new meters at Médine S.E. and Aerowatt/Eole Plaine des Roches. Functiontests were carried out at Union Vale (CTSav Meters) and at CTBV to ensure that the switching of tariff coal/ bagasse was being done correctly in the meters.

### Automatic Meter Reading (AMR)

All HT consumers are metered with Smart Meters that have automatic meter reading facilities (AMR meters). Some 6,422 AMR meters comprising MDI, SSDGs, MSDGs and Irrigation consumers are being remotely accessed using Mutidrive Software (Meter Management Software).

The readings, obtained via GPRS network on a monthly basis, are processed by the Revenue Management Section and thereafter migrated to SAP. Inspections are carried out by the Meter Lab officers on site if any doubtful readings and alarms are observed. This project enables billing to be carried out on the 1<sup>st</sup> of every month and accounts for nearly 51% of the total revenue of the CEB.

# **Energy Audit**

The new Energy Audit Scheme involves the installation, on a pilot project basis, of AMR meters in feeder panels at substation levels on 22 kV feeders. These meters are used to monitor feeder loadings, determine losses on the network, and, in some cases, determine cases of fraudulent abstraction of electricity.

In 2015, smart meters, complete with AMR facilities, were installed at Jin Fei, La Tour Koenig, Combo and Coromandel substations. It is to be noted that all data collected by the smart meters are made available to engineering staff for further analysis, as and when required.



# **CUSTOMER SERVICES**

The CEB is repositioning itself as a customer-centric business with a view to attaining excellence in customer service delivery.

More customer-friendly business operations, rapid service delivery, and provision of additional payment channels were among the numerous measures taken during 2015 to provide yet a better service to our customer base which, at the year-end reached 438,749 customers in Mauritius. Special attention was also given to our more vulnerable customers through the provision of various assistance schemes.

# **CUSTOMER SERVICES AND INTERACTIONS**

All customer contacts throughout the island are managed by the Customer Services and Interactions Business Unit, which consists of 15 walk-in centres, 3 stand-alone Cash Offices, and the 130 Helpdesk.

The following projects were implemented to enhance customer services delivery during the review period.

# UPGRADING OF CUSTOMER SERVICE CENTRES

The programme for the complete renovation of our Customer Service Centres (CSCs) island-wide was continued in 2015 with a view to facilitating access to our services by customers, while providing a pleasant working environment for our employees.

The renovation of the CSC at Curepipe was initiated and construction works are expected to start in 2016. The design for the upgrading of Goodlands CSC was also finalised and works are expected to start in 2016.

### SERVICE RESPONSE TIME

The response time to requests from customers is a very important aspect of our service delivery and requires close monitoring. Two Key Performance indicators (KPIs) have been set up to that effect. The first KPI (KPI fins) indicates the average number of days between an application being lodged at the CEB and the first site visit to the customer's premises. The second KPI (KPIp2m) indicates the average number of days between payment being made for a new supply and the effective connection to the CEB grid.

In 2015, a total of 23,542 applications for new electricity supply were received. A first inspection was carried out within an average of 5 days from the date of application, whilst the customer was connected to the grid within an average number of 6 days after payment of security deposit and connection fees.

# **CEB 130 HELPDESK**

The CEB is one of the few organisations in Mauritius which provide emergency repairs on a 24/7 basis through the 130 Helpdesk.

During the year 2015, the 130 Helpdesk successfully handled some 319,693 inbound calls in connection with emergency repairs, enquiries and other requests for information.

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# EXTENSION OF BUSINESS HOURS ON SATURDAYS

The CEB has extended its operating hours to include Saturdays at a selected number of Customer Service Centres. Henceforth, customers who are not able to undertake their transactions, such as payment of bills and application for electricity services, during weekdays can benefit from the extended operating hours.

During 2015, some 50,646 transactions were recorded on Saturdays at these Customer Service Centres.

### **DISCONNECTION FOR NON-PAYMENT**

The disconnection of outstanding accounts is carried out on a regular basis. During 2015, some Rs 40.6 million of outstanding debts were recovered through that channel.

### **REVENUE MANAGEMENT**

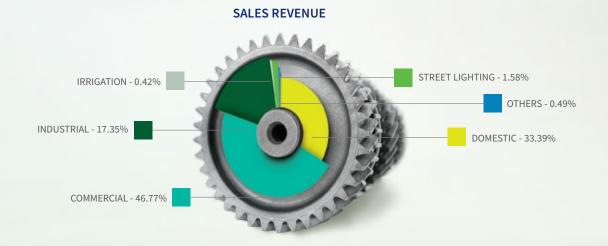
The Revenue Management Unit deals with all customer-related financial functions, namely Meter Reading, Billing, Cash Collection and Debt Recovery.

Its main activities involve ensuring timely billing, invoicing and despatching of invoices, optimising debt collection, and minimising revenue losses.

### **REVENUE COLLECTED**

During the year under review, some 5.3 million meter readings were carried out to enable billing of electricity consumption that generated sales revenue of Rs 14.5 billion. This figure represents an increase of 2.47 % on the previous year.

The sales revenue distribution among the different categories of customers is represented in the pie-chart below:



The revenue progression for the period 2011 to 2015 was as follows:



### **UNDER-BILLING**

During 2015, the revenue recovered from under-billing cases, due to technical problems in metering equipment and inappropriate tariff assignments, was of the order of Rs 4.6 million. It is to be noted that the installation of smart meters has enabled the prompt detection of technical problems and, consequently, under-billing cases have significantly decreased.

### **PROJECTS UNDERTAKEN**

The main projects implemented by the Revenue Management Unit during 2015 were as follows:

### REPLACEMENT OF ELECTRO-MECHANICAL METERS FOR MDI CUSTOMERS

The project for the replacement of electro-mechanical meters by electronic ones, which was initiated in 2010 to enhance accurate billing and mitigate risks of loss in revenue, was continued in 2015. An additional 112 electromechanical meters were substituted, taking the total to 990 replaced meters since the implementation of the project.

### AUTOMATIC METER READING (AMR)

The number of customers equipped with AMR meters reached 3,967 by the end of 2015, representing 51 % of our total sales. It is worth noting that this project has contributed to the improvement in cash-flow through the reduction in the time lag between consumption and billing.

### DIVERSIFYING PAYMENT CHANNELS

In addition to traditional payment modes at the cash desks of the CEB, the counters of Mauritius Post and electronic channels (such as Internet Banking (SBI and MCB) and SBM Billpay), electricity bills can now be settled by SMS through the Orange Money Platform and Point of Sales of Winners Supermarkets.

During the review period, customers were sensitized anew on the advantages of the above electronic payment channels, leading to more than 70,000 electronic transactions, totalling collection of around Rs 120 million.

# PRE-PAID TARIFF FOR VULNERABLE GROUP

The pre-paid metering system consists of the installation of smart meters at customers' premises, which are equipped with a special modem to communicate with a central server using the mobile telephony technology. The customer can purchase electricity credits at retailers' points of sale as they do for pre-paid mobile telephones.

The project was launched in September 2013 by the Ministry of Social Integration and Economic Empowerment in line with Government policy to eradicate poverty. It was meant to target some 1,600 socially vulnerable customers, after the conduct of a pilot phase.

Due to technical problems with the pre-paid communication and billing platform, coupled with a lack of interest shown in the project by some stakeholders, a decision was taken in November 2015 to terminate the existing pilot project. It was also decided to review the technical infrastructure so as to be in line with new technological developments. The scope of the project would be also enlarged.

# **FUTURE PROJECTS**

The following projects have been earmarked by the Revenue Management Section for 2016:

### AUTOMATIC METER READING (AMR)

The communication between meters and the CEB server is presently made through MT (Orange). In order to enable wider deployment of this facility, discussions have been undertaken with other telecommunication companies.

# **ELECTRONIC DESPATCH OF ELECTRICITY BILLS**

In order to meet increasing requests from customers for soft copy of electricity bills, a process will be put in place for electronic dispatch of a copy of electricity bill by e-mail.

This project was launched on a pilot basis in 2015 with a database of around 50 customers, mostly CEB employees. Based on the feedback received, some fine-tuning needs to be done before extending the service to a larger number of customers in 2016.

# **REVENUE PROTECTION**

Electricity theft is a significant and growing drain on the revenue of the CEB. The Revenue Protection Unit deals with the investigation and recovery of the revenue losses due to illegal abstraction and consumption of electricity.

Over the past few years, there has been a significant increase in the amount of revenue collected from fraud cases. The CEB has reinforced its policy by resorting to the disconnection of electricity supply, civil law-suits, and police cases against the offenders.

In 2015, some 17,420 inspections were carried out island-wide and around 1,574 confirmed cases of illegal abstraction of electricity were detected, corresponding to the recovery of a total amount of Rs 32,442,804.

Revenue Collected from Fraud Cases							
Year	Domestic Tariff (Rs)	Commercial Tariff (Rs)	Industrial Tariff (Rs)	Total (Rs)			
2007	2,559,431	4,947,370	10,241,743	17,748,544			
2008	3,005,849	5,615,827	2,245,000	10,866,676			
2009	2,582,509	6,387,148	314,221	9,283,878			
2010	3,853,924	9,246,500	2,448,929	15,549,353			
2011	7,782,926	4,722,898	1,664,278	14,170,102			
2012	23,201,076	13,813,140	1,459,639	38,473,855			
2013	18,749,889	17,186,425	1,415,508	37,352,122			
2014	14,374,439	10,229,846	2,603,224	27,207,509			
2015	17,592,484	13,410,130	1,440,190	32,442,804			

The implementation of Automatic Meter Reading (AMR) has also enabled the faster detection of fraud and of tampering of meters.

# **CUSTOMERS PER TARIFF**

CATEGORY	CODE	2011	2012	2013	2014	2015
	110/111	125 101	125 432	125 683	126 437	151 261
	120/121	195 188	201 673	206 966	212 082	193 761
	140/141	40 942	42 602	44 589	45 762	47 218
Domestic	S/Total	361 231	369 707	377 238	384 281	392 240
	209/210/215	34 888	35 587	36 138	36 909	37 830
	211/212/213/217	1 472	1 560	1 632	1 705	1 773
	221/223/225/245/250	116	135	157	163	177
Commercial	S/Total	36 476	37 282	37 927	38 777	39 780
	309/310/315	5 193	5 080	4 958	4 796	4 573
	311/313/341	700	731	751	762	761
	312/317	139	127	123	111	104
	320	2	2	2	2	1
	321/323/351	19	22	26	30	35
	322/325	7	7	7	7	7
	330/340	8	8	8	11	10
	350	5	6	6	6	6
	411/421	9	9	9	8	5
	412/422	-		-	-	
Industrial	S/Total	6 082	5 992	5 890	5 733	5 502
Irrigation	511/515	504	525	553	579	598
	S/Total	504	525	553	579	598
Street Lighting	510	458	499	541	601	629
	S/Total	458	499	541	601	629
GRAND TOTAL		404 751	414 005	422 149	429 971	438 749

# SALES OF ENERGY (kWh) PER TARIFF

UNELO UN LI						
CATEGORY	CODE	2011	2012	2013	2014	2015
	110/111	196 295 708	200 947 620	204 983 319	207 597 376	210 264 469
	120/121	382 187 780	398 918 764	415 625 836	430 066 291	444 762 461
	140/141	131 512 846	137 130 583	143 404 712	151 179 149	157 636 141
Domestic	S/Total	709 996 334	736 996 967	764 013 867	788 842 816	812 663 071
	209/210/215	171 297 446	169 213 270	170 554 040	176 731 990	180 783 145
	211/212/213/217	354 106 814	358 574 622	361 379 586	367 081 363	378 627 048
	221/223/225	255 369 420	267 829 845	288 936 235	315 529 976	320 313 485
	245	485 351	436 123	389 678	474,080	789 630
	250	5 422 608	13,670,468	21,197,754	24,251,368	25 142 704
Commercial	S/Total	786 681 639	809 724 328	842 457 293	884 068 777	905 656 012
	309/310/315	28 934 729	28 659 044	28 332 994	27 980 372	28 031 859
	311/313/341	247 542 144	253 193 300	247 986 337	246 743 503	255 857 311
	312/317	82 134 103	75 821 359	76 857 704	73 827 980	70 514 124
	320	1 409 209	1 224 998	1 162 027	1 141 088	1 078 377
	321/323/351	92 233 327	97 311 917	110 658 494	123 218 372	121 099 444
	322/325	146 502 036	146 835 785	157 457 768	146 650 040	150 954 761
	330	13 605 445	13 880 448	14 024 715	13 893 692	14 225 370
	340	7 800 242	9 015 075	9 535 247	9 919 000	9 377 466
	350	31 383 875	31 295 847	37 341 829	39 609 085	40 584 393
	411/421	3 361 103	3 280 675	4 274 767	3 094 917	3 103 941
	412/422					
Industrial	S/Total	654 906 213	660 518 448	687 631 882	686 078 049	694 827 046
	511/515	22 490 994	24 931 090	25 354 250	26 616 657	21 801 234
Irrigation	S/Total	22 490 994	24 931 090	25 354 250	26 616 657	21 801 234
Street Lighting	510	24 359 470	24 760 136	25 648 872	27 588 395	28 290 481
Temporary	610/615	220 882	250 550	243 327	313 729	269 935
Miscellaneous		2 696 359	6 624 873	6 492 097	4 535 868	5 341 661
	S/Total	27 276 711	31 635 559	32 384 296	32 437 993	33 902 077
	CEB	2 952 524	2 964 119	3 089 463	3 545 536	3 885 386
GR	AND TOTAL	2 204 304 415	2 266 770 511	2 354 931 051	2 421 589 828	2 472 734 826

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# kWh PER CUSTOMER PER CATEGORY

CATEGORY	2009	2010	2011	2012	2013	2014	2015
Domestic	1 913	1 966	1 964	1 993	2 025	2 053	2 072
Commercial	19 847	20 651	21 497	21 719	22 213	22 799	22 767
Industrial	96 604	103 726	107 679	110 233	116 746	119 672	126 286
Irrigation	42 777	48 305	44 631	47 488	45 849	45 970	36 457
Street Lighting	84 099	73 227	53 187	49 620	47 410	45 904	44 977
Others	4 890 029	6 037 000	5 869 446	9 839 542	9 824 887	8 395 134	9 496 982
All categories mixed	5 237	5 413	5 439	5 475	5 578	5 632	5 636

# VARIATION OF SALES PER CATEGORY OF CUSTOMERS FOR 2013-2015

CATEGORY		kWh Sold		% Increase over previous year		
CATEGORY	2013	2014 2015		2013/2014	2014/2015	
Domestic	764 013 867	788 842 816	812 663 071	3	3	
Commercial	842 457 293	884 068 777	905 656 012	5	2	
Industrial	687 631 882	686 078 049	694 827 046	0	1	
Irrigation	25 354 250	26 616 657	21 801 234	5	-18	
Others	35 473 759	35 983 529	37 787 463	1	5	
TOTAL	2 354 931 051	2 421 589 828	2 472 734 826	3	2	

# PERCENTAGE SALES TO EACH CATEGORY

CATEGORY	2009	2010	2011	2012	2013	2014	2015
Domestic	32.56	32.38	32.21	32.51	32.44	32.58	32.86
Commercial	34.05	34.44	35.69	35.72	35.77	36.51	36.63
Industrial	30.52	30.35	29.71	29.14	29.20	28.33	28.10
Irrigation	1.00	1.11	1.02	1.10	1.08	1.10	0.88
Street Lighting	1.63	1.44	1.11	1.09	1.09	1.14	1.14
CEB + Others	0.27	0.27	0.27	0.27	0.27	0.27	0.27
GRAND TOTAL	100	100	100	100	100	100	100



# **HUMAN RESOURCES**

Reliable electricity supply is dependent on many factors, but primarily on people with the necessary expertise to provide leadership and to apply strategies, processes, systems and practices in the various functional areas of the business.

During the period under review, the Utility has lived up to its mission of providing an essential service to the nation, amidst growing adversity and economic turbulence. Our employees, operating at different levels, have, undoubtedly, been the architect of this performance through their initiative and dedication.

# MANPOWER

The total number of employees at the end of year 2015 in Mauritius stood at 1,784. Twenty-five employees left the CEB during the year primarily due to normal attrition, including retirements, deaths and resignations.

No. of Employees (Mauritius)							
	Staff	Manual	TOTAL				
Male	695	979	1 674				
Female	100	10	110				
Total	795	989	1 784				

Some key human resource indicators are shown hereunder:

# **RECRUITMENT AND SELECTION**

As part of its strategy for talent management, the CEB is committed to acquiring, retaining and developing the best talent and skills. After their appointment, new employees are required to undergo an induction programme with a view to equipping them with the skills and knowledge required for their new roles, as well as inculcating in them the organisational culture.

During the year 2015, some fifteen posts were filled at various levels of the organisation.

# **EMPLOYEE RELATIONS**

The Employee Relations Unit provides direction, advice, and support to the Organisation and employees at large on the interpretation and application of Collective Agreement, internal regulations, employment-related legislations and other employment issues.

# JNC MEETINGS/ CONSULTATIONS

Regional Committee and Joint Negotiation Committee meetings were held on a regular basis with the three recognised unions (CEB Workers Union, Union of Employees of CEB and Other Energy Sector, & CEB Staff Association) to address various employee relations issues. These meetings are considered as essential by Management as we firmly believe in building an effective and harmonious working relationship with the Unions and employees at large.

### COLLECTIVE AGREEMENT AND ERRORS AND OMISSIONS REPORT

In June 2013, Consultant B. C. Appanna was appointed by the Board to carry out the review of the Salary and Conditions of Service of CEB employees for the period July 2013 to June 2017. The Consultant submitted a preliminary report in December 2013. Negotiations with the three recognised Unions were initiated with a view to signing a Collective Agreement for the period July 2013 to June 2017.

The final report on the "Review of Pay Structures and Terms & Conditions of Service", effective as from 01 July 2013, was published in May 2014. It was agreed that the three Unions shall, within three months of the date of implementation of the Collective Agreement, make written submissions on any genuine errors and omissions, if warranted, for resolution by the CEB. Following the above exercise, the Consultant published an "Errors and Omissions Report" in January 2015.

### TRAINING AND DEVELOPMENT

The CEB encourages principles of human resource and organizational development that support the achievement of both individual and organisational goals and objectives by providing multiple training and development programmes. Our learning strategy is geared towards developing employees to perform optimally in their current positions, build an internal pipeline for future skills requirements, and create career opportunities.

### HUMAN CAPITAL DEVELOPMENT

In 2015, there was a substantial investment in training of our employees, both through overseas courses and locally organised training programmes.

The overseas training consisted of different courses, mainly in the technical field, which was attended by employees from different technical departments.

The local training was mainly made up of courses for employees in different managerial, accounting and technical fields. Some 5,504 man-hours of training were provided during the year in the form of seminars, conferences, workshops and in-house training. In addition, a total of 78 man-hours of Continuous Professional Development were sponsored by the CEB for its accounting professionals.

During the reporting period, GGB Training Services from South Africa delivered training courses on Low Voltage, Medium Voltage and High Voltage Power Cables for 80 employees of the Transmission and Distribution Department on topics focusing on procurement of power cables, and efficient laying and maintenance of power cables. In a similar vein, and in order to ensure good quality of cable laying and jointing, a workshop was designed to provide similar training to some 20 representatives of CEB cable-laying contractors so as to upgrade their competency and knowledge in power cables.

Induction training was also provided for all new recruits to familiarise them with the company's policies and procedures, prior to their placement in the work set-up.

As part of its social responsibility obligation, the CEB also provided short-term work placements and internships to some 265 students from institutions such as the University of Mauritius, University of Technology, Université des Mascareignes, Mauritius Institute of Training and Development, and Charles Telfair Institute with a view to offering them the opportunity to gain experience in relation to their respective courses of study. Some students from overseas educational institutions also benefitted from this facility.

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# **CEB TRAINING SCHOOL**

The "Centre de Formation et de Perfectionnement Professionnel (CFPP)" is the Training School of the CEB. It provides technical training to new recruits and refresher courses for existing employees. Training courses are also dispensed to other organisations such as Municipal / District Councils and other private companies. The various training programmes organised by the CFPP during 2015 included:

# TRAINING IN LINE WORKS FOR HANDYMEN AND DRIVERS

The training in line works for the handymen and drivers, which started in 2014, was maintained in 2015 and was provided to 30 employees coming from different units of the Transmission and Distribution Department.

The objectives of the training in line works were to give to the trainees the necessary knowledge and skills so that they can fully integrate the working teams of the Transmission and Distribution Department and assist in construction, maintenance, and fault repairs.

### TRAINING IN CYCLONE RE-INSTATEMENT WORKS

Some 20 technicians working in the Production Department received training in "Cyclone Re-instatement Works". These technicians will be deployed on site for reinstatement works in the event of cyclones causing damage to the electrical network.

In the same vein, several refresher training sessions in post-cyclone reinstatement works were organised for some 38 technicians of the Transmission and Distribution Department to review and update their competencies.

### OTHER TRAINING

During the year review period, the CFPP also hosted a number of training programmes on behalf of other departments and units of the CEB. These training courses were mainly delivered by external resource persons and firms. In-house facilities, including the assistance of CEB trainers, were solicited for carrying out these activities successfully.

### WELFARE AND BENEFITS

The CEB prides itself highly in looking after the welfare of its workforce. In this respect, a wide range of benefits are provided to all employees. The organisation of sports activities is also a regular feature.

Welfare and sports activities by and large lead to the following benefits:

- Promotion of better physical and mental health for employees;
- Promotion of a sense of belonging to the organisation and active interest in work activities;
- Promotion of healthy industrial relations; and
- Reduction of social evils prevalent among employees, such as substance abuse.

During the year under review, our employees participated in various sports and recreational activities organised at the level of our different sections islandwide. The CEB also took part in several inter- firm tournaments organised by the *Fédération Mauricienne des Sports Corporatifs (FMSC)*.

Moreover, a Pensioners' Day was organised in October 2015 to pay tribute to employees who retired in 2014 for their contribution and loyal service.

The long-standing tradition of celebrating the end-of-year festivities, along with the religious ceremonies, both at corporate and section levels, was maintained.

The above activities and events have greatly helped in enhancing the team spirit within the organisation.

### SAFETY AND HEALTH MANAGEMENT

Occupational Safety and Health Management is given high priority at the CEB, as the operational activities of the utility environment encompass multiple hazards and associated risks of varying degree of severity. The CEB is highly committed to providing a safe and healthy working environment to all its employees and contractors. The "zero-rate accident" remains a focal point of our safety improvement drive.

The year 2015 witnessed the organisation of a wide range of activities in view of promoting safety and health at the workplace. Recommendations made by the Main and Regional Safety and Health Committees were implemented and several measures were taken to raise the health and safety status at CEB sites.

### **PROMOTION OF SAFETY AND HEALTH**

During the period under review, the following activities were organised to promote safety and health at work.

### WORLD DAY FOR SAFETY AND HEALTH AT WORK

The World Day for Safety and Health at Work was celebrated on 28 April 2015. The theme was "Join in building a culture of prevention on OSH".

To mark this occasion, a half-day seminar was held at the CEB Training School to sensitise our employees on occupational accidents and their prevention. Employees from different departments attended the seminar.

The CEB Fire Safety Policy was launched on this occasion.

### SAFETY AWARENESS CAMPAIGN

Several talks and presentations on "Substance Abuse Prevention in the Workplace" were held to create awareness on this important issue among our employees. Our Meter readers, island-wide, benefited from training sessions on "Dog's Behaviour and Incident Prevention" with a view to raising their alertness on their site of work.

In line with the requirements of OSHA 2005, and with a view to creating awareness in, educating, informing, and training our employees in the field of safety and health, numerous talks and presentations were held in various sections island-wide. Emphasis was laid on fire safety and safe systems of work. Some 1,155 employees benefited from these sessions.

### SAFETY INSPECTION AND ENFORCEMENT

During the year, some 400 safety inspections were carried out in Mauritius. The importance and benefits of performing site risk assessments, the implementation of safe systems of work, and the use of personal protective equipment were stressed.

# SAFETY, HEALTH AND ENVIRONMENT (SHE) AUDIT

SHE Audits were carried out in CEB sections island-wide in order to identify all hazardous conditions and professionally monitor our systems of work. The findings of these audits will guide the definition of appropriate corrective actions in order to make the workplace safer and healthier.

### HEALTH SURVEILLANCE

Employees based at our power stations, and those working on electricity networks, were subjected to medical examinations by our Occupational Health Consultant. The objective was to ensure that they were medically fit to perform their assigned tasks.

# TRAINING ON SAFETY AND HEALTH

Regular training was provided to in-house employees and employees of CEB contractors at the Training School (CFPP) to further develop their safety awareness and competencies.

# TRAINING IN FIRST AID

Training in First Aid was provided to some 145 employees from different sections, as part of CEB's commitment to have a maximum number of first-aiders within its workforce.

### ACCIDENT STATISTICS

In 2015, 29 work-related accidents, requiring more than 3-days' absence from work, were recorded. No fatal accident was registered. The corporate goal of "zero accident" still remains our ultimate target.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Accidents	55	79	73	41	38	37	42	56	32	29
Man-Days Lost	1,103	1,380	1,462	633	922	925	956	982	687	575
Frequency Rate	15.8	25.05	17.03	13	10.14	9.9	9.54	13.16	7.76	7.29
Severity Rate	0.35	0.44	0.34	0.26	0.25	0.24	0.22	0.23	0.17	0.14
Fatal Accidents	Nil	Nil	Nil	Nil	Nil	Nil	Nil	1	Nil	Nil



# **INFORMATION TECHNOLOGY**

Information Technology (IT) is widely used in all departments of the CEB – from Generation to Transmission & Distribution, from meter reading, billing to revenue collection as well as in support functions such as Finance and Human Resources.

During the year 2015, the CEB pursued the development of its IT landscape to enable the Utility to make the best use of IT for its operations, control, and decision-making and to achieve its vision and business objectives in the following strategic directions:

### **Programme 1 - Streamline and Automate Business Processes**

Streamline and automate business processes for more efficiency, effectiveness, better control, and improved decision-making.

### Programme 2 - Build a Reliable Technical Infrastructure

Implement, operate, and maintain the necessary technical infrastructure to support the business applications and network services/applications.

# Programme 3 - Ensure Security, Scalability and Availability IT Infrastructure and Applications

Ensure security, availability and continuity of IT Infrastructure and Applications.

### Programme 4 - Attract, Develop and Retain IT Staff

Attract, train, develop, and retain qualified, experienced and competent IT professionals to properly operate and support the increasingly complex and critical IT Infrastructure and Applications deployed at the CEB.

### **Programme 5 - Promote Acceptance and Usage of IT Applications**

Develop and implement training programmes for CEB end-users to promote acceptability and usage of IT applications.

The projects that were initiated or implemented in 2015 along the above-mentioned strategic directions are outlined hereunder:

### **1. STREAMLINING AND AUTOMATING BUSINESS PROCESSES**

#### (a) Implementation of SAP HCM

The CEB awarded a contract to SIL/Altimetrik for the implementation of SAP Human Capital Management (HCM) in late 2015.

The implementation of SAP HCM will replace the current technologically and functionally obsolete custommade Human Resource Management System (HRMS), and will provide the functionalities and features required for a modern HRMS, while taking advantage of the existing SAP landscape and licenses.

#### (b) Implementation of SAP EAM

The CEB carried out a tendering exercise for the implementation of SAP Enterprise Asset Management (EAM). The use of SAP EAM will enable the CEB to embrace whole life-cycle planning, life-cycle costing, planned and proactive maintenance, and other industry best practices for its assets.

The scope of the project was reviewed following the non-receipt of responsive bids, and the CEB is now embarking on a broader and far-reaching three-pronged exercise involving:

- Part 1: The conduct of a survey of all CEB's physical assets with additional GPS coordinates for selective classes of assets that would be used to populate the ArcGIS;
- Part 2: The implementation of SAP Enterprise Asset Management (EAM) system, populated with asset data surveyed from Part 1;
- Part 3: Carrying out the Asset Revaluation exercise and doing the necessary configuration in the SAP EAM to ensure that subsequent revaluation of assets are carried out in an automated manner within the SAP EAM.

The successful completion of the project will provide the CEB with an up-to-date and complete record of all its assets with availability of:

- Technical/operational data within the SAP Enterprise Asset Management (EAM) System;
- Geographical-related data within the ArcGIS application (Geographical Information System); and
- Financial-related data within SAP Finance.

# 2. SETTING UP A RELIABLE TECHNICAL INFRASTRUCTURE

The upgrading of the IT infrastructure at the CEB is an ongoing exercise.

The upgrading and renewal of the desktop equipment were pursued to ensure the provision of reliable equipment to end-users so as to enable them to perform their job effectively.

Additional IBM Blade servers, memory and Zen Load balancing appliances were purchased and implemented to enhance the processing capabilities and availability of applications deployed.

The CEB awarded a contract to SIL for the supply and implementation of new EMC Storage Area Network (SAN) to consolidate and replace the two ageing IBM and Oracle/SUN SANs.

The CEB also extended its own fiber optic network to allow the Vacoas and Pamplemousses sub offices to be connected to the CEB-owned fiber optic network, thereby reducing telecommunication costs while improving bandwidth and connectivity to those offices.

Finally, the CEB awarded a contract to Price Waterhouse Coopers Ltd. In respect of consultancy services for the design and implementation of a new Tier-III Data Centre at Curepipe.

# 3. ENSURING SECURITY, SCALABILITY AND AVAILABILITY OF IT INFRASTRUCTURE AND APPLICATIONS

### (a) IMPLEMENTATION OF DOUBLE-LAYER FIREWALL

The CEB implemented a double-layer firewalling infrastructure made up of Palo Alto and Checkpoint firewalls.

The implementation of this project was also an opportunity to provide IT/MIS Department staff with certified training courses to enhance their knowledge and skills in order to better manage the implemented infrastructure.

### (b) IMPLEMENTATION OF DISASTER RECOVERY SITE

The setting up of a disaster recovery site, to ensure business continuity and mitigate business risks in case of failure and downtime at the main site at Curepipe, is of primary importance to the CEB.

In this respect, the CEB has awarded a contract to Price Waterhouse Coopers Ltd. for consultancy services for the design and implementation of a Disaster Recovery / Secondary Data Centre at Vacoas.

### 4. ATTRACTING, DEVELOPING AND RETAINING IT STAFF

The CEB recruited a number of Trainee IT Technicians to ensure that the expanding park of desktop equipment is kept in optimal running condition, as well as to improve the level of support and services provided to end-users.

### 5. PROMOTING ACCEPTANCE AND USAGE OF IT APPLICATIONS

The CEB organised a number of training sessions on Microsoft Office tools for its staff to enable them to make optimal use of the said tools.

The above-mentioned initiatives have enabled the CEB to operate in a more efficient and effective manner, while providing improved quality services to its customers. These strategic directions will be pursued during the forthcoming years.

# **SUPPLY CHAIN**

The Supply Chain division is responsible for the procurement of all goods and services required by the different units and end-users of the CEB. These goods and services have to be sourced from external suppliers, both local and overseas. While ensuring their supply, the focus is always on the following parameters:

- Satisfaction of user department's needs;
- Best value for money;
- Building relationships with suppliers;
- Continuous sourcing; and
- Contribution to the attainment of the strategic objectives of the CEB.

### **MAJOR ACTIVITIES**

The CEB registered a record number of offers for a single bidding exercise in 2015, with some 297 interests received in respect of the "Expression of Interest for the Installation of Renewable Energy Technologies for Power Generation". This is a clear demonstration of the keen interest in the renewable sector but, at the same time, shows the trust that bidders have in the bidding process of the CEB.

In 2015, there was an important development in the procurement landscape in Mauritius. The Procurement Act 2006 was revisited and e-procurement finally became a reality. A few public bodies have already migrated to the e-procurement platform, and the CEB is getting itself prepared for this major change. In this respect, our officers have had the opportunity to benefit from capacity building through various training programmes delivered by the Policy Procurement Office.

In line with the amendments made in the accompanying regulations of the Procurement Act 2006, the CEB has revised its internal Procurement Manual and has, in the same wake, aligned the threshold for local and overseas requests for quotations with a view to rendering the business processes more fluid. At the same time, new safeguards and internal controls have been implemented for approval of quotations.



# **CORPORATE PLANNING**

Worldwide, growing challenges such as distributed generation, grid integration of intermittent renewable energies, regulatory policies, changing climatic conditions, public pressures, among others, are compelling electric utilities to revamp the set-up of traditional power systems. This is equally true for Mauritius.

To cope with these challenges and support the country's long-term developmental goals, the CEB has already engaged in a number of strategic actions with a view to sustaining its long-term competitive position. The strategic orientation will, however, be intrinsically and heavily dependent on a sustained modernisation of the local power system.

The Government intends to invest massively into infrastructure ventures, notably the port and the utilities, and consolidate the economic pillars as well as diversify the sectorial base, backed by the accelerated development of SMEs. Within this confluence, it is expected that the country's real GDP growth would leapfrog from 3.5% in 2014 to around 4% in FY 2015/16. *A sine qua non* condition to support the targeted developments is a strong dynamic power system. In this respect, the CEB, as a key player in the local power sector, will be required to mobilise significant critical resources, which include human capital, knowledge and knowhow enhancement, attractive financial capital, and well-tuned business strategies.

Within this endeavour, the CEB is laying emphasis on the further diversification of the national energy mix. This will be achieved through an accelerated penetration of local renewable energy sources, whose expansion will require the strengthening of the power grid.

# **MAJOR ACTIVITIES IN 2015**

### **ELECTRICITY DEMAND-ASSESSMENT**

Pending the implementation of energy-intensive projects which are in the pipeline, as per Government's plan, the examination of the latest trend for electricity demand shows that demand for electricity will, most likely, continue to grow at a decreasing rate. As shown in the table below, our mid-year reviewed expected growth in energy sales, sales revenue, and peak power demand for the year 2015 were as estimated.

	Market	Energy (kWh)	Revenue (Rs)	Peak Demand (MW)
Forecast	Mauritius	2,461,061,742	14,126,494,329	463
	Rodrigues	32,295,703	207,153,844	7.38
Actual –	Mauritius	2,472,734,826	14,239,674,309	460
	Rodrigues	32,697,663	209,361,247	7.24
Deviation (%) (Forecast w.r.t. Actual)	Mauritius	-0.47%	-0.79%	0.65%
	Rodrigues	-1.23%	-1.05%	1.93%

### **DEMAND FORECAST 2015 - ACCURACY**

The CEB, through its Corporate Planning & Research Division, continuously monitors the evolution of the domestic electricity market and concurrently explores alternatives so as to provide reliable and affordable electricity supply to the nation at large.

### EOI FOR RENEWABLE ENERGY INSTALLATIONS

With a view to reducing the country's dependence on fossil fuels, while ensuring energy security and access to electricity at affordable prices, in June 2015, the CEB invited, through an Expression of Interest (EOI), potential project developers to express their interest in the installation of grid-connected renewable energy generation systems comprising wind, solar photovoltaic, sustainable biomass, hydro, ocean, and waste.

The call for renewable energy projects, through the EOI confirmed the utility's commitment to diversifying its generation mix with a higher contribution of Renewable Energy Technologies (RET). Presently, RET comprising hydro, biomass (bagasse), solar photovoltaic and landfill gas, account for about 18% of total electricity generation. The expected outcomes of the EOI will promote Government's long term energy strategy to increase electricity generation from RET to 35% by 2025.

Promoters of the renewable energy projects were allowed the flexibility to propose projects under the following two different options:

- i) Generate and export all the energy to the grid; or
- ii) Generate, consume and export the surplus energy to the grid.

The proposed renewable energy installations, ranging from a minimum capacity of 50 kW to a maximum capacity of 15 MW for intermittent sources, would be interconnected to the medium or high voltage networks, as appropriate.

At the closing date of the EOI on 3 August 2015, 297 proposals had been received.

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### **PROSUMERS' MSDG SCHEME**

Further to the above EOI, properly formulated Requests for Proposals would be issued. With regard to projects having the option to generate, consume and export surplus energy to the grid, preparations are underway to design and formalise a Prosumers' MSDG Scheme. The Scheme would be launched in early 2016.

# TRAINING ON FINANCIAL AND ECONOMIC EVALUATION OF SOLAR PV POWER GENERATION PROJECTS

In September 2015, the CEB, under the UNDP-GEF project "Removal of Barriers to Solar PV Power Generation in Mauritius, Rodrigues and Outer Islands", organised and hosted a five-day training course on Financial and Economic Evaluation of Solar PV Power Generation Projects. Following a selected bidding exercise, the consultancy firm Af-Mercados EMI was awarded the contract to conduct the training course.

The objective of the training course was to build capacity at national level in financial and economic evaluation of solar PV power projects, a weakness identified earlier in the development of the solar PV in the Republic of Mauritius.

The training course covered all phases of a project life cycle namely planning and development, finance, and monitoring of construction and operation. The training sessions were attended by around 40 people from different financial and governmental institutions and PV project developers, as well as university students and academics.

# WORKSHOP ON SOLAR PV DEVELOPMENT AND INSTALLATION OF SOLAR PV SYSTEMS IN RODRIGUES

Under the CEB-UNDP-GEF project "Removal of Barriers to Solar PV Power Generation in Mauritius, Rodrigues and Outer Islands", 20 kWp solar PV power generation projects were commissioned in Rodrigues in 2015. Three projects comprising 10 kWp at RRA Central Administration Building, 5 kWp at Maison des Pêcheurs, and 5 kWp at MITD Le Chou for a total amount of Rs 1.7 million were co-financed by GEF and the Rodrigues Regional Assembly (RRA).

To heighten awareness on Solar PV Distributed Generation, a half-day workshop on Solar PV development in Rodrigues was organised in collaboration with the RRA on 10 December 2015. The purpose of the workshop was to share information with different stakeholders in Rodrigues on the RRA's Renewable Energy Programme, available financing options for Solar PV, real life experience of Small-Scale Independent Power Producers in Rodrigues, and future development of Solar PV in Rodrigues, among others.

The 10 kWp solar PV system at the RRA Central Administration Building in Port Mathurin was inaugurated on the same day.

# **ELECTRICITY GENERATION PROJECTS – POWER GENERATION EXPANSION PLAN**

During the year 2015, the CEB, within its integrated planning framework, implemented or initiated the following projects with a view to sustaining power generation expansion and balancing demand with sufficient supply capacity:

### CONSULTANCY SERVICES FOR REDEVELOPMENT OF SAINT LOUIS POWER STATION

With the expected retirement of the old Pielstick engines, the Saint Louis Power Station has all the required amenities to augment its generation capacity. The redevelopment of the Saint Louis Power Station was thus initiated in 2013, following the preparation of a redevelopment plan report. The proposed redevelopment plan consists of retiring the low-efficiency Pielstick engines and the commissioning of a power plant with an output capacity 60 MW ± 10%.

Further to a first bidding exercise in 2014, whereby only one responsive offer was received, a rebid exercise was called in 2015. The tender documents were launched on 03 July 2015 and the closing date was set for 01 October 2015. At the bid due date, four bidders submitted their proposals.

Following the evaluation of the bids at the Central Procurement Board (CPB), Burmeister & Wain Scandinavian Company (BWSC) was identified as the successful bidder. By the end of 2015, the CEB was still awaiting the clearance of the African Development Bank, which is the funding agency of this project, for the signature of the funding agreement.

As per the redevelopment plan, the new engines would be operational in the third quarter of 2017, with a total output capacity of 66 MW.

### CONSULTANCY SERVICES FOR THE SETTING UP OF A CCGT PLANT AT LES GRANDES SALINES

Following Government's decision in March 2015 not to go ahead with the CT Power coal power plant project, the CEB had to switch to an alternative power expansion plan with a view to ensuring the security of electricity supply.

In this respect, the Utility came forward with a proposal to install a 135-150 MW Combined Cycle Gas Turbine (CCGT) power plant on an acquired plot of land at Les Grandes Salines. The CCGT plant would operate in its initial phase on light fuel oil (diesel) and would thereafter switch over to natural gas, once the latter fuel becomes available in Mauritius.

The first step towards the conception of this project was to appoint a suitable consultancy firm to assist the CEB throughout the project development phase, including feasibility study, tender preparation, evaluation of bids, and site supervisory services. In this regard, an Expression of Interest (EOI) for consultancy services was launched in August 2015. Further to this EOI, qualified consultants were invited to bid in a Request for Proposal exercise in November 2015.

In order to expedite matters, the CEB, in parallel, started to work on the preparation of a prequalification document, which is an imperative process for large and complex projects. The launching of this prequalification document is expected to be undertaken in early 2016.

#### **IDENTIFICATION OF POTENTIAL SITES FOR MINI/MICRO HYDRO POWER PLANTS**

This project concerns the conduct of a study to identify potential sites for the construction of new Mini/Micro Hydro Power Plants, which is in line with Government's policy to optimise and increase the share of renewable energy. The ultimate aim is to mitigate the risks of energy supply and fluctuating fuel costs, while improving the country's carbon footprint.

The CEB proceeded with a competitive bidding exercise for this project in February 2015 and the closing date for this RFP was set to 29 April 2015. Four consultancy firms submitted an offer at the closing date. Further to technical and financial evaluation, ISL Ingénierie de France was found to be the successful consultant. The Consultant had a first kick-off meeting in September 2015 and a workshop was organised to discuss on the findings of the study. The final report is expected to be issued by February 2016.

### CONSULTANCY SERVICES FOR INCREASING DAM CAPACITY AT SANS SOUCI

Due to frequent spillway discharges from the Sans Souci Dam, the CEB considered the option of increasing its dam capacity with a view to raising the hydro power generation from the Champagne Power Station.

A study conducted by the consultancy firm Snowy Mountain Engineering Corporation (SMEC) concluded that it was feasible to raise the Dam spillway by 3 meters, using fused-gate technology. However, the Consultant also

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recommended that a dam stability study be carried out after the refurbishment of the dam safety monitoring instrumentation systems, prior to implementing the project. The increase in the dam capacity will, in effect, allow a rise in energy generation from the Champagne Power Station by approximately 3 GWh.

In order to proceed ahead with the implementation of this project, the CEB, as an initial step, floated a Request for Proposal (RFP) in December 2015 for the conduct of a consultancy study. The deliverables of the selected consultancy firm will include the preparation of tender documents, evaluation of bids and site supervision works.

#### **REQUEST FOR PROPOSAL FOR SOLAR PV FARM BETWEEN 10 TO 15 MWac**

Subsequent to the EOI for renewable energy projects in June 2015, the CEB launched a Request for Proposals (RFP) in October 2015 for the setting up of solar PV farm projects of capacity ranging between 10 to 15 MWac for a total aggregated capacity of 40 to 45 MWac. Some 13 bidders submitted their offers. Following the evaluation of the offers received, the successful bidder(s) would be required to execute an Energy Supply Purchase Agreement (ESPA) with the CEB, upon successful negotiation.

The successful bidder(s) will be allowed a time-frame of 15 months to commission the PV farm(s). It is anticipated that by 2017/2018, an additional 66 GWh of renewable energy will be generated from the solar farm(s).

### **REQUEST FOR PROPOSAL FOR SOLAR PV FARM BETWEEN 1 TO 9 MWac**

After the launch of the above RFP meant for larger capacities, the CEB came forward with another RFP for lower capacity solar PV projects, which would be interconnected to the medium-voltage network. Under this initiative, the CEB aims at integrating a total aggregated 20 MWac of solar PV power generation. The launching of the tender is planned for 2016. These projects are expected to be operational by mid-2018 and will generate some 30 GWh of renewable energy.

### **REQUEST FOR PROPOSAL FOR WASTE-TO-ENERGY (WTE) PROJECTS**

In consideration of the acute problem faced by Government to manage the increasing quantity of wastes which are being dumped at the Mare Chicose Landfill, and in line with the national objective to have an alternative sustainable solution for waste management, the CEB, after the EOI of June 2015, initiated the preparation of a RFP for the setting up of Waste-to-Energy (WTE) power plant(s).

The operation of WTE power-generating facilities will alleviate the problems associated with the disposal of wastes in the country and, at the same time, produce renewable energy for the grid.

The WTE plant(s) will comprise units not exceeding 50 MW, and will be connected either to the 22kV or to the 66 kV substation, depending on the capacity of the installation. Since this project is closely related to the mandate of the Ministry of Environment, several issues have to be addressed regarding the whole issue of waste management prior to finalising the RFP document.

The CEB plans to launch this RFP by February 2016 to restricted bidders who expressed their interest in WTE projects in the EOI of June 2015 exercise. Successful bidder(s) would have a period of 24 months to commission the WTE plant(s). A Power Purchase Agreement (PPA) would be signed with successful bidder(s) for a contract term of 20 years. In total, depending on waste availability and quality, by 2019, some 225 GWh of electricity is expected to be generated from WTE technology.

### **NETWORK PLANNING – ELECTRIC POWER TRANSPORTATION PLAN**

Efficient and effective delivery of quality electricity, to both the social and the economic sectors, is a key indicator of a country's standard of living and ease of doing business.

The quality and reliability of electricity supply are dependent on the capability and sophistication of an electric grid power transportation infrastructure. The CEB is fully conscious of the fact that the expansion of the Transmission and Distribution network should be perfectly aligned with future load demand and power generation projects. The following in-house key system planning activities and research studies were carried out in 2015:

- An interconnection study to determine the optimal transmission network configuration for power evacuation from the Saint Louis Power Station Redevelopment Project, taking into consideration the short, medium and long-term requirements;
- Drafting of the specifications for the Saint Louis Power Station Redevelopment Project, in conjunction with Consultant Mott Mac Donald;
- Network expansion plan to determine the outgoing 22 kV feeders for the La Tour Koenig Substation;
- Conduct of several system impact studies to define the interconnection of load exceeding 1 MVA, with focus on security and reliability of supply;
- Reliability study for the Rodrigues' medium-voltage distribution network, including an analysis of the present situation and the formulation of recommendations to improve system reliability;
- Setting up of a Geographical Information System (GIS) for the 22 kV distribution network, in collaboration with the IT department. Three 22 kV feeder main-lines were completely geo-referenced using GPS receivers;
- Technical support for the implementation of the 5x2 MW Photovoltaic Farm projects, to be connected to the medium-voltage network; and
- Fault level studies for Le Val Hydro Power Plant for the setting up of the protection setting.

### CONSULTANCY SERVICES FOR THE DEVELOPMENT OF A STRATEGIC SMART GRID ROADMAP

Consultant ESTA International LLC from the US was recruited by the CEB following a competitive bidding process to develop a Strategic Smart Grid Roadmap for Mauritius. This consultancy service is being financed by the UNDP-GEF funded project *"Removal of Barriers to Solar PV Power Generation in Mauritius, Rodrigues and Outer-Islands"*. The project started in November 2015 and the final reports are expected in June 2016.

### ENVIRONMENTAL MANAGEMENT

### **ENVIRONMENTAL MONITORING OF CEB POWER PLANTS**

#### MAURITIUS

Environmental Monitoring was conducted at all thermal power plants namely, Fort George, Fort Victoria, Saint Louis, and Nicolay. The monitoring included both stack emission and ambient air quality monitoring. The exercise indicated that the operation of the power plants was in accordance with the existing regulations. Noise measurements were also carried out for some important receptors around the power plants.

#### RODRIGUES

Environmental Monitoring was conducted in Rodrigues in respect of all thermal power plants and wind turbines. The environmental performance of the Pointe Monnier Power Station was found to be in accordance with environmental standards. The performance of Port Mathurin Power Station was also found to be satisfactory with regard to air emissions. The noise level at some receptors just outside the boundary were slightly above the required standard. However, it is to be noted that there are no inhabitants in these locations.

A workshop was held with the CEB staff in Rodrigues regarding the relevant provisions of the Environment Protection Act. It was followed by a training session on noise regulations, which included both environmental noise and occupational noise assessment.

# EIA STUDIES AND PROJECT IMPLEMENTATION

In line with requirements of the Environment Protection Act, EIA studies were carried out for the following projects in the year 2015:

# RELOCATION OF TRANSPORT AND TRANSFORMER WORKSHOPS

The CEB initiated a project to relocate the Transport and Transformer workshops to a new site at L'Avenir to make way for the Redevelopment of St Louis Power Station Project. In this respect, an EIA study was carried out at the new site in accordance with the Environment Protection Act.

# TANK FARM AT LES GRANDES SALINES

Following the issuing of EIA license, the construction of a Tank Farm at Les Grandes Salines was scheduled to start in 2015. However, the presence of a wetland was noted on the site. In order to meet the requirements of the Ramsar Committee, the CEB commissioned a consultancy exercise to investigate the ecological and hydrogeological characteristics of the site. This study was conducted by Mott MacDonald in December 2015.

# PARTICIPATION IN NATIONAL PROJECTS

# PREPARATION OF CARBON CALCULATOR 2050

The CEB participated in the preparation of the 2050 Pathways Calculator, under the aegis of the Ministry of Environment, Sustainable Development, Disaster and Beach Management. Funding for this project was provided by the British High Commission in Mauritius. The Calculator can be used to analyse how emissions of Green House Gases (GHGs) can be reduced by adopting low carbon emission technologies and behavioural changes. According to the Calculator scenario, electricity generation is one of the sectors where Mauritius can achieve substantial reduction in the amount of emissions.

The 2050 Pathways Calculator can also be used to devise feasible strategies to explore environmentally sound technologies that can help the island economy to mitigate climate change as well as determine how far renewable sources can meet energy demand in future.

# PREPARATION OF INDC REPORT

During the Conference of Parties (COP21) meeting held in 2015 and organised by the UNFCC Secretariat, all countries who signed the United Nations Framework Convention on Climate Change (UNFCCC) were required to prepare and submit their GHG emission forecast through the formulation of the Intended Nationally Determined Contributions (INDCs). The INDC is a policy document that will provide guidelines on how the Mauritian Government will reduce its national GHG emissions. It also defines the amount of international support (financial and technical) that will be required to achieve the emission reduction targets that have been proposed.

# THIRD NATIONAL COMMUNICATION

National Communication is a submission that Mauritius has to make to the UNFCCC on a regular basis indicating the activities and challenges that the country faces towards reducing its national Green House Gas (GHG) Emissions. In this respect, the Government of Mauritius started the preparation of the Third National Communication (TNC) in 2015 and the latter is scheduled for completion in 2017. The TNC will cover the period 2007 to 2014. As a key stakeholder in this project, the CEB is actively participating in the preparation of the TNC and the National Inventory Report (NIR).

# **DEMAND SIDE MANAGEMENT**

As a forward-looking utility, the CEB attaches great importance to Demand Side Management (DSM). Various policies and measures are being implemented to control, influence and generally reduce electricity demand at peak hours. These initiatives can, to a certain extent, help the CEB to defer investment in additional generating capacities, while also supporting the fight against climate change and GHG emissions.

The main DSM initiatives for the year 2015 were as follows:

# SENSITISATION CAMPAIGNS IN SCHOOLS

With a view to raising awareness of Energy Saving and Energy Efficiency, several talks were delivered in educational institutions.

Students were apprised of the various technologies currently adopted in Mauritius for the production of electricity and the steps involved in bringing electricity to their premises. Emphasis was also laid on practical solutions for the judicious use of electricity at home, and how simple no-cost actions could make a big difference in electricity bills and contribute to the mitigation of GHG emissions.

# **ENERGY EFFICIENCY IN CEB BUILDINGS**

Lighting accounts for a significant share of the energy consumption of CEB buildings, especially in power stations where they are operational almost round the clock. To improve the efficiency of the lighting system of CEB buildings, the conventional fluorescent tubes (T8) are being gradually replaced by T8 Led Tubes, which are 60% more efficient and have a much longer lifetime. As at December 2015, a total of 1,550 T8 Led Tubes were installed at Fort George Power Station. Another 1,270 T8 Led Tubes were installed at St Louis Power Station and CMG building. The programme will be extended to other power stations and CEB buildings in future.

In a similar vein, air conditioners, which are extensively used at the CEB, are big consumers of energy. In this respect, appropriate actions were initiated to gradually replace old air conditioners by new inverter-type ones. The latter are around 30% more energy efficient, less noisy, and have a longer lifespan. Some 40 inverter-type air conditioners were installed by the close of year 2015.

# **INSTALLATION OF SOLAR WATER HEATERS**

As part of its energy conservation strategy, the CEB has embarked on the replacement of electric water heaters by solar water heaters in its power stations and non-operational buildings. Accordingly, a tender was launched in October 2015 and the contract was awarded to the successful bidder in January 2016. The installation of the solar water heaters is in progress and is expected to be completed by end of March 2016.

# **INSTALLATION OF PHOTOVOLTAIC (PV) PANELS**

A project for the installation PV panels on CEB buildings for the production of onsite electricity was launched in 2015. Initially, five buildings were earmarked for the installation of a PV system of capacity 5kW. At the close of the year, the installation phase had almost been completed, and the testing and commissioning of the PV systems were in progress.

The project will be extended to other buildings in 2016.

# **ENERGY SAVING GUIDEBOOK**

The first Energy Saving Guidebook was produced in collaboration with the Ministry of Energy and Public Utilities in 2005, and a copy was distributed to all households. Over the years, there has been a marked evolution in technology and, nowadays, new equipment and appliances that are much more energy-efficient are available on the market. However, an energy-efficient appliance, if not used in the proper manner, may still lead to high energy consumption.

With a view to raising awareness on the judicious use of appliances and electricity at large, the existing Energy Saving Guidebook was revised and updated. The distribution of the Guidebook to schooling institutions is planned for 2016.



# RODRIGUES

PRODUCTION

# **DEMAND PATTERN (ENERGY AND POWER)**

The total energy generated for 2015 was 39.46 GWh, representing a rise of 5.9 % over year 2014 (37.26 GWh). The bulk of energy (93.2 %) was produced from fuel oil based power stations, and the wind turbines (both Grenade and Trèfles Wind Parks) contributed to the remaining 6.8%.

The total energy generated for the year is given below.

6, 6	, 0		
POWER STATION	ENERGY SOURCE	OUTPUT (kWh)	(%)
Port Mathurin	Fuel Oil and Diesel Oil	11,238,510	28.5
Pointe Monnier	Fuel Oil and Diesel Oil	25,534,956	64.7
Trèfles	Wind	205,950	0.5
Grenade	Wind	2,480,200	6.3
TOTAL		39,459,616	100

The maximum power demand was 7.24 MW and was recorded on 31 December 2015 at 19.00 hours. This represents an increase of 0.5 % over the year 2014 (7.20 MW).

# **OPERATION AND MAINTENANCE**

# POINTE MONNIER

Engines MAN G 1 and MAN G 2 clocked 68,805 and 73,239 running hours respectively, whereas WARTSILA G4 clocked 25,143 hours.

The alternator of MAN Engine G1 was dismantled for inspection and cleaning in July 2015, and damages to stator winding slot wedges were observed. MAN Engine G1 alternator will be repaired in early 2016.

Wartsila Unit G4, which was commissioned in November 2012 (Phase 2), performed satisfactorily. Recurrent high exhaust gas temperature problems were encountered on the engine amid several turbocharger cleaning and replacement. BWSC, the main Contractor for the Phase 2 Project, was called upon to remedy the situation. New different types of nozzle rings will be supplied and fitted on the engine at their own costs during the year 2016.

The three engines generated a total energy of 25.52 GWh, representing 64.71 % of the total energy generated.

# PORT MATHURIN

The MAN Engines (G7, G8, & G9) cumulated 111,444; 106,861; and 97,532 running hours respectively. The total energy generated was 10.94 GWh, representing 27.73 % of the overall production.

The MWM engines were utilised as back-up in case of emergencies, and they clocked combined running hours of only 992 for the whole year 2015. The total units generated by the six MWM engines was 0.30 GWh, representing 0.75 % of the total production.

# GRENADE

The four units installed at Grenade generated a cumulative energy of 2.48 GWh in 2015 representing 6.29% of the overall production for the year. Since commissioning, Units 1, 2, 3 and 4 have cumulated total running hours of 46,307; 44,429; 33,319 and 32,805 respectively.

Unit No 4 sustained gearbox failure and a new gearbox was installed and commissioned in December 2015. As a precautionary measure, the gearbox on Wind Turbine No. 1 has also been replaced.

**ELECTRICITY BOARD ANNUAL REPORT 2015** 

CENTRAL

# TRÈFLES

All three units at Trèfles have clocked an average of 68,709 running hours since commissioning. The total energy produced was 0.21 GWh, representing 0.52 % of the total energy generated.

Scheduled maintenance was carried out on all three wind turbines in March and November 2015.

# **CAPITAL PROJECTS**

The main capital projects implemented in 2015 included:

- Procurement and replacement of complete gearboxes with cooling system for GEV MP Wind turbines installed at Grenade Wind Farm; and
- Upgrading of boundary wall and tarring of yard at Pointe Monnier Power Station (Ongoing).

PLANT (	CAPACITIES, UNI	TS GENERATED A	AND EXPORTED	YEAR 2015		
	Plant Capacity (MW)	Effective Capacity (MW)	Units Generated (kWh)	% Units Generated	Units Exported (kWh)	
THERMAL						
Pointe Monnier	6.40	6.40	25,534,956	64.71%	23,753,836	
Port Mathurin MAN	3.00	2.80	10,940,600	27.73%	9,437,212	
Port Mathurin MWM	3.00	2.40	297,910	0.75%	275,552	
TOTAL THERMAL (A)	12.40	11.60	36,773,466	93.19%	33,466,600	
WIND FARM						
Grenade	1.10	1.10	2,480,200	6.29%	2,473,751	
Trèfles	0.18	0.18	205,950	0.52%	204,112	
TOTAL WIND FARM (B)	1.28	1.28	2,686,150	6.81%	2,677,863	
TOTAL CEB RODRIGUES (A) + (B)	13.68	12.88	39,459,616	100%	36,144,463	

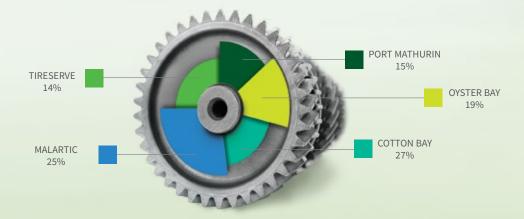
# DISTRIBUTION

# SYSTEM DEMAND

The maximum power demand was 7.24 MW and was recorded on 31 December 2015 at 19.00 hours.

The load distribution, on a regional basis, at the time of the highest demand on 31 December 2015 is shown hereunder:

# LOAD DISTRIBUTION FEEDERWISE AT TIME OF PEAK DEMAND



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# SYSTEM PERFORMANCE

The overall performance of the distribution network was satisfactory in 2015. A total of 2,019 faults were registered during the year.

Rodrigues suffered from Cyclone BANSI from 14 to 16 January 2015. Electricity supply was maintained on the network, though there was intermittent tripping of feeders. The regions which were particularly affected by the cyclone were located in the North Eastern part of the island.

The line losses for year 2015 were contained to 9.2 %, as compared to 10.45% for year 2014.

# **HV NETWORK**

The 22 kV overhead distribution network was extended by 2.87 km to reach a total length of 154.98 km.

# LV NETWORK

The low voltage distribution network was extended by 2.25 km to reach a total length of 352.03 km.

# INSTALLED TRANSFORMER CAPACITY

The total number of distribution transformers at the end of 2015 totalled 157, with an installed capacity of 15,025 KVA.

FEEDER		Installe	d Transfor	mer Cap	acity/ kV/	٩	
	25	50	100	150	250	500	Total
Port Mathurin	0	2	8	3	4	1	18
Oyster Bay	13	11	6	3	4	1	36
Cotton Bay	5	22	9	4	2	1	43
Malartic	9	17	9	7	2	0	44
Ti Reserve	2	2	3	7	0	0	14
TOTAL (NO.)	29	54	35	24	12	3	157
TOTAL (KVA)	725	2,700	3,500	3,600	3,000	1,500	15,025

# **CAPITAL PROJECTS**

The capital projects implemented in the year 2015 were as follows:

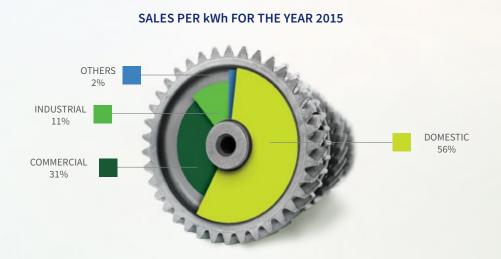
- Erection of a new 22 kV substation at Port Mathurin Power Station;
- Undergrounding of network at Port Mathurin;
- Refurbishment of Malartic Feeder (ongoing);
- Re-conductoring of Oyster Bay Feeder (ongoing);
- Ring Port Mathurin Feeder with Cotton Bay Feeder at Grenade Wind Farm (ongoing);
- Ring Cotton Bay Feeder with Malartic at Mourouk ( ongoing); and
- Insulation of Port Mathurin Feeder (ongoing).

# **CUSTOMER SERVICES**

# **CUSTOMERS AND SALES**

The number of customers, as at 31 December 2015, amounted to 13,856 as compared to 13,673 in 2014, representing an increase of approximately 1.3%.

The sales of electricity totalled 32,697,664 kWh for the same period, equivalent to an increase of 6.8%, as compared to the year 2014.



# FINANCIAL PERFORMANCE

At the end of Financial Year 2015, the Rodrigues Branch made a deficit of Rs 119 million, compared to a deficit of Rs 154 million for 2014.

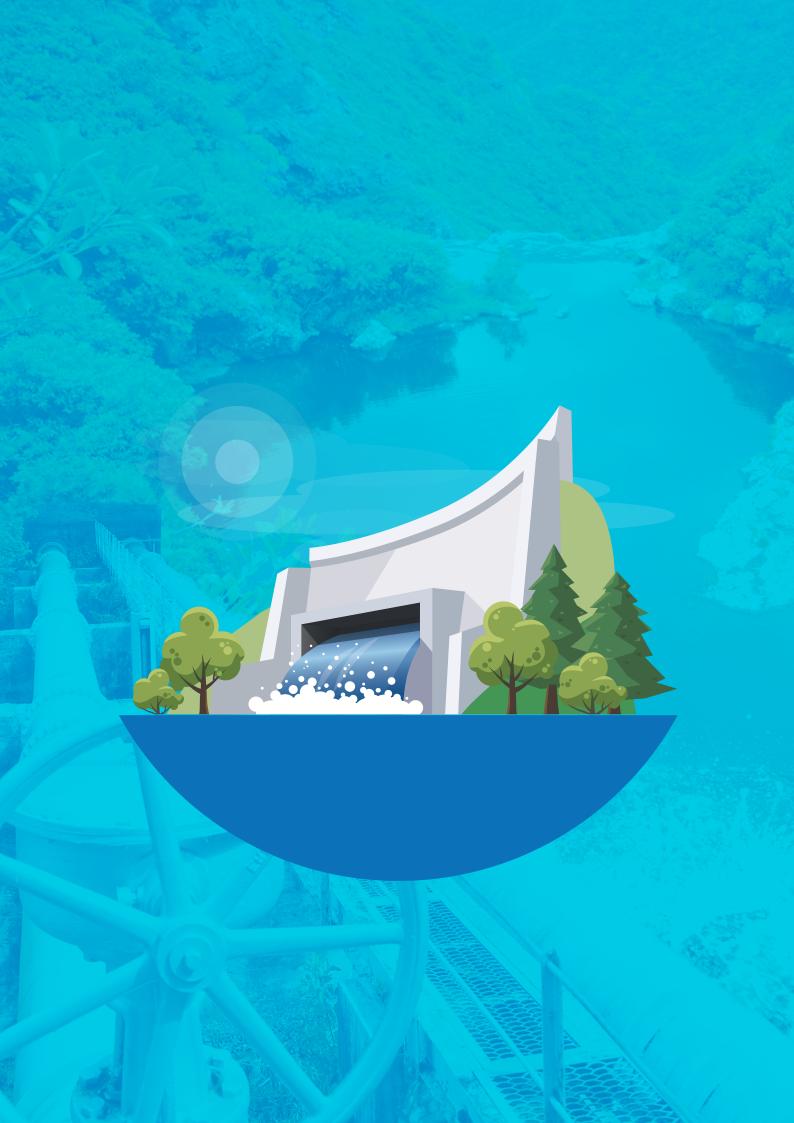
# **FUTURE PROJECTS**

Several projects have been earmarked for the near future with a view to meeting the increasing demand, and ensuring the reliability and quality of supply. They include:

- Construction of new HFO Storage tank of 2000 m<sup>3</sup> at Pointe Monnier Power Station;
- Upgrading of Turbochargers on MAN engines at both Pointe Monnier and Port Mathurin power stations;
- Construction of a new building for storage of T&D Materials at Port Mathurin;
- Installation of new equipment for 22 KV switchgear at Port Mathurin Power Station; and
- Installation of two auto-reclosers on the 22kV network.

# MANAGEMENT DISCUSSION & ANALYSIS

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# MANAGEMENT DISCUSSION AND ANALYSIS

# **OVERVIEW**

Recovery of the global economy remained subdued during the year 2015, with a growth rate of 3.1 per cent according to World Economic Outlook published by IMF in January 2016. Lower prices for fossil fuels and other commodities remained one of the key factors that continued to influence the global outlook. Oil prices have declined markedly since September 2015, reflecting expectations of sustained increases in production, albeit accompanied with low demand. Notwithstanding the fragile global recovery, the Mauritian economy fared moderately well in 2015, with an average inflation rate as low as 1.3 per cent and a real GDP growth rate of 3.4 per cent, according to Bank of Mauritius.

Despite the sharp appreciation of USD and Euro vis-à-vis the Mauritian Rupee for the year under review, the CEB has capitalized on the unexpectedly steep drop in oil prices, a major component of its total cost, to gain further momentum in its financial affairs and position. The trend of declining oil prices proved to be beneficial to the Organisation, by enabling costs of sales to drop by Rs 1,605 M, while the economic growth of the Mauritian economy boosted revenue from the sales of electricity by Rs 352 M.

For the financial year 2015, the CEB recorded an unprecedented level of profit. In fact, the profit reached Rs 1,767 M after accounting for a significant amount of Rs 1,018 M, representing actuarial losses provided on defined benefits plans for CEB employees. On account of the prevailing favourable conditions, the liquidity position improved significantly to reach Rs 3,334 M at year end. This strong liquidity position will assist the CEB in funding its forthcoming massive capital investments.

In line with the strategic objective of supporting the continued socio-economic development of the country, the CEB invested in the acquisition and renewal of its tangible fixed assets to the tune of Rs 1,166 M. The Utility was also in a better situation to re-organise its loan portfolio mix with a view to alleviating the burdensome servicing attached thereto. While there was significant early repayment of loans, provision was also made to unclog the Government Arrears Consolidated Loans, taken prior to financial year 1992.

# **FINANCIAL INDICATORS**

The financial performance for the year 2015 was better than expected, with a reported net comprehensive income of Rs 1,767 M. The CEB largely benefitted from favourable market conditions due to low commodity prices and interest rates. However, given that the Organisation is highly sensitive and vulnerable to various factors in the macro environment and owing to the magnitude of investments in the pipeline, a prudent approach is required in the management thereof.

# REVENUE

CEB's revenue is derived almost exclusively from the sales of electricity. There was an increase of 2% in the sales of electricity during the year 2015, while the corresponding average selling price per unit remained more or less constant. This growth in volume pushed up the sales of electricity to Rs 14,393 M for the year under review (2014: Rs 14,040 M).

# PROFITABILITY

The gross operating surplus to turnover ratio increased to 31.06% in 2015 (2014: 17.21%). This subsequently impacted on the net profit to turnover ratio, which stood at 12.21% in 2015 (2014: 10.41%). The generation costs, which are largely driven by the purchase of oils, dropped significantly to Rs 3,747 M for the year under review (2014: Rs 5,093 M). This could be attributed to the noticeable fall in the price of fuel oils, from USD 406.02 in June 2015 to USD 234.90 per metric ton for fuel oil 380 CST in December 2015. The operating ratio fell to 80.45 % in 2015 (2014: 93.61 %).

# ASSETS EFFICIENCY

The gross operating surplus to net assets rose to 17.11 % in 2015 (2014: 10.35%). The return (profit before interest and tax) on average net fixed assets in operation stood at 9.16% for the year (2014: 7.81%).

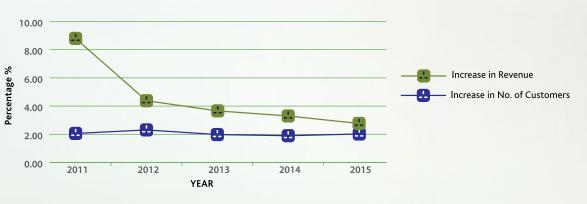
# LIQUIDITY AND GEARING

In 2015, the current ratio rose to 3.41 times (2014: 1.6 times) while the acid test ratio reached 2.75 times (2014: 1.15 times). On its part, the gearing ratio fell to 29 % (2014: 31%). A net decrease of Rs 338 M in borrowings was registered, bringing down the figure to Rs 5,852 M (2014: Rs 6,190 M). There was also a marked rise in the times of coverage of interest to 16 times for the year 2015 (2014: 7.3 times).

# SALES OF ELECTRICITY

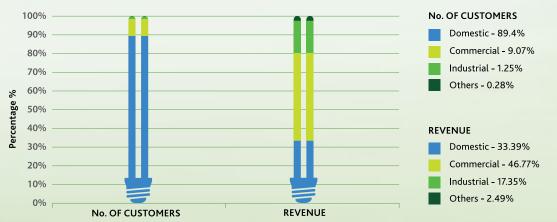
The core activity of the CEB is the sales of electricity and it represented 94.77% of the Organisation's turnover in 2015, a trend that had remained constant over the years.

The sales revenue distribution during the review period were as follows: domestic (33.39%), commercial (46.77%), industrial (17.35%), and others (2.49%). There was an increase of 2% in the number of domestic customers in the year. This pattern was also true for commercial and industrial customers. Overall, there was a rise of 53.23 GWh in the consumption of electricity, representing a net increase of 2% in volume compared to the year 2014.



### CUSTOMERS AND REVENUE TREND

Commercial customers remained the customer segment that generated the most revenue. They represented 9% of the total number of customers, but contributed nearly 47% to the total revenue from sales of electricity.



# CUSTOMERS CATEGORY AND REVENUE

Tariffs for electricity are normally fixed after consultation with the Government and they are not necessarily cost reflective of changes in the macro-environment. The last revision for tariffs of electricity took place in 2010. In spite of the major change in the economic environment in terms of low prices for fuel oils, the CEB kept the tariffs of electricity unchanged due to heavy investments in major capital projects to meet the growing electricity demand. Thus, the overall average selling price per unit remained more or less constant during the year 2015.

# **PROFITABILITY AND LIQUIDITY**

The CEB reaped the benefits of the favourable conditions prevailing in the market in terms of low interest rates and commodity prices, as demonstrated by a profit of Rs 1,767 M for the year 2015 (2014 : Rs 1,436 M) and flattering cash and cash equivalents of Rs 3,334 M at year end (2014 : Rs 895 M). The evolution of the profitability and liquidity positions of the CEB over the last five years is illustrated below:



### FINANCIAL PERFORMANCE AND POSITION

# **CAPITAL EXPENDITURE**

True to its vision of pursuing its modernization and development as a major utility service provider, the CEB has always considered investment in fixed assets to be of the utmost importance. The breakdown of the acquisition of fixed assets during 2015 was as follows:

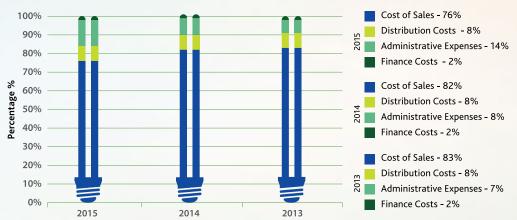


As at year ended 31 December 2015, the CEB managed a portfolio of fixed assets to the tune of Rs 21 billion, with the main category being Generating Assets.

The Utility strove to make an optimal use of these assets and resources. This is confirmed by a 9.16% rate of return (profit before interest and tax) on average net fixed assets in operation for that year.

# **REVENUE EXPENDITURE**

88% of the CEB's total revenue generated, equivalent to Rs 13,421 M, is expended as revenue expenditure. Cost of sales remained irreversibly the part that mostly consumed the total revenue expenditure.



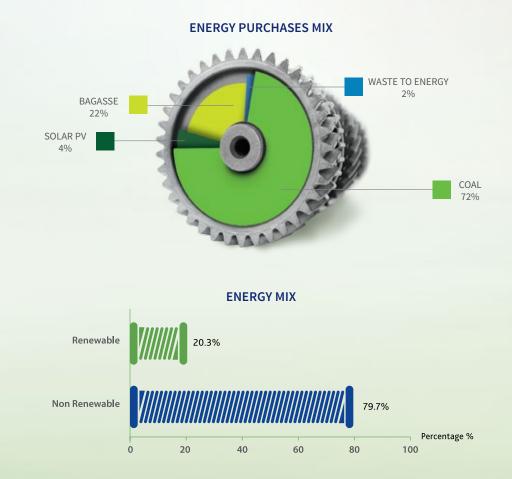
**REVENUE EXPENDITURE MIX** 

# **COST OF SALES**

Energy is produced mainly from fossils fuels, namely fuel oil and coal. The latter is used during off-crop season as co-generation facilities by Independent Power Producers (IPPs), with bagasse utilised as fuel during the crop season. The CEB mainly uses heavy oil for its base load plants and kerosene for its gas turbine. Hydro facilities are also used by the Utility, but in a relatively lower proportion, representing 4.5% of total energy generated.

In the year 2015, the total energy purchased from IPPs was 1,472.1 GWh for the amount of Rs 4,705M and this accounted for around 51% of the cost of sales. The CEB plants generated 1,218.3 GWh representing 45.3% of the total energy generated, at a total cost of Rs 4,532M.

The proportion of the amount spent on different sources of energy purchased from IPPs was as follows:



# **FUEL OIL PRICES**

In 2015, the price of oil on the world market reached its lowest level since 2003. During the year, the price was very volatile, with several swings before finally declining sharply in December 2015. This was mainly due to much lower demand relative to supply.



The prices of fuel oil, 180 CST and 380 CST paid by the CEB for the year 2015 can be summarised as follows:

The lowest CIF prices per metric ton paid by the CEB for both 180cst and 380cst were registered in December 2015, with market prices of USD 239.87 and USD 234.90 respectively. The average CIF price per metric ton paid by the CEB in 2015 was lower by more than 40% as compared to 2014.



FUEL OIL - AVERAGE CIF PRICE (USD/MT)

# COAL

The price of coal in the world market was hit by soaring production and a slowdown in global buying. This source of energy is mostly used by Independent Power Producers during off-crop season to produce electricity. Any fluctuation in price is borne by the CEB.

The movement in the prices of coal paid by the CEB during the past years is shown below:



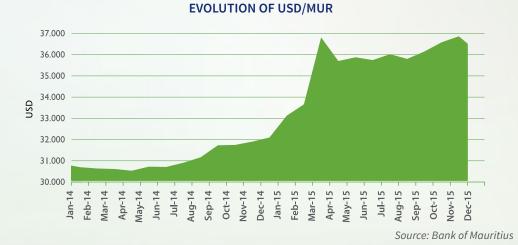


The average CIF Coal Price (USD/MT) paid by CEB has declined since 2011, from USD 134 to USD 65, representing a notable fall of 51%.

During 2015, the highest price paid was USD 70.11 per metric ton in May, and the lowest price was USD 56.52 in December.

# **FOREIGN EXCHANGE**

Foreign Currency transactions by the CEB are mainly conducted in Euro and USD. Debt Servicing was the primary obligation in the European Currency, followed by payments to foreign suppliers of materials and spare parts. Payments in USD were mainly geared towards Heavy Fuel Oil purchases from the State Trading Corporation. The evolution of the USD and EURO with respect to the Mauritian currency for the years 2014 and 2015 are illustrated below:



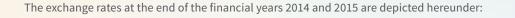
#### **EVOLUTION OF EURO/MUR**



9 0PTIMISING OUR RENEWABLE ENERGY POTENTIAL

Source: Bank of Mauritius

The USD experienced a very large appreciation vis-à-vis the MUR in 2015, gaining about 14.15% in the first quarter and, thereafter, remaining at that level for the rest of the year with some volatility. On the other hand, appreciation of the EURO, against the MUR, was milder at 3.7% over the year.



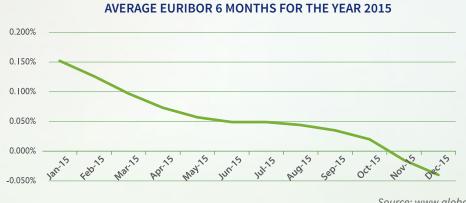


# EURO/MUR AND USD/MUR AT END OF ACCOUNTING PERIOD

# **FINANCIAL COSTS**

The finance charges of the CEB are dependent upon movements in the Repo Rate, the Euribor and the USD Libor. As illustrated in the graph below, interest rates have remained very low during the period under review, with the Euribor rate ending 2015 in negative territory. There was a resulting positive impact on the finance charges of the CEB, which decreased by 19.03 per cent over the period, as compared to the year 2014.

Changes in the average Euribor, USD Libor and Repo rates are illustrated below:



Source: www.global-rates.com

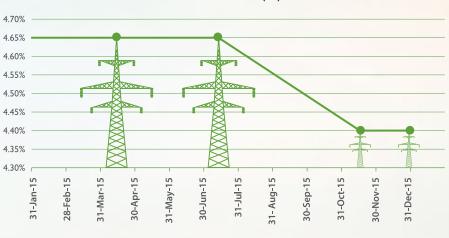
The Euribor continued its downward movement during 2015 and ended the year at an all-time low of 0.05% below zero.

AVERAGE U.S DOLLAR LIBOR 6 MONTHS FOR THE YEAR 2015



CENTRAL ELECTRICITY BOARD ANNUAL REPORT 2015

As regards the USD Libor rates, the cycle of very low interest rates prevailing since the year 2009 came to an end. Rates remained low with a mild upward trend during most of the year 2015 which was, however, more pronounced in the last two months, impacted by the decision of the Federal Reserve Bank to raise interest rates.



**REPO RATE 2015(%)** 

Source: Bank of Mauritius

The Repo rate remained stable for most of the year at 4.65% up till 08 November, thereafter decreasing by 25 basis points to 4.40% for the remaining period.

# FINANCIAL RISK MANAGEMENT

Financial Risks are constantly monitored and mitigation plans are reinforced with a view to minimising the adverse effects on the finance of the CEB, with special attention and focus placed on interest rates and exchange rates fluctuations. Commodity price risk in general, mainly regarding purchase of heavy fuel oil, are also kept under high scrutiny.

During the past few years, the CEB has largely benefitted from favourable market conditions in interest rates and low commodity prices. However, the Utility is fully aware of its vulnerability to changes in the external environment, and any adverse market condition can lead to high degree of volatility in profitability and liquidity. To this effect, a proper risk mitigation strategy is under consideration and will be implemented in the forthcoming future.

# **INTEREST RATE RISK**

Interest rate risk arises because of changes in the level of interest rates, and these have a direct impact on interest costs of the CEB.

The loan portfolio of the CEB consisted of both variable and fixed interest rates based loans. Due to favourable market conditions, the CEB continued to benefit from all time low interest rates.

The CEB retains the possibility of converting variable interest base loans to fixed interest based loans for some selected loans.

Exchange rate risk arises from movement in foreign currency which adversely affects the value of foreign currency position. Risks for the CEB are mainly due to the following reasons:

- Purchase of heavy fuel oil which is paid in USD;
- Purchase of machinery, equipment, spare parts and raw materials from abroad;
- Payment of consultancy services from abroad;
- Debts denominated in foreign currencies, mainly in EURO and USD; and
- Purchase of electricity from Independent Power Producers, taking into consideration the indexation formulae for the determination of the price paid which includes an exchange rate element.

The CEB constantly monitors foreign currency exchange risks and their influence on its finance, and acts accordingly.

In order to manage the risks associated with exchange rates uncertainty, the CEB has adopted several strategies. Foreign currencies are purchased in advance through bidding processes and a diversified portfolio of currencies is maintained. Moreover, the debt balance of the CEB is split in order to have a balanced loan portfolio. For the financial year 2015, 55.57% of loans were denominated in foreign currencies and the remaining balance was in local currency.

# LIQUIDITY RISK

Liquidity risk refers to the ability of a firm to meet its payment obligations in a timely manner at the least possible cost. In order to deal with, and mitigate, this particular risk, the CEB prepares short-term and long-term forecasts to ensure that funds are available to meet its obligations. The cash position of the CEB is regularly monitored and preventive measures are taken in advance to ensure the availability of funds.

During the financial year 2015, the CEB experienced a notable improvement in its liquidity position.

# **MEDIUM TERM OUTLOOK**

According to the issue of IMF World Economic Outlook 2016, it is projected that there would be a respective global growth rate of 3.4% and 3.6 % in 2016 and 2017. The recovery is forecasted as strengthening in 2017 and beyond, driven primarily by emerging markets and developing economies, as conditions in stressed economies start to normalize gradually.

The World Bank has slashed its forecast for oil prices for the year 2016, saying that a glut of oil that sent prices crashing by almost half last year, will continue to dominate the market. On the other hand, whilst the dollar is expected to gain further strength, the European Union (EU) is facing several tail risks which could weigh on the currency. In June 2016, Britain's decision to leave the EU sent shockwaves across the world and added a further layer of uncertainty to an already vulnerable global financial market.

The Mauritian economy gained a strong footing in the first quarter of 2016, as real economic growth hovered at 3.7%, the fastest expansion in seven successive quarters. Domestic inflation remained low, reflecting subdued global economic activity that suppressed commodity prices, together with an absence of upward domestic price pressures. In January 2016, the price of oil was at its lowest since 2003. The price of dollar vis-à-vis the rupee remained more or less constant in 2016, after a major appreciation in 2015. In February 2016, the Monetary Policy Committee of the Bank of Mauritius decided to keep the Repo Rate unchanged, taking into account the fact that the economy was still operating below its potential level, thereby reflecting mostly sluggishness in investment. These factors will further strengthen the financial performance of the CEB.

With future challenges in the macro-environment such as the promulgation of the Electricity Act 2005 and the setting up of the Utility Regulatory Authority (URA), the CEB will no longer operate in the same landscape as before. The unleashing of the market may bring fierce competition and the CEB will be required to set tariffs that are cost reflective.

In addition, following the amendment of the Finance Act in September 2016, the Board may, with the approval of the Minister, set up such companies under the Companies Act for : the implementation of projects relating to the production of electricity from renewable energy sources; the use of its transmission and distribution network for the development of projects of national interest; and the implementation of such other projects as the Board may determine. In this respect, the CEB has taken the strategic decision to diversify its activities and three companies, namely CEB (Green Energy) Company Ltd, CEB (Facilities) Company Ltd and CEB (Fibernet) Company Ltd have been incorporated in the years 2016 and 2017, in which CEB is the only shareholder.

In line with the strategic objective to guiding Mauritius towards a more stable energy future, the CEB has triggered several major projects in the power generation sector. The main one is the Redevelopment of the Saint Louis Power Plant at an estimated cost of Rs 4.2 Billion, financed jointly by the African Development Bank and CEB's own funds. In addition, following Government's decision to cancel the CT Power Coal Plant Project and as part of the Utility's contingency plan, provision is being made for the installation of a 105-120 MW Combined-Cycle Gas Turbine (CCGT) Power Plant at Fort George in order to meet the future electricity demand requirements. The overall project value is estimated at Rs 8.5 Billion.

On the renewable energy front, the CEB has signed a number of Energy Supply and Purchase Agreement (ESPA) with private promoters. The Small Scale Distributed Generation (SSDG) initiative, whereby small producers, mainly households, are given the incentive to generate their own electricity from renewable energy sources, has also been given much impetus. In line with Government's long-term strategy, the aim is to attain 35% of renewables in the overall generation mix by 2025.

# FINANCIAL STATEMENTS





ON THE FINANCIAL STATEMENTS OF THE CENTRAL ELECTRICITY BOARD FOR THE YEAR ENDED 31 DECEMBER 2015



# NATIONAL AUDIT OFFICE

# REPORT OF THE DIRECTOR OF AUDIT TO THE BOARD OF THE CENTRAL ELECTRICITY BOARD

# **Report on the Financial Statements**

I have audited the accompanying financial statements of the Central Electricity Board, which comprise the Statement of Financial Position as at 31 December 2015, and the Statement of Comprehensive Income, Statement of Changes in Equity, and Cash Flow Statement for the year then ended, and a summary of significant accounting policies and other explanatory information.

# Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards and in compliance with the Statutory Bodies (Accounts and Audit) Act, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

# Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with International Standards of Supreme Audit Institutions. Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

# Opinion

In my opinion, the financial statements give a true and fair view of the financial position of the Central Electricity Board as at 31 December 2015, and of its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards.

# **Report on Other Legal and Regulatory Requirements**

# Management's Responsibility for Compliance

In addition to the responsibility for the preparation and presentation of the financial statements described above, management is also responsible for ensuring that the activities, financial transactions and information reflected in the financial statements are in compliance with the laws and authorities which govern them.

# Auditor's Responsibility

In addition to the responsibility to express an opinion on the financial statements described above, my responsibility includes expressing an opinion on whether the activities financial transactions and information reflected in the financial statements are, in all material respects, in compliance with the laws and authorities which govern them. This responsibility includes performing procedures to obtain audit evidence about whether the agency's expenditure and income have been applied to the purposes intended by the legislature. Such procedures include the assessment of the risks of material non-compliance.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

# **Opinion on Compliance**

# Statutory Bodies (Accounts and Audit) Act

The Annual Report of the Central Electricity Board, including the financial statements, for the year ended 31 December 2015 were submitted to the National Audit Office on 13 April 2016. Following examination of the financial statements, various amendments were required. Errors were also noted in the Annual Report. The amended financial statements and Annual Report were received at my office on 6 April and 16 June 2017 respectively.

In my opinion, in all material respects, the activities, financial transactions and information reflected in the financial statements are in compliance with the Statutory Bodies (Accounts and Audit) Act.

# Public Procurement Act

The Central Electricity Board is responsible for the planning and conduct of its procurement. It is also responsible for defining and choosing the appropriate method of procurement and contract type in accordance with the provisions of the Act and relevant Regulations. My responsibility is to report on whether the provisions of Part V of the Act regarding the Bidding Process have been complied with.

In my opinion, the provisions of Part V of the Act have been complied with as far as it appears from my examination of the relevant records.

# Financial Reporting Act

The Directors are responsible for preparing the Corporate Governance Report. My responsibility is to report on the extent of compliance with the Code of Corporate Governance as disclosed in the Annual Report and on whether the disclosure is consistent with the requirements of the Code.

In my opinion, the disclosure in the Corporate Governance Report is consistent with the requirements of the Code.

K.C.TSE YUET CHEONG (Mrs) Director of Audit

National Audit Office Level 14, Air Mauritius Centre **PORT LOUIS** 

29 June 2017

CENTRAL ELECTRICITY BOARD ANNUAL REPORT 2015

# STATEMENT OF FINANCIAL POSITION

# AS AT 31 DECEMBER 2015

	Notes	2015	2014
ASSETS		Rs	Rs
Non-current assets			
Property , plant and equipment	3	21,445,641,626	21,164,883,536
Investment	4	1,000,000	1,000,000
Loans receivable	5	46,372,768	33,928,736
		21,493,014,394	21,199,812,272
Current Assets			
Inventories	6	1,539,108,077	1,774,622,725
Trade receivables	7	2,380,411,002	2,316,606,090
Other receivables	8	655,527,389	657,536,706
Loans receivable	5	30,878,028	31,670,141
Cash and cash equivalents	9	3,337,167,312	1,051,625,707
		7,943,091,808	5,832,061,369
TOTAL ASSETS		29,436,106,202	27,031,873,641
EQUITY AND LIABILITIES			
Capital and Reserves			
cupital and reserves			
Capital contributions	10	259,856,196	670,856,196
Revaluation reserve		4,976,267,525	4,989,110,952
Retained earnings		10,451,089,260	8,212,997,437
Total Equity		15,687,212,981	13,872,964,585
Non-Current Liabilities			
Borrowings	11	5,093,595,919	5,321,116,090
Deposits from customers		506,735,571	489,481,648
Retirement benefit obligations	12	4,589,488,000	2,976,618,000
Deferred Income - Grants received		646,346,285	594,367,893
Provisions	13	307,611,544	258,007,000
Advances from Government	14	274,000,000	-
		11,417,777,319	9,639,590,631
Current Liabilities			
Advances from Government	14	137,000,000	-
Trade and other payables	15	1,347,932,863	2,260,753,626
Borrowings	11	758,626,773	869,341,428
Bank overdrafts	9	2,794,456	156,914,843
Provisions	13	84,761,810	232,308,528
		2,331,115,902	3,519,318,425
TOTAL EQUITY AND LIABILITIES	1	29,436,106,202	27,031,873,641

These financial statements were approved for issue by the Board of Directors on the 26 May 2017. The notes on pages 5 to 28 \* form part of these financial statements.

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M. Naidoo Chairman

V

S. Appanah (Mrs) Board Member

# STATEMENT OF COMPREHENSIVE INCOME

# FOR THE YEAR ENDED 31 DECEMBER 2015

		2015	2014
	Notes	Rs	Rs
Revenue	16	14,468,029,750	14,113,629,822
Cost of sales	17	(9,204,067,287)	(10,808,539,478)
Gross Profit		5,263,962,463	3,305,090,344
Other operating income	18	298,309,179	307,528,268
Distribution costs	19	(1,005,604,982)	(1,042,137,748)
Administrative expenses	20	(1,659,989,692)	(1,178,883,963)
Operating Profit		2,896,676,968	1,391,596,901
Investment Income	21	51,883,392	14,146,558
Exchange gain	22	20,863,929	358,013,187
Finance costs	23	(184,395,098)	(227,743,620)
Profit for the Year		2,785,029,191	1,536,013,026
Other Comprehensive Income			
Actuarial gains/ (losses) on defined benefits plans	12	(1,018,317,000)	(100,475,000)
Total Comprehensive Income for the Year		1,766,712,191	1,435,538,026

CENTRAL ELECTRICITY BOARD ANNUAL REPORT 2015 % OPTIMISING OUR RENEWABLE ENERGY POTENTIAL

# **STATEMENT OF CHANGES IN EQUITY** AS AT 31 DECEMBER 2015

	Revaluation Reserve	erve	<b>Retained Earnings</b>		<b>Capital Contribution</b>	tion	Total Equity	
	2015	2014	2015	2014	2015	2014	2015	2014
Balance at 1 January	Rs 4,989,110,952	Rs 5,251,445,038	Rs 8,212,997,437	Rs 7,460,359,650	Rs 670,856,196	Rs 670,856,196	Rs 13,872,964,585	Rs 13,382,660,884
Adjustment	465,024,077	198,489,944	(6,487,872)	(1, 143, 724, 269)	(411,000,000)		47,536,206	(945,234,325)
Depreciation adjustment	(477,867,503)	(460,824,030)	477,867,503	460,824,030	1	1		
Total Comprehensive Income for the year			1,766,712,191	1,435,538,026			1,766,712,191	1,435,538,026
Balance at 31 December		4,976,267,526 4,989,110,952 10,451,089,259	10,451,089,259	8,212,997,437 259,856,196	259,856,196	670,856,196	15,687,212,981	13,872,964,585

# **CASH FLOW STATEMENT** FOR THE YEAR ENDED 31 DECEMBER 2015

	201	.5	20	14
	Rs	Rs	Rs	Rs
Cash Flows from Operating Activities				
Profit for the year		1,766,712,191		1,435,538,026
Adjustment for :				
Depreciation	1,344,057,563		1,296,655,672	
Exchange difference	(18,295,372)		(395,065,552)	
Finance costs	184,395,098		227,743,620	
Amortization of capital contribution/				
Capital receipts	(313,609,859)		(486,345,807)	
Investment Income	(51,883,392)		(14,146,558)	
Provision for pension costs	1,612,870,000	2,757,534,039	254,455,000	883,296,375
Operating surplus before working capital changes		4,524,246,230		2,318,834,401
Changes in operating assets and				
liabilities				
(Increase)/Decrease in inventories	235,514,648		(242,521,011)	
(Increase)/Decrease in receivables	(73,447,514)		(225,865,373)	
Increase/(Decrease) in accounts payables	(993,509,054)	(831,441,920)	(158,444,069)	(626,830,453)
Cash from operating activities		3,692,804,310		1,692,003,948
Returns from investments and				
servicing of finance				
Interest paid		(184,395,098)		(227,743,620)
Net cash from operating activities		3,508,409,212		1,464,260,328
Cash Flows from Investing Activities				
Grant received during the year	365,588,250		490,348,916	
Interest received	51,883,392		14,146,558	
Acquisition of tangible fixed assets	(1,166,279,448)	(748,807,806)	(815,922,262)	(311,426,788)
Cash Flows from Financing Activities				
Loans received	1,041,294,488		205,331,234	
Loans repaid	(1,476,663,340)	(435,368,852)	(983,776,391)	(778,445,157)
Foreign Exchange Adjustment		115,429,438		124,083,442
		2,439,661,992		498,471,825
Net change in cash and				
cash equivalents				
Cash and Cash equivalents as at I January	894,710,864		396,239,039	
Cash and cash equivalents as at				
31 December	3,334,372,858		894,710,864	
		2,439,661,992		498,471,825

# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2015

# 1. (a) LEGAL FORM AND ACTIVITIES

The Central Electricity Board (CEB) is a parastatal body wholly owned by the Government of Mauritius and reporting to the Ministry of Energy and Public Utilities. Established in 1952 and empowered by the Central Electricity Board Act of 25 January 1964, CEB's business is to "prepare and carry out development schemes with the general object of promoting, coordinating and improving the generation, transmission, distribution and sale of electricity" in Mauritius and Rodrigues Island.

The CEB's registered office and principal place of business is Rue du Savoir, Cyber City, Ebene.

# (b) STATEMENT OF COMPLIANCE

The Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRSs) following the amendment made to the Financial Reporting Act, through the Economic and Financial Measures (Miscellaneous Provisions) Act 2013.

# (c) STANDARDS AND INTERPRETATIONS IN ISSUE BUT NOT YET ADOPTED

At the date of authorisation of these financial statements, the following relevant International Financial Reporting Standards (IFRSs) had already been issued but not effective:

- i. IFRS 5 Non-current Assets Held for Sale and Discontinued Operations (1January 2016)
- ii. IFRS 14 Regulatory Deferral Accounts (1 January 2016)
- iii. IFRS 15 Revenue from Contracts with Customers (1 January 2017)
- iv. IAS 1 Presentation of Financial Statements (1 January 2016)
- v. IAS 7 Statement of Cash Flows
- vi. IAS 16 Property, Plant and Equipment (1 January 2016)
- vii. IAS 32 Offsetting Financial Assets and Financial Liabilities
- viii. IAS 38 Intangible Assets (1 January 2016)

The Directors anticipate that the adoption of these Standards interpretations and amendments in the future periods will have no material impact on the financial statements of the Board.

# 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A summary of the significant accounting policies, all of which have been applied consistently throughout the year is set out below:

# (i) Basis of Accounting

The Financial Statements have been prepared on a going concern basis. Except where otherwise stated, the historical cost has been used in the preparation of the financial statements.

# (ii) Comparative Figures

Comparative figures have been restated where necessary.

# (iii) Revenue Recognition

Revenue comprises income from the sale of energy and arises from energy generation, transmission and distribution services. The sale is recognised when:

- A contract exists

- Delivery has taken place (or the service provided)
- A quantitative price has been established or can be determined, and
- The receivables are likely to be recovered.

Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable, which is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount.

# (iv) Functional Currency and Foreign Currencies

Functional currency is the currency of the primary economic environment in which an entity operates and is normally the currency in which the entity primarily generates and expends cash.

The functional currency of the CEB is the Mauritian rupees (MUR). Transactions in foreign currencies are recorded in Mauritian rupees at the rate of exchange ruling at the date of the transactions. Monetary assets & liabilities at the Statement of Financial Position date which are expressed in foreign currencies are translated into Mauritian rupees at the rate of exchange ruling at the Statement of Financial Position date. Exchange gains and losses are dealt with through Statement of Comprehensive Income.

# (v) Borrowing Costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation.

All other borrowing costs are recognised in the Statement of Comprehensive Income of the period in which they are incurred.

# (vi) Grant Receivable and Capital Contribution

Grants received are accounted for as revenue. Asset-related capital contribution are treated as deferred income and amortised over a two/five-year period, whereas income-related capital contributions are recognised in the period they become receivable.

# (vii) Employees Benefits (Retirement Benefit Costs)

# State Plan

Contributions to the National Pension Scheme are charged to Comprehensive Income in the period in which they fall due.

# **Defined Benefit Pension Plan**

The CEB operates a defined benefit pension plan. The plan is funded by contributions from employees and employer. The employees used to contribute 6% of pensionable salaries, which were effectively paid by the CEB on their behalf since 1993. However, with the implementation of the new salary structure and conditions of service, effective as from July 2009, employees are contributing 9% of their pensionable salaries. The CEB's rate of contribution is determined by independent actuaries.

The cost of providing benefits is determined using the Projected Unit Credit Method with independent actuarial calculations being carried out at each Statement of Financial Position date. Service cost and finance cost components are recognised immediately to the extent that the benefits are already vested while re-measurements of the net defined benefit liability is recognized in other comprehensive income.

The superannuation recognised in the Statement of Financial Position represents the present value of the defined benefit obligation as adjusted for unrecognised actuarial gains and losses and unrecognised past service costs, and as reduced by the fair value of plan assets. Any asset resulting from this calculation is limited to the unrecognised actuarial losses and past service costs, plus the present value of available refunds and reductions in future contributions to the plan. The current service cost and any past service cost are included as an expense together with the associated interest cost, net of expected return on plan assets.

# **Defined Contribution Pension Scheme**

Employees joining the CEB since January 2004 were required to join a new defined contribution pension scheme, which came into operation as from July 2006. However, with the implementation of the salary structure and conditions of service, effective as from July 2009, this Scheme has been wound up in year 2014 and the employees transferred in the defined benefit plans.

# (viii) Employee Leave Entitlement

Employee entitlements leaves are recognised when they accrue to employees. An accrual is made for the estimated liability for annual leave and long-service leave payable as a result of services rendered by employees up to the Statement of Financial Position date.

# (ix) Property, Plant and Equipment

Property Plant and Equipment are stated at cost or valuation less accumulated depreciation and any accumulated impairment losses.

The generation, transmission and distribution assets and land and buildings are periodically revalued. The latest valuation has been carried by an independent professional valuer, Parsons Brinkerhoff Consultants Ltd of South Africa on Property, Plant and Equipment as at 31<sup>st</sup> December 2011. Valuation has been done on the basis of 'Existing Use Value' on the assumption that the assets for which current replacement value is sought will be used for the purpose of which it was originally intended.

The approach used by the valuers considered Replacement Cost New (RCN), Adjusted Replacement Cost New (ARCN) and the Depreciated Replacement Cost (DRC). ARCN is arrived at after reducing RCN by the amounts of obsolescence and DRC is computed after reducing ARCN by the amount of depreciation based on the ratio of estimated remaining economic life to the estimated total economic life of the assets. The concept of Optimised Depreciated Replacement Cost has also been adopted in course of valuation, which assumes replacement with modern equivalent assets performing the same function as existing assets. Fully depreciated assets, but still in use, have also been revalued and assigned an extended life time.

Any revaluation increase arising on the revaluation of such assets is credited to a revaluation reserve, except to the extent that it reverses a revaluation decrease for the same asset previously recognised in Statement of Comprehensive Income, in which case the increase is credited to Statement of Comprehensive Income to the extent of the decrease previously charged. A decrease in carrying amount arising on the revaluation of such assets is charged to Statement of Comprehensive Income to the extent that it exceeds the balance, if any, held in the revaluation reserve relating to a previous revaluation of that asset.

Depreciation on revalued assets is charged to Statement of Comprehensive Income. On the subsequent sale or retirement of a revalued asset, the attributable revaluation surplus remaining in the revaluation reserve is transferred directly to retained earnings. In addition, some of the surplus is transferred to retained earnings as the asset is used by the Board. In such a case, the amount of the surplus transferred is the difference between depreciation based on the revalued carrying amount of the asset and depreciation based on the asset's original cost.

Assets in the course of construction are carried at cost, less any recognised impairment loss. Cost includes professional fees and, for qualifying assets, borrowing costs capitalized. Depreciation of these assets, on the same basis as other property assets, commences when the assets are ready for their intended use.

Depreciation is charged so as to write off the cost or valuation of assets, other than freehold land and properties under construction, over their estimated useful lives, using the straight-line method as follows:

	YEARS
Plant and Machinery	20 - 50
Civil Works	25 - 50
Transmission & Distribution Assets	20 - 50
Furniture	10
Computer Equipment	3
Vehicles	5 - 7
Non Operational Buildings	60

The gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognised in the Statement of Comprehensive Income.

Major plant spares parts previously included in inventories have been reclassified as Property, Plant and Equipment.

# (x) Intangible Assets

Computer software that is not considered to form an integral part of any hardware equipment is recorded as intangible assets. The software, which has been fully depreciated, was revalued in 2011 with an extended life time of 4 years.

# (xi) Impairment

At each reporting date, the CEB reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where it is not possible to estimate the recoverable amount of an individual asset, the CEB estimates the recoverable amount of the cash-generating unit to which the asset belongs.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a discount rate that reflects current market assessments of time value of money and the risks specific to the asset for which the estimates of future cash flows have been adjusted.

If the recoverable amount of an asset (or cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or cash-generating unit) is reduced to its recoverable amount. An impairment loss is recognised immediately in Statement of Comprehensive Income, unless the relevant asset is carried at a revalued amount, in which case the impairment loss is treated as a revaluation decrease.

Where an impairment loss subsequently reverses, the carrying amount of the asset (or cash-generating unit) is increased to the revised estimate of its recoverable amount so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset (or cash-generating unit) in prior years. A reversal of impairment loss is recognised immediately in Statement of Comprehensive Income unless the relevant asset is carried at a revalued amount, in which case the reversal of the impairment loss is treated as a revaluation increase.

# (xii) Financial Assets

Financial assets are classified as loans and receivables; available-for-sale financial assets. Financial assets include cash and cash equivalent, trade receivables, other receivables, loans and investment. The classification depends on the nature of the financial assets and is determined at the time of initial recognition.

# Loans and Receivables

Trade receivables, loans and other receivables that have fixed or determined payments that are not quoted in an active market are classified as loans and receivables. Trade, loans and other receivables are measured at initial recognition at fair value and are subsequently measured at amortised cost, wherever applicable, using the effective interest rate method if the time value of money is significant. Gains and losses are recognised as income when the loans and receivables are derecognised or impaired, as well as through the amortisation process.

# Available-for-sale Financial Assets

Available-for-sale financial assets are those non-derivative financial assets that are not classified as loans and receivables. After initial recognition, available-for-sale financial assets are measured at fair value, with gains or losses recognised as a separate component of equity, until the investment is derecognised or until the investment is determined to be impaired, at which time, the cumulative gain or loss reported in equity is included in the Statement of Comprehensive Income. 101

The fair value of quoted investments is determined by reference to bid prices at the close of business at Statement of Financial Position date. Where there is no active market, fair value is determined using valuation techniques. Where fair value cannot be reliably estimated, assets are carried at cost.

# Impairment of Financial Assets

At each Statement of Financial Position date, CEB assesses whether a financial asset or group of financial assets is impaired.

If there is objective evidence that an impairment loss on loans and receivables carried at amortised cost has been incurred, the amount of the loss is measured as the difference between the assets' carrying amount and the present value of estimated future cash flow discounted at the financial asset's original effective interest rate.

The carrying amount of the asset is reduced, with the amount of the loss recognised in the Statement of Comprehensive Income. If an available-for-sale financial asset is impaired, an amount comprising the difference between its cost (net of any principal payment and amortisation) and its fair value is transferred from equity to Statement of Comprehensive Income.

# (xiii) Cash and Cash Equivalents

Cash and cash equivalents comprise cash at hand, bank overdraft and demand deposits and are subject to an insignificant risk of changes in value.

# (xiv) Inventories

Inventories are measured at the lower of cost (weighted average method) and net realisable value. Cost includes all costs of purchase, cost of conversion and other costs incurred in bringing the inventories to their present location and condition. Net realisable value represents the estimated selling price less all estimated costs of completion and costs to be incurred in marketing, selling and distribution.

# (xv) Financial Liabilities and Equity

Financial liabilities and equity instruments issued by the CEB are classified according to the substance of the contractual arrangements entered into and the definitions of a financial liability and an equity instrument. An equity instrument is any contract that evidences a residual interest in the assets of the CEB after deducting all of its liabilities.

Equity instruments issued are recorded at the proceeds, net of direct issue costs.

# (xvi) Financial Liabilities

Financial liabilities are classified as other financial liabilities measured at amortised cost and the classification is determined at initial recognition.

Other financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. After initial recognition, other financial liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective yield basis. The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or, where appropriate, a shorter period.

Interest-bearing bank loans and overdrafts are initially measured at fair value, and are subsequently measured at amortised cost, using the effective interest rate method. Any difference between the proceeds (net of transaction costs) and the settlement or redemption of borrowings is recognised over the term of the borrowings in accordance with the CEB's accounting policy for borrowing costs.

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# (xvii) Provisions

Provisions are recognised when the CEB has a present obligation as a result of a past event, and it is probable that the CEB will be required to settle that obligation. Provisions are measured at the directors' best estimate of the expenditure required to settle the obligation at the Statement of Financial Position date, and are discounted to present value where the effect is material.

# (xviii) Critical Judgements and Key Sources of Estimation Uncertainty

The preparation of financial statements in accordance with IFRS requires the directors and management to exercise judgement in the process of applying the accounting policies. It also requires the use of accounting estimates and assumptions that may affect the reported amounts and disclosures in the financial statements. Judgements and estimates are continuously evaluated and are based on historical experience and other factors, including expectations and assumptions concerning future events that are believed to be reasonable under the circumstances. The actual results could, by definition therefore, often differ from the related accounting estimates.

Where applicable, the notes to the financial statements set out areas where management has applied a higher degree of judgement that have a significant effect on the amounts recognised in the financial statements, or estimations and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

The key assumptions concerning the future and other key sources of estimation uncertainty at the Statement of Financial Position date include retirement benefit obligations.

Financial assets and liabilities are recognised on the Statement of Financial Position when the CEB has become party to the contractual provisions of the financial instruments.

# MAURITIUS & RODRIGUES

	Total Cost as at 31.12.2014	Additions For the year 2015	REVALUATION 2015	Cost Disposal in the year 2015	Total Cost after Revaluation & Additions as at 31.12.2015	Total Depreciation Charge for Period 2015	Depreciation On Disposal for year 2015	Accumulated Depreciation as at 31.12.2014	Accumulated Depreciation as at 31.12.2015	Carrying Amount as at 31.12.2014	Carrying Amount as at 31.12.2015
<b>GENERATION ASSETS</b>											
Thermal Power Station	17,863,128,758	112,060,341	56,362,762	(2,644,215)	18,028,907,646	619,848,079	(2,585,841)	7,772,105,658	8,389,367,897	10,091,023,099	9,639,539,750
Hydro Power Station	5,415,145,140	52,216,044	43,780,583		5,511,141,767	162,393,581		3,560,659,978	3,723,053,559	1,854,485,162	1,788,088,209
Wind Park	91,051,446	3,703,097			94,754,542	2,872,462		20,897,329	23,769,792	70,154,117	70,984,751
TOTAL GENERATING ASSETS	23,369,325,343	167,979,482	100,143,346	(2,644,215)	23,634,803,956	785,114,123	(2,585,841)	11,353,662,965	12,136,191,247	12,015,662,378	11,498,612,709
TRANSMISSION ASSETS											
Transmission Network	1,233,618,905	45,980,690			1,279,599,596	31,975,588		487,575,391	519,550,979	746,043,514	760,048,616
Major Substations	2,474,087,772	159,740,485	90,213,509		2,724,041,766	90,382,318	1	1,419,384,085	1,509,766,403	1,054,703,687	1,214,275,362
System Control	267,604,851	39,024,762			306,629,613	16,095,295		109,823,694	125,918,989	157,781,157	180,710,624
SUB TOTAL	3,975,311,529	244,745,937	90,213,509	•	4,310,270,974	138,453,202		2,016,783,171	2,155,236,372	1,958,528,358	2,155,034,603
DISTRIBUTION ASSETS											
Distribution Network	10,211,843,806	260,308,874	4,172,395		10,476,325,075	305,791,303		4,781,966,314	5,087,757,617	5,429,877,492	5,388,567,459
TOTAL TRANSMISSION & DIST ASSETS	14.187,155.334	505.054.811	94.385.904		14.786.596.050	444.244.505		6.798.749.484	7.242.993.989	7.388.405.850	7.543.602.061
TOTAL GENERATING, TRANS &		-							-		
DIST ASSETS	37,556,480,678	673,034,293	194,529,250	(2,644,215)	38,421,400,006	1,229,358,628	(2,585,841)	18,152,412,449	19,379,185,236	19,404,068,228	19,042,214,770
LAND, BUILDINGS & OTHER ASSETS											
Land Full Ownership	343,019,645	22,479,356			365,499,001	1				343,019,645	365,499,001
Buildings	554,468,204	17,666,953	5,144,534		577,279,692	9,913,317		147,823,546	157,736,863	406,644,658	419,542,829
Furniture & Office Equipment	98,833,512	13,940,677		(32,900)	112,741,289	6,124,529	(24,949)	63,224,780	69,324,360	35,608,732	43,416,929
Motor Vehicles	188,520,356	39,364,410	19,630,000	(17,182,073)	230,332,693	23,916,603	(16,051,656)	126,514,256	134,379,203	62,006,099	95,953,490
<b>Computer Equipment</b>	109,549,236	4,223,508	267,007		114,039,752	5,865,532		98,434,350	104,299,882	11,114,886	9,739,869
Tools & Instruments	230,835,660	11,252,396			242,088,056	12,475,425		190,033,042	202,508,467	40,802,618	39,579,588
Major Parts	168,867,058	61,374,976			230,242,034					168,867,058	230,242,034
Asset Under Construction	633,138,144	307,007,195			940,145,339					633,138,144	940,145,339
SUB TOTAL	2,327,231,816	477,309,471	25,041,541	(17,214,973)	2,812,367,855	58,295,405	(16,076,606)	626,029,975	668,248,776	1,701,201,840	2,144,119,079
TOTAL ASSETS EXCLUDING MIS	39,883,712,493	1,150,343,763	219,570,792	(19,859,188)	41,233,767,860	1,287,654,033	(18,662,446)	18,778,442,425	20,047,434,012	21,105,270,069	21,186,333,849
INTANGIBLE ASSETS											
Implementation of MIS	375,735,652	9,944,555	246,153,284	•	631,833,490	56,403,530	1	316,122,184	372,525,714	59,613,467	259,307,776

1. The Infrastructure, plant & Equipment has been revalued as at 31.12.2011 by independent valuer, Parsons Brinckerhoff Consultants, using a net replacement cost basis having regard to the This resulted in a revalution surplus of Rs 2.1 billion. latest market values available.

1.344.057.562

41,865,601,351

465,724,076

40,259,448,145 | 1,160,288,318

TOTAL ASSETS

2. Had the assets been reported at historical costs, (Excluding the last revaluation) the Net Book Value would have been approximately Rs15.6 billion

# **NOTES TO THE FINANCIAL STATEMENTS** 3. SCHEDULE OF PROPERTY, PLANT AND EQUIPMENT AS AT 31 DECEMBER 2015

# NOTES TO THE FINANCIAL STATEMENTS

4. INVESTMENT	2015	2014
	Rs	Rs
Investment	1,000,000	1,000,000
	1,000,000	1,000,000

1000 ordinary shares of Rs 1,000 each have been subscribed in a private company, the CEB Investment Company Ltd. This company, which is fully owned by the CEB, was incorporated on 24<sup>th</sup> April 2007 with a view to participate, with a 26% shareholding, in a coal fired project together with CT Power Ltd, a public limited company incorporated in Malaysia through The (Mauritius) CT Power, a private limited company. However, the project will not be undertaken. As at 31.12.2015, there has been no transactions conducted by CEB Investment Company Ltd.

5. LOANS RECEIVABLE	2015	2014
	Rs	Rs
Staff loans for vehicles	74,899,264	62,426,247
Others	2,351,532	3,172,630
	77,250,796	65,598,877
Receivables within 12 months	30,878,028	31,670,141
Receivables after 12 months	46,372,768	33,928,736

The staff loans bear interest at the fixed rate 7.5% for all loan taken before July 2013. As from 1.07.2013, the rate of interest has been linked to the Repo Rate. The loan is repayable over a period of 5 to 7 yrs.

6. INVENTORIES	2015	2014
	Rs	Rs
Inventories comprise the following items :		
Fuel and lubricating oil	324,630,139	575,358,175
Spare parts for power stations	498,611,179	459,177,371
Transmission and distributions	686,756,443	711,338,902
Others	14,299,264	13,424,994
Sub total	1,524,297,024	1,759,299,442
Rodrigues	14,811,053	15,323,284
	1,539,108,077	1,774,622,725

Major spare parts exceeding Rs 500,000 in value have been identified and verified whether of capital nature. An amount of Rs 230.2 M worth of stock for 2015 has been capitalised and analysed into Generation Rs 128.2 M, Transmission & Distribution Rs 101.3 M and Rodrigues Rs 0.7 M

7. TRADE RECEIVABLES	2015	2014
	Rs	Rs
Trade Debtors	2,521,841,547	2,445,075,180
Less Impairment	(141,430,544)	(128,469,090)
	2,380,411,002	2,316,606,090

Trade debtors include electricity bills amounting to Rs 1,451 M for December 2015 consumption and delivered in January & February 2016. No surcharge is levied on trade receivables for the first 20 days from date of delivery of invoice. Surcharge is payable at 5 per cent on the outstanding balance.

8. OTHER RECEIVABLES	2015	2014
	Rs	Rs
Prepayments	15,717,934	7,961,212
VAT	240,672,767	254,002,024
Staff Pension Fund	43,130,515	-
Manual Workers Pension Fund	31,787,204	-
Debtors for rechargeable	127,856,314	195,257,862
Advance Payment to Suppliers	54,234,798	3,248,376
Government (Sarako & SSDG)	98,800,000	60,500,000
Others	43,327,855	136,567,232
	655,527,388	657,536,706

9. BANK BALANCES AND CASH	2015	2014
	Rs	Rs
Bank deposits	3,336,416,310	1,050,885,985
Cash balances	751,002	739,722
	3,337,167,312	1,051,625,707
Bank Overdraft	(2,794,456)	(156,914,843)
Bank Overdraft analysed Into:		
Bank overdraft	(2,794,456)	(156,914,843)
Overnight facility	-	-
	(2,794,456)	(156,914,843)
The average interest rates paid were as follows:		
Bank overdraft and overnight facility		0.93%

Bank balances and cash comprise cash held by the Board and short term bank deposits with an original maturity of six months or less. The carrying amount of these assets approximates their fair value.

Bank overdrafts are payable on demand and bear an average effective interest of 0.93%. The overdrafts are guaranteed by Government.

10. CAPITAL CONTRIBUTION	2015	2014
	Rs	Rs
Capital Contribution	259,856,196	670,856,196

In the Financial Year 2015, there has been reclassification of the amount shown for this item. Following a correspondence of the Ministry of Finance and Economic Development requesting CEB to disburse part of the sum due, Rs 411 M has been reclassified as liability; Rs 137 M as current liability whilst Rs 274 M as non current liability. No decision has been taken by the Ministry for the remaining amount of RS 259M.

11. BORROWINGS	2015	2014
	Rs	Rs
Current Term loans	758,626,773	869,341,428
Borrowings due within one year	758,626,773	869,341,428
Non-current		
Term loans	5,093,595,919	5,321,116,090
Borrowings due after one year	5,093,595,919	5,321,116,090
TOTAL INDEBTEDNESS AS AT 31 DECEMBER	5,852,222,692	6,190,457,518
TOTAL INDEDTEDINESS AS AT ST DECEMBER	3,032,222,032	0,130,431,310
	2015	2014
Term loans due after one year are repayable as follows:	Rs	Rs
Between two and five years	2,730,244,308	2,846,140,175
After five years	2,363,351,612	2,474,975,915
	5,093,595,919	5,321,116,090

During the year 2015, borrowing costs capitalised amounted to Rs 8,407,956

Analysis of borrowings by currency:

Loans (other than Government loans) guaranteed by Government amounts to Rs 954M. The annual average interest rate paid on loans was 3.16% (2014: 3.34%)

The Directors estimate that the fair values of the borrowings are equivalent to their carrying amounts.

Currency	2015 Rs	2014 Rs
Mauritian Rupee	2,599,875,343	2,575,052,880
US Dollars	133,125,047	138,052,381
EURO	3,119,222,302	3,477,352,257
TOTAL	5,852,222,692	6,190,457,518

Loans of Rs 1.417 M were arranged at fixed interest rates and Rs 4,434 M were arranged at floating rates.

CENTRAL ELECTRICITY BOARD ANNUAL REPORT 2015 0 OPTIMISING OUR RENEWABLE ENERGY POTENTIAL

# **11. SCHEDULE OF LOANS**

	Repayable after Year 5				1	30,818,256	915,146,528	183,975,000	1,129,939,783	1,129,939,783		1	46,658,063	18,300,642	64,958,706	433,960,072	223,658,453			256,845,466	253,989,132	1		1			1,168,453,123	2,363,351,612
	Repayable in years 2-5				1	80,992,877	735,282,778	116,952,000	933,227,655	933,227,655		1	160,966,194	550,912,688	711,878,881	347,168,058	178,926,762			205,476,372	203,191,306	50,375,273	100,000,000				1,085,137,771	2,730,244,308
INSTALMENTS	Repayable Within One year					21,313,915	183,820,694	29,238,000	234,372,609	234,372,609			40,241,548	137,728,172	177,969,720	86,792,014	44,731,691			51,369,093	50,797,826	12,593,818	100,000,000				346,284,443	758,626,773
	Due But Not Paid					,			÷	•					•												•	
	As At 31-Dec-15	1	1	1	1	133,125,048	1,834,250,000	330,165,000	2,297,540,048	2,297,540,048		1	247,865,805	706,941,502	954,807,307	867,920,144	447,316,906	1	1	513,690,931	507,978,264		200,000,000	1	1	1	2,599,875,337	5,852,222,692
	As At 31-Dec-15	131,452,774	218,633,940	296,021,250	646,107,964	163,922,381	371,598,334	29,238,000	564,758,715	493,251,326 1,210,866,678	82,143,962	304,225,036	412,181,081	713,648,759	230,962,767 1,512,198,839	206,500,000	102,000,000	70,000,000	50,000,000	1	1	513,184,646 160.000.000	300,000,000	209,377,318	376,000,000	252,534,100	2,239,596,064	3,485,998,241  1,476,663,340   4,962,661,581
LOAN REDEEMED	اہ 2015	6,018,750	65,590,182	192,413,812	264,022,744	21,313,915	178,676,667	29,238,000	229,228,582	493,251,326	19,387,354	33,605,693	40,241,549	137,728,172	230,962,767			49,000,000	35,000,000			20,5/2,4/2 32.000.000	100,000,000	57,102,905	282,000,000	176,773,870	752,449,247	1.476,663,340
ΓΟ	As At 1-Jan-15	125,434,024	153,043,758	103,607,438	382,085,220	142,608,466	192,921,667		335,530,133	717,615,353	62,756,608	270,619,344	371,939,533	575,920,587	1,281,236,072	206,500,000	102,000,000	21,000,000	15,000,000			492,612,174 128.000.000	200,000,000	152,274,413	94,000,000	75,760,230	1,487,146,817	3,485,998,241
	As At 31-Dec-15	131,452,775	218,633,940	296,021,250	646,107,965	297,047,429	2,205,848,333	359,403,000	2,862,298,762	3,508,406,727	82,143,962	304,225,036	660,046,886	1,420,590,261	2,467,006,146	1,074,420,144	549,316,906	70,000,000	50,000,000	513,690,931	507,978,264	5/6,153,//8 160.000.000	500,000,000	209,377,318	376,000,000	252,534,100	4,839,471,441	10,814,884,314
VED	Currency Variation					16,386,582	47,483,333	8,547,000	72,416,916	72,416,916		1	6,416,516	18,300,634	24,717,151												1	97,134,066
LOAN RECEIVED	In 2015									1					'					513,690,931	507,978,264	19,625,293					1,041,294,488	9.676.455.760 1.041.294.488
	As At 1-Jan-15	131,452,775	218,633,940	296,021,250	646,107,965	280,660,847	2,158,365,000	350,856,000	2,789,881,847	3,435,989,812	82,143,962	304,225,036	653,630,370	1,402,289,627	2,442,288,995	1,074,420,144	549,316,906	70,000,000	50,000,000	'		556,528,485 160.000.000	500,000,000	209,377,318	376,000,000	252,534,100	3,798,176,953	9.676,455,760
	As At 1-Jan-15	6,018,750	65,590,182	192,413,812	264,022,744	138,052,381	1,965,443,333	350,856,000	2,454,351,714	2,718,374,458	19,387,354	33,605,692	281,690,838	826,369,040	1,161,052,924	867,920,144	447,316,906	49,000,000	35,000,000	•		63,916,311 32.000.000	300,000,000	57,102,905	282,000,000	176,773,870	2,311,030,136	6,190,457,518
DESCRIPTION		Govt Loans: Local Loans Development Loans	Kuwait Fund - 132 kV	Jin FEI -project		Foreign Loans BADEA	Fort Victoria Phase 2	Pte Monier (Rod)		SUB TOTAL	Other Loans (Foreign) EIB	KFW -FORT VIC	New St Louis Loan-NIB	HSBC Fort -Victoria1	SUB TOTAL	Other Loans (Local) CEB Pension Funds-Staff	<b>CEB</b> Pension Funds-Manual	CEB Pension Funds-Staff	CEB Pension Funds-Manual	CEB SPFund -Add Board Cont-	CEB MWPFund -Add Board Cont-	Consumers Development Loans New St Louis Loan-HSBC	6.29 sbm loan	HSBC St Louis(refin Bar&BDM))	SBM refinancing FV2	HSBC Fort victoria		

# **12. EMPLOYEE BENEFITS**

The Board operates a Defined Benefit Plan for its employees. The assets of the Funds are held independently and administered by the CEB Staff Pension Fund and the CEB Manual Workers Pension Fund.

Year Ending	Year Ending 31/12/2014
	Rs'000
KS 000	KS 000
2,976,618	1,714,517
-	1,007,646
867,644	269,606
1,018,317	100,475
(273,091)	(115,626)
4,589,488	2,976,618
2 893 555	2,863,419
	2,803,419
	115,626
	87,437
	(284,220)
-	(201,220)
-	_
(132,427)	(100,475)
2,861,155	2,893,555
5,870,173	5,585,582
<u>5,870,173</u> 135,970	5,585,582 72,921
5,870,173 135,970 72,900	5,585,582 72,921 87,437
5,870,173 135,970 72,900 423,368	5,585,582 72,921
5,870,173 135,970 72,900	5,585,582 72,921 87,437
5,870,173 135,970 72,900 423,368	5,585,582 72,921 87,437
5,870,173 135,970 72,900 423,368	5,585,582 72,921 87,437
5,870,173 135,970 72,900 423,368 521,168 - -	5,585,582 72,921 87,437 408,453 - - -
5,870,173 135,970 72,900 423,368 521,168 - -	5,585,582 72,921 87,437 408,453 - - -
5,870,173 135,970 72,900 423,368 521,168 - -	5,585,582 72,921 87,437 408,453 - - -
5,870,173 135,970 72,900 423,368 521,168 - - - (458,826) - - -	5,585,582 72,921 87,437 408,453 - - -
5,870,173 135,970 72,900 423,368 521,168 - - (458,826) - - - 1,522,601	5,585,582 72,921 87,437 408,453 - - -
5,870,173 135,970 72,900 423,368 521,168 (458,826) - - - 1,522,601 (117,762)	5,585,582 72,921 87,437 408,453 - - -
5,870,173 135,970 72,900 423,368 521,168 (458,826) (458,826) - 1,522,601 (117,762) (518,949)	5,585,582 72,921 87,437 408,453 - - - (284,220) - - - - - - - - - - - - - - - - - - -
	31/12/2015 Rs'000 2,976,618 - 867,644 1,018,317 (273,091) 4,589,488 2,893,555 212,862 273,091 72,900 (458,826) - (132,427)

	Year Ending	Year Endi
	31/12/2015	31/12/201
omponents of amount recognised in P&L		
Current service cost	135,970	72,9
Past service cost	521,168	
Settlement (gain)/loss		
Service cost	657,138	72,9
Net interest on net defined benefit liability/(asset)	210,506	196,6
Total	867,644	269,6
Components of amount recognised in OCI		
Return on plan assets (above)/below interest income	122 427	100.45
•	132,427	100,47
Liability experience (gain)/loss	1,522,601	
Liability (gain)/loss due to change in demographic assumptions	(117,762)	
Liability (gain)/loss due to change in financial assumptions	(518,949)	
Change in effect of asset ceiling		
Total	1,018,317	100,47
Allocation of Plan assets at End of Year	%	
Equity - Overseas quoted	3	
Equity - Local quoted	2	
Debt - Overseas unquoted	-	
Debt - Secured	2	
Debt - Related Party (CEB)	46	
Debt - Local quoted	2	
Debt - Local unquoted	1	
Cash and other	44	4
Total	100	10
		-
Allocation of Plan Assets at End of Period	%	
Allocation of Plan Assets at End of Period Reporting entity's own transferable financial instruments	%	
Reporting entity's own transferable financial instruments	0	
Reporting entity's own transferable financial instruments Property occupied by reporting entity	0	
Reporting entity's own transferable financial instruments Property occupied by reporting entity	0 0 46	
Reporting entity's own transferable financial instruments         Property occupied by reporting entity         Other assets used by reporting entity         Principal Assumptions used at End of Period         Discount rate	0 0 46 7.0%	
Reporting entity's own transferable financial instruments         Property occupied by reporting entity         Other assets used by reporting entity         Principal Assumptions used at End of Period         Discount rate         Rate of salary increases	0 0 46	7.50
Reporting entity's own transferable financial instruments         Property occupied by reporting entity         Other assets used by reporting entity         Principal Assumptions used at End of Period         Discount rate	0 0 46 7.0%	7.50
Reporting entity's own transferable financial instruments         Property occupied by reporting entity         Other assets used by reporting entity         Principal Assumptions used at End of Period         Discount rate         Rate of salary increases         Rate of pension increases         Average retirement age (ARA)	0 0 46 7.0% 5.0%	7.50 5.50 5.00
Reporting entity's own transferable financial instruments         Property occupied by reporting entity         Other assets used by reporting entity         Principal Assumptions used at End of Period         Discount rate         Rate of salary increases         Rate of pension increases	0 0 46 7.0% 5.0% 4.0%	7.50 5.50 5.00
Reporting entity's own transferable financial instruments         Property occupied by reporting entity         Other assets used by reporting entity         Principal Assumptions used at End of Period         Discount rate         Rate of salary increases         Rate of pension increases         Average retirement age (ARA)	0 0 46 7.0% 5.0% 4.0%	7.50 5.50 5.00 63.
Reporting entity's own transferable financial instruments         Property occupied by reporting entity         Other assets used by reporting entity         Principal Assumptions used at End of Period         Discount rate         Rate of salary increases         Rate of pension increases         Average retirement age (ARA)         Average life expectancy for:	0 0 46 7.0% 5.0% 4.0% 64.0	7.50 5.50 5.00 63.5 16.9 yea 21.3 yea
Reporting entity's own transferable financial instrumentsProperty occupied by reporting entityOther assets used by reporting entityPrincipal Assumptions used at End of PeriodDiscount rateRate of salary increasesRate of pension increasesAverage retirement age (ARA)Average life expectancy for: Male at ARAFemale at ARA	0 0 46 7.0% 5.0% 4.0% 64.0 16.6 years	7.50 5.50 5.00 63.5 16.9 yea
Reporting entity's own transferable financial instrumentsProperty occupied by reporting entityOther assets used by reporting entityPrincipal Assumptions used at End of PeriodDiscount rateRate of salary increasesRate of pension increasesAverage retirement age (ARA)Average life expectancy for: Male at ARA	0 0 46 7.0% 5.0% 4.0% 64.0 16.6 years	7.50 5.50 5.00 63.5 16.9 yea

The above sensitivity analysis has been carried out by recalculating the present value of obligation at end of period after increasing or decreasing the discount rate while leaving all other assumptions unchanged. Any similar variation in the other assumptions would have shown smaller variations in the defined benefit obligation.

# 12. EMPLOYEE BENEFITS (CONT'D)

#### **Future cashflows**

The funding policy is to pay contributions to an external legal entity at the rate recommended by the entity's actuaries.

Expected employer contribution for the next year	605,699	360,274
Weighted average duration of the defined benefit obligation	13 years	14 years

Retirement benefit obligations have been based on an actuarial report from Aon Hewitt dated 16 March 2016.

	2015	2014
	Rs	Rs
Provision For Group Pension Fund as at 31 December	2,976,618,000	1,714,517,000
Adjustment due to implementation of IAS19		1,007,646,000
Provision For Group Pension Fund for FY2014	1,612,870,000	254,455,000
Provision For Group Pension Fund as at 31 December	4,589,488,000	2,976,618,000

The Company operates a final salary defined benefit pension plan for its employees. The plan exposes the Company to normal risks associated with defined benefit pension plans such as investment, interest, longevity and salary risks.

#### Investment Risk:

(where the plan is funded): The plan liability is calculated using a discount rate determined by reference to government bond yields; if the return on plan assets is below this rate, it will create a plan deficit and if it is higher, it will create a plan surplus.

#### **Interest Risk:**

A decrease in the bond interest rate will increase the plan liability; however, this may be partially offset by an increase in the return on the plan's debt investments and a decrease in inflationary pressures on salary and pension increases.

#### Longevity Risk:

(where the plan is funded and an annuity is paid over life expectancy): The plan liability is calculated by reference to the best estimate of the mortality of plan participants both during and after their employment. An increase in the life expectancy of the plan participants will increase the plan liability.

#### Salary Risk:

The plan liability is calculated by reference to the future projected salaries of plan participants. As such, an increase in the salary of the plan participants above the assumed rate will increase the plan liability whereas an increase below the assumed rate will decrease the liability.

There has been no plan amendment, curtailment or settlement during the year.

# **13. PROVISIONS**

	2015	2014
	Rs	Rs
Carrying Amounts	392,373,354	490,315,529
Payable within 1 year	84,761,810	232,308,529
Payable in more than 1 year	307,611,544	258,007,000

## **14. ADVANCES FROM GOVERNMENT**

	2015	2014
Repayable within one year	<b>Rs</b> 137,000,000	Rs
Repayable after one year	274,000,000	
Repayable Advances from Government	411,000,000	

# **15. TRADE AND OTHER PAYABLES**

	2015	2014
	Rs	Rs
Trade Creditors	911,928,400	714,854,815
Provision for loose bagasse	40,383,665	38,546,299
Interest on government loans	3,813,392	5,614,108
Wages and Salaries due	11,437,971	11,757,870
MBC TV Licence Fee	51,069,732	48,111,216
Retention Money on Contracts	21,928,867	22,725,144
Damage & Interest (Court Case)	100,000,000	100,000,000
Loan from Pension Funds		1,021,669,195
Payables to MRA	23,866,530	21,186,269
Other creditors and accruals	183,504,307	276,288,710
	1,347,932,864	2,260,753,625

Loans from pension funds of Rs 1,021,669,195 representing additional Board contributions for pensions, were previously recognized as accruals in the Financial Statements. The figure is made up of Rs 513.7 M and Rs 507.9 M for contributions towards Staff and Manual Pension Funds respectively. Board approved the transfer from accruals to loans on 03.07.2015.

# **16. REVENUE**

	2015	2014
	Rs	Rs
Sales of electricity	14,392,805,413	14,040,453,161
Rental of meters	75,224,336	73,176,661
	14,468,029,750	14,113,629,822

# **17. COST OF SALES**

	2015	2014
	Rs	Rs
Generation Costs	3,746,808,006	5,092,558,660
Purchase of electricity	4,672,145,158	4,947,085,020
Depreciation of generation assets	785,114,123	768,895,798
	9,204,067,287	10,808,539,478

# **18. OTHER INCOME**

	2015	2014
	Rs	Rs
Rechargeable services	33,931,161	31,005,224
Late Payment Surcharge	103,339,446	107,372,223
MBC TV Licence fee	6,278,849	6,330,151
Grant From MPU-Land Fill Gas to Energy	20,000,000	20,000,000
Penalties from IPP	5,574,027	6,906,186
Receipts-MID FUND	61,801,345	61,797,580
Connection/Disconnection Fees	26,722,950	27,011,400
Sale of Materials	11,202,388	7,283,491
Other sundry receipts	29,459,014	39,822,013
	298,309,179	307,528,268

# **19. DISTRIBUTION COSTS**

	2015	2014
	Rs	Rs
Distribution Operating Costs	59,311,901	135,944,441
Salaries and related Expenses	828,795,564	819,954,453
Provision for Back Pay	5,323,366	98,631,650
Provision for unpaid passage benefits	20,340,658	17,178,337
Provision for unpaid vacation/credit leave	14,759,503	14,338,777
Amortisation of grants and other deferred assets	(369,372,878)	(486,345,807)
Legal & Professional Fees	2,202,362	3,471,363
Depreciation on Distribution Assets	444,244,505	438,964,534
	1,005,604,982	1,042,137,748

# **20. ADMINISTRATIVE EXPENSES**

	2015	2014
	Rs	Rs
Salaries and related Expenses	531,793,623	613,019,849
General Expenses	331,649,638	237,581,716
Provision for Back Pay	973,720	26,557,692
Provision for unpaid passage benefits	11,470,173	4,248,717
Provision for unpaid vacation/credit leave	9,497,243	1,619,289
Legal & Professional Fees	19,514,535	13,932,505
Impairment of Debtors	40,164,836	32,442,106
Auditors fees	600,000	600,000
Bank Charges	2,663,657	2,151,285
Directors fees	2,410,332	3,955,467
Pension obligation (service cost)	594,553,000	153,980,000
Depreciation of Buildings and Other Assets	114,698,935	88,795,336
Total	1,659,989,692	1,178,883,963

#### **21. INVESTMENT INCOME**

	2015	2014
	Rs	Rs
Interest on Bank deposits and other bank balances	51,883,392	14,146,558
	51,883,392	14,146,558

# 22. EXCHANGE GAINS / (LOSS)

	2015	2014
	Rs	Rs
Realised Gains/(Loss)	2,568,557	(37,052,365)
Unrealised Gains/(Loss)	18,295,372	395,065,552
	20,863,929	358,013,187

### 23. FINANCE COSTS

	2015	2014
	Rs	Rs
Interest on Loan	181,693,760	224,520,508
Interest on Overdraft	2,701,339	3,223,113
	184,395,098	227,743,620

# 24. RELATED PARTY TRANSACTIONS

(i) The immediate and ultimate controlling party of the Board is the Government of Mauritius.

The Board also purchased fuel oil amounting to Rs 2.83 billion from State Trading Corporation which is fully owned by the Government.

Loans due to Government is disclosed in the schedule of loans in note 11. Interest paid on these loans for 2015 amounted to Rs 48.1 million.

(ii) Loans from the CEB Staff Pension Fund and CEB Manual Workers Pension Fund totalled Mur 867.9 M and 447.3 M respectively and are unsecured. Loan agreements have been signed between both parties in September 2015 and the loans will be repaid in 20 equal bi-annual instalments starting as from January 2016.

Sums owed to both pension funds, representing additional contribution towards deficits in both Funds have now been formalized and will be repaid in 20 equal bi-annual instalments starting as from January 2016. These amount to Mur 513.7 M and 508 M respectively. These loans are at zero interest rate and refundable over a 10 year tenor.

# **25. COMMITMENTS**

In the course of its generation and supply activities, the Board has entered into long-term contracts and "take or pay" contracts with independent power producers, in which it undertakes to purchase electricity for periods of up to 20 years. The contracts have different ending dates and the two major contracts with greatest installed capacity will end in 2020 and 2027.

The minimum energy and capacity payment for the next accounting period ending June 2017 is estimated at Rs 8,131.1 M.

The outstanding balance in respect of irrevocable letters of credit amounted to USD 56,547 as at 31<sup>st</sup> December 2015.

#### **26. PROVISIONS**

	Passage Benefits	Vacation Leave	Sick Leave	Back Pay Appanna	Total
	Rs	Rs	Rs	Rs	Rs
Carrying Amount as at 01 January	102,485,533	201,324,459	48,535,431	137,970,106	490,315,529
Additional Provision	42,456,940	44,763,150	28,357,447	-	115,577,537
Amount utilised during the year	34,027,040	24,228,377	17,294,189	137,970,106	213,519,711
Carrying amount as at 31 December	110,915,434	221,859,232	59,598,689	-	392,373,354
Within 1 year	(36,825,918)	(26,699,633)	(21,236,259)		(84,761,810)

#### 27. FINANCIAL INSTRUMENTS AND FINANCIAL RISK FACTORS

#### Significant Accounting Policies

Details of the significant accounting policies and methods adopted, including the criteria for recognition, the basis of measurement and the basis on which income and expenses are recognised, in respect of each class of financial asset, financial liability and equity are disclosed in note 2 to the financial statements.

#### **Categories and Classification of Financial Instruments**

The accounting classification of each category of financial instruments and their carrying amounts are set out below:



The carrying amounts of the financial instruments are either the fair value or approximate fair value.

The fair values of financial assets and financial liabilities are determined as follows:

(a) The fair value of financial assets and financial liabilities with standard terms and conditions and traded on active liquid markets is determined with reference to quoted market prices.

(b) The fair value of other financial assets and financial liabilities is determined in accordance with generally acceptable pricing models based on discounted cash flow analysis using prices from observable current market transactions and dealer quotes for similar instruments.

#### Financial Risk Management Objectives

A Treasury Section has been set up within the Finance Department since 2006 with a view to ascertaining that the CEB is adequately equipped in mitigating risks that are inherent in an ever-changing environment. The CEB's Treasury co-ordinates access to domestic and international financial markets, monitors and manages the financial risks relating to the operations of CEB through internal risk reports which analyse exposures by degree and magnitude of risks. It focuses on the mitigation of financial risk through the use of financial instruments while continuously managing the cash flow efficiently.

It is the Chief Financial Officer (CFO) who oversees the management of business risks with the assistance of the Treasury Section. Market risk (including currency risk and interest rate risk), credit risk and liquidity risk are monitored repeatedly to ensure that these risks are adequately dealt with in accordance with the appropriate policies and procedures set up by the CEB.

The whole process falls under the scrutiny of the Audit, Risk and Good Governance Committee, a subcommittee of the Board.

#### Market Risk

The CEB is primarily exposed to the financial risks arising from natural business exposures such as changes in foreign currency exchange rates and interest rate risks.

Exposure to interest rate and foreign currency risk is managed through market intelligence, currency purchases on both spot and forward basis and sensitivity analysis.

Currently, the CEB does not utilise any financial or derivative instruments for hedging its financial risks.

#### Foreign Currency Risk

A large portion of the CEB's operational costs such as the costs of spares, equipment and fuel oil supplies and finance costs is in foreign currency and the major currencies in which these costs are incurred are Euros and the US dollars.

The CEB is therefore exposed to the risk that the exchange rate of the Mauritian rupee relative to these currencies may change in a manner which has a material effect on the reported values of the assets and liabilities.

The carrying amounts of CEB's foreign currency denominated monetary assets and monetary liabilities at reporting date are as follows:

	LIABILITIES		ASSETS		
	2015	2014	2015	2014	
	Rs'000	Rs'000	Rs'000	Rs'000	
EURO	3,119,222	3,477,352	158,501	142,850	
USD	133,125	138,052	871,916	96,720	
TOTAL	3,252,347	3,615,405	1,030,417	239,570	

There were no material monetary assets and liabilities in other foreign currencies.

#### Foreign Currency Sensitivity Analysis

The CEB is mainly exposed to fluctuations in the exchange rates of the Euro and the USD. The table below, details the sensitivity to a 5% increase and decrease in the MUR against the EURO and the USD. The sensitivity rate of 5% has been chosen because it represents management's assessment of the reasonably possible variation in foreign exchange rates.

The sensitivity analysis includes only outstanding foreign currency denominated monetary items and adjusts their translation at the period end for a 5% change in foreign currency rates.

	Foreign Exchange Risk (5%)				
	CARRYING AMOUNT	PROFIT			
		5%	-5%		
Financial Assets	Rs'000	Rs'000	Rs'000		
EURO	158,501	7,925	(7,925)		
USD	871,916	43,596	(43,596)		
Financial Liabilities					
EURO	3,119,222	155,961	(155,961)		
USD	133,125	6,656	(6,656)		
TOTAL Increase / (Decrease)		214,138	(214,138)		

#### Interest Rate Risk

The CEB is exposed to interest rate risk, as it has to borrow funds at both fixed and floating interest rates.

The currency profile of CEB's borrowings and their effective interest rates are summarised below:

	Borrowings 2015			Bo	rrowing	s 2014
Currency	Rs'000	%	Interest Rates (% p.a)	Rs'000	%	Interest Rates (% p.a)
MUR	2,599,875	44.43	6.29	2,575,053	41.6	0-7.15
USD-Fixed Interest Rate	133,125	2.27	3	138,052	2.2	3
EURO-Fixed Interest Rate	-	0	0	52,993	0.9	2-3
EURO-Floating Interest Rate	3,199,222	53.30	Euribor+0.2-1.5	3,424,359	55.3	Euribor+0.2-1.5
	5,852,223	100		6,190,458	100	

#### Interest Rate Sensitivity Analysis

The CEB is mainly exposed to fluctuations in the movement of interest rates in MUR and EURO. The table below, details the sensitivity to a 1% increase and decrease in the rate of interest of MUR borrowings and a +50bp/-50bp in the interest rate of Euro borrowings.

These sensitivity rates have been chosen because it represents management's best estimates of the possible change in the respective interest rates and the analysis includes only some outstanding financial liabilities as at 31 December 2015.

	Interest Rate Risk				
	Carrying Amount	Profit			
		1%	-1%	+50/bp	-50/bp
	Rs'000	Rs'000	Rs'000	Rs'000	Rs'000
Borrowings - MUR - EURO (Floating Interest Rate)	2,599,875 3,119,222	25,999	(25,999)	15,596	(15,596)
TOTAL Increase / (Decrease)		25,999	(25,999)	15,596	(15,596)

#### Credit Risk

Credit risk is the risk that a customer or counter party to a financial instrument will fail to perform or fail to pay amounts due causing financial loss to CEB. The CEB does not have a significant concentration of credit risks; its credit risk is primarily attributed to trade receivables.

The CEB has a credit policy that is designed to ensure that consistent processes are in place throughout the organisation to measure and control credit risk. CEB attempts to mitigate credit risk by charging a 5% surcharge on invoices that are not settled within the due dates. All CEB customers provide a cash deposit, based on the load connected and tariff, as security deposit and the electricity supply is disconnected in case of non-payment. In normal circumstances, the CEB has recourse to disconnection of supply to ensure prompt settlement of overdue electricity bills. The supply of electricity to Commercial and Industrial customers is automatically identified for disconnection if any amount remains outstanding two months after consumption and the corresponding period for Domestic Customers is three months after consumption. If the debt remains unsettled 15 days after physical disconnection of supply the electricity account is closed, the under-mentioned exercise is followed in order to recover outstanding debts.

(a) One month after closure of accounts, reminders are sent to those debtors.(b) After an additional period of one month, unsettled cases are referred to a Solicitor for judicial recovery.

The CEB does not typically renegotiate the terms of trade receivables; however, if a renegotiation does take, the outstanding balance is included in the analysis based on the original payments terms. There were no significant renegotiated balances outstanding at 31 December 2015 or 31 December 2014.

With respect to the trade receivables that are neither impaired nor past due, there are no indications as of the reporting date that the debtors will not meet their payment obligations.

As at 31 December 2015,	the maximum	credit exposure was	s Rs 2,521.8 M	, as analyzed below:

Trade Receivables as at 31 December	Note	2015	2014
		Rs M	Rs M
Debtors for invoicing made in Jan & Feb 2016	(b)	1450.7	1407
Within 30 days		525.4	528.7
31-60 days		155.7	153.4
61-90 days		59.3	54.8
More than 90 days	(c)	330.7	301.2
Total		2521.8	2445.1

#### Note:

(a) Sales for December 2015 are invoiced and delivered to customers in 2016.

(b) The amounts include cases of under-billing which have not yet been paid.

# Liquidity Risk

Liquidity risk refers to the possibility of default by the CEB because of unavailability of funds to meet both its operational and capital requirements.

In order to manage this risk, short-term, medium-term and long-term cash flow forecasts are regularly prepared and this ensures that proactive action is taken to ensure that funds are always available to meet the organisation's obligations. This is achieved through the efficient maintenance and management of various credit line facilities.

At December 31, 2015	At call	Less than 1 month	1-3 months	3 months to 1 year	1-5 years	Over 5 years	Total
Financial liabilities	Rs M	Rs M	Rs M	Rs M	Rs M	Rs M	Rs M
Interest Bearing Borrowings	-	127.64	15.01	508.77	2,320.02	1,796.14	4,767.58
Long Term Payables	-	52.13	3.15	196.48	992.90	250.98	1,495.64
Trade and Other Payables	-	998.30	-	349.63	-	1,153.08	2,501.01
Bank Overdrafts	2.79	-	-	-	-	-	2.79
	2.79	1,178.08	18.16	1,054.88	3,312.92	3,200.20	8,767.03
At December 31, 2014							
Interest Bearing Borrowings	-	157.75	29.91	664.79	2,977.64	2,296.46	6,126.54
Long Term Payables	-	1.07	3.20	8.52	51.13	-	63.92
Trade and Other Payables	-	1,621.00	-	639.75	-	1,083.85	3,344.60
Bank Overdrafts	156.91	-	-	-	-	-	156.91
	156.91	1,779.82	33.10	1,313.06	3,028.77	3,380.30	9,691.98

#### **Maturities of Financial Liabilities**

# **28. CAPITAL COMMITMENTS**

	2015	2014
Capital Expenditure committed in relation to the acquisition	Rs M	Rs M
of property, plant and equipment	1,107	2,359

At 31 December 2015, the CEB had capital commitments of Rs 1,107 million in respect of acquisition of property, plant and equipment. The CEB's management is confident that future revenue and funding will be sufficient to cover this commitment.

# **29. CONTINGENT LIABILITY**

Following the ruling of the Privy Council in the case of Compact Fluorescent Lamps (CFL), the Board was willing to pay Rs 23M to the bank that issued the letter of credit as guarantor, provided that compliant documents were submitted and to which, the bank replied that if no payment was made by 15 July 2015, it would initiate legal action against CEB.

The concerned contractor for the supply of the CFL was claiming damages to the tune of Rs 480 million in respect of alleged damages.

No provision has been made for this in the financial statements as the management of CEB do not consider that there is any probable loss.

# **SCHEDULE A**

# INCOME FROM SALES OF ELECTRICITY (MAURITIUS) YEAR 2015

(kWh)         (Rs)         PER UNIT (Rs)           DOMESTIC	TARIFF	UNIT SOLD	REVENUE	AVERAGE SELLING PRICE
110         206,203,364         1,107,614,753         5.371           110A         4,061,105         13,633,215         3.388           120         444,762,461         2,529,298,001         5.687           140         157,636,141         1,057,127,021         6.706           SUB-TOTAL         812,663,071         4,707,677,989         5.793           COMMERCIAL		(kWh)	(Rs)	PER UNIT (Rs)
110         206,203,364         1,107,614,753         5.371           110A         4,061,105         13,633,215         3.388           120         444,762,461         2,529,298,001         5.687           140         157,636,141         1,057,127,021         6.706           SUB-TOTAL         812,663,071         4,707,677,989         5.793           COMMERCIAL	DOMESTIC			
110A         4,061,105         13,638,215         3.358           120         444,762,461         2,529,298,001         5,687           140         157,636,141         1,057,127,021         6,706           SUB-TOTAL         812,663,071         4,707,677,989         5,793           COMMERCIAL         10         1357,636,145         1,854,859,275         10.260           215         180,783,145         1,854,859,275         10.260           217         376,627,048         2,636,574,604         6.964           225         320,313,485         2,045,135,303         6,385           245         789,630         4,644,237         6,084           250         25,142,704         100,156,286         3.984           SUB-TOTAL         905,656,012         6,641,529,704         7.333           INDUSTRIAL         905,656,012         6,641,529,704         7.333           315         28,031,859         156,294,476         5.576           313         225,857,311         975,721,918         3.814           317         70,514,124         236,952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,093,471 <td></td> <td>206,203,364</td> <td>1,107,614,753</td> <td>5.371</td>		206,203,364	1,107,614,753	5.371
120         444,762,461         2,529,295,001         5,687           140         157,636,141         1,057,127,021         6,706           SUB-TOTAL         812,663,071         4,707,677,989         5,793           COMMERCIAL	110A			3.358
SUB-TOTAL         812,663,071         4,707,677,989         5.793           COMMERCIAL	120	444,762,461		5.687
COMMERCIAL         Commercial           215         180,783,145         1,854,859,275         10.260           217         378,627,048         2,636,574,604         6.964           225         320,313,485         2,045,135,303         6.385           245         789,630         4,804,237         6.084           250         25,142,704         100,156,286         3.984           SUB-TOTAL         905,656,012         6,641,529,704         7.333           INDUSTRIAL         905,656,012         6,641,529,704         7.333           315         28,031,859         156,294,476         5.576           313         255,857,311         975,721,918         3.814           317         70,151,124         236,952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,099,444         434,519,033         3.588           325         150,954,761         418,538,602         2.777           330         14,225,370         42,747,165         3.005           340         9,377,466         38,171,359         4.128           350         40,584,393         158,721,411         3.911           421 <td>140</td> <td>157,636,141</td> <td>1,057,127,021</td> <td>6.706</td>	140	157,636,141	1,057,127,021	6.706
215         180,783,145         1,854,859,275         10.260           217         378,627,048         2,636,574,604         6.964           225         320,31,485         2,045,135,303         6.385           245         789,630         4,804,237         6.084           250         25,142,704         100,156,286         3.984           SUB-TOTAL         905,656,012         6,641,529,704         7.333           INDUSTRIAL         905,656,012         6,641,529,704         7.333           315         28,031,859         156,294,476         5.576           313         255,857,311         975,721,918         3.814           317         70,514,124         23,6952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,099,444         434,519,033         3.588           325         150,954,761         418,538,602         2.773           330         14,225,370         42,747,165         3.005           340         9,377,466         38,712,359         4.128           350         40,584,393         158,721,411         3.911           421         3,103,941         16,560,885         5.335 </td <td>SUB-TOTAL</td> <td>812,663,071</td> <td>4,707,677,989</td> <td>5.793</td>	SUB-TOTAL	812,663,071	4,707,677,989	5.793
217         378,627,048         2,636,574,604         6.964           225         320,313,485         2,045,135,303         6.385           245         789,630         4,804,237         6.084           250         25,142,704         100,156,286         3.984           SUB-TOTAL         905,656,012         6,641,529,704         7.333           INDUSTRIAL         905,656,012         6,641,529,704         7.333           315         28,031,859         156,294,476         5.576           313         255,857,311         975,721,918         3.814           317         70,514,124         236,952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,099,444         434,519,033         3.588           325         150,954,761         418,538,602         2.773           330         14,225,370         42,747,165         3.005           340         9,377,466         38,712,359         4.128           350         40,584,393         158,721,411         3.911           421         3,103,941         16,560,885         5.335           422         -         -         -	COMMERCIAL			
225         320,313,485         2,045,135,303         6.385           245         789,630         4,804,237         6.084           250         25,142,704         100,156,286         3.984           SUB-TOTAL         905,656,012         6,641,529,704         7.333           INDUSTRIAL         7.333         7.333           315         28,031,859         156,294,476         5.576           313         255,857,311         975,721,918         3.814           317         70,514,124         236,952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,099,444         434,519,033         3.588           325         150,954,761         418,538,602         2.773           330         14,225,370         42,747,165         3.005           340         9,377,466         38,712,359         4.128           350         40,584,393         158,721,411         3.911           421         3,103,941         16,560,885         5.335           422         -         -         -           SUB-TOTAL         694,827,046         2,482,475,360         3.573           STREET LIGHTING	215	180,783,145	1,854,859,275	10.260
245         789,630         4,804,237         6.084           250         25,142,704         100,156,286         3.984           SUB-TOTAL         905,656,012         6,641,529,704         7.333           INDUSTRIAL         26,031,859         156,294,476         5.576           313         255,857,311         975,721,918         3.814           317         70,514,124         236,952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,099,444         434,519,033         3.588           325         150,954,761         418,538,602         2.773           330         14,225,370         42,747,165         3.005           340         9,377,466         38,712,359         4.128           350         40,584,393         158,721,411         3.911           421         3,103,941         16,560,885         5.335           422         -         -         -           SUB-TOTAL         694,827,046         2,482,475,360         3.573           INDUSTRIAL         (IRRIGATION)         -         -           515         21,801,234         60,940,491         2.795           <	217	378,627,048	2,636,574,604	6.964
250         25,142,704         100,156,286         3.984           SUB-TOTAL         905,656,012         6,641,529,704         7.333           INDUSTRIAL         315         28,031,859         156,294,476         5.576           313         255,857,311         975,721,918         3.814           317         70,514,124         226,952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,099,444         434,519,033         3.588           325         150,954,761         418,538,602         2.773           330         14,225,370         42,747,165         3.005           340         9,377,466         38,712,359         4.128           350         40,584,393         158,721,411         3.911           421         3,103,941         16,560,885         5.3335           422         -         -         -           SUB-TOTAL         694,827,046         2,482,475,360         3.573           INDUSTRIAL (IRRIGATION)         21,801,234         60,940,491         2.795           STREET LIGHTING         2         -         -         -           510         28,290,481         221,633,	225	320,313,485	2,045,135,303	6.385
SUB-TOTAL         905,656,012         6,641,529,704         7.333           INDUSTRIAL         28,031,859         156,294,476         5.576           313         255,857,311         975,721,918         3.814           317         70,514,124         236,952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,099,444         434,519,033         3.588           325         150,954,761         418,538,602         2.773           330         14,225,370         42,747,165         3.005           340         9,377,466         38,712,359         4.128           350         40,584,393         158,721,411         3.911           421         3,103,941         16,560,885         5.335           422         -         -         -           SUB-TOTAL         694,827,046         2,482,475,360         3.573           STREET LIGHTING	245	789,630	4,804,237	6.084
INDUSTRIAL         Image: Constraint of the second sec				
315         28,031,859         156,294,476         5.576           313         255,857,311         975,721,918         3.814           317         70,514,124         236,952,896         3.360           320         1,078,377         3,706,615         3.437           323         121,099,444         434,519,033         3.588           325         150,954,761         418,538,602         2.773           330         14,225,370         42,747,165         3.005           340         9,377,466         38,712,359         4.128           350         40,584,393         158,721,411         3.911           421         3,103,941         16,560,885         5.335           422         -         -         -           SUB-TOTAL         694,827,046         2,482,475,360         3.573           INDUSTRIAL (IRRIGATION)           515         21,801,234         60,940,491         2.795           STREET LIGHTING           510         28,290,481         221,633,747         7.834           510         28,290,481         221,633,747         7.834           STREET LIGHTING         3,375,917         12.506	SUB-TOTAL	905,656,012	6,641,529,704	7.333
313       255,857,311       975,721,918       3.814         317       70,514,124       236,952,896       3.360         320       1,078,377       3,706,615       3.437         323       121,099,444       434,519,033       3.588         325       150,954,761       418,538,602       2.773         330       14,225,370       42,747,165       3.005         340       9,377,466       38,712,359       4.128         350       40,584,393       158,721,411       3.911         421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)       -       -       -         515       21,801,234       60,940,491       2.795         STREET LIGHTING       -       -       -         510       28,290,481       221,633,747       7.834         TEMP. SUPPLY       -       -       -         610       269,935       3,375,917       12.506         SPECIAL AND NON-CLASSIFIED       9,227,047       67,596,542       7.326	INDUSTRIAL			
317       70,514,124       236,952,896       3.360         320       1,078,377       3,706,615       3.437         323       121,099,444       434,519,033       3.588         325       150,954,761       418,538,602       2.773         330       14,225,370       42,747,165       3.005         340       9,377,466       38,712,359       4.128         350       40,584,393       158,721,411       3.911         421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)       694,827,046       2,482,475,360       3.573         STREET LIGHTING       21,801,234       60,940,491       2.795         STREET LIGHTING       269,935       3,375,917       7.834         TEMP. SUPPLY       610       269,935       3,375,917       12.506         SPECIAL AND NON-CLASSIFIED       9,227,047       67,596,542       7.326	315	28,031,859	156,294,476	5.576
320       1,078,377       3,706,615       3.437         323       121,099,444       434,519,033       3.588         325       150,954,761       418,538,602       2.773         330       14,225,370       42,747,165       3.005         340       9,377,466       38,712,359       4.128         350       40,584,393       158,721,411       3.911         421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)         515       21,801,234       60,940,491       2.795         STREET LIGHTING         510       28,290,481       221,633,747       7.834         Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2">Colspan="2"Colspan="2">Advan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2">Advan="2"Colspa="2"Colspan="2"Colspa="2"Colspan="2"Colspan="2"	313	255,857,311	975,721,918	3.814
323       121,099,444       434,519,033       3.588         325       150,954,761       418,538,602       2.773         330       14,225,370       42,747,165       3.005         340       9,377,466       38,712,359       4.128         350       40,584,393       158,721,411       3.911         421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)       694,827,046       2,482,475,360       3.573         STREET LIGHTING       -       -       -         510       28,290,481       221,633,747       7.834         TEMP. SUPPLY       -       -       -         610       269,935       3,375,917       12.506         SPECIAL AND NON-CLASSIFIED       9,227,047       67,596,542       7.326	317	70,514,124	236,952,896	3.360
325       150,954,761       418,538,602       2.773         330       14,225,370       42,747,165       3.005         340       9,377,466       38,712,359       4.128         350       40,584,393       158,721,411       3.911         421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)       -       -       -         STREET LIGHTING       -       -       -         510       28,290,481       221,633,747       7.834         TEMP, SUPPLY       -       -       -         610       269,935       3,375,917       12.506         SPECIAL AND NON-CLASSIFIED       9,227,047       67,596,542       7.326	320	1,078,377	3,706,615	3.437
330       14,225,370       42,747,165       3.005         340       9,377,466       38,712,359       4.128         350       40,584,393       158,721,411       3.911         421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)       694,827,046       2,482,475,360       3.573         STREET LIGHTING       -       -       -         STREET LIGHTING       -       -       -         510       28,290,481       221,633,747       7.834         TEMP. SUPPLY       -       -       -         610       269,935       3,375,917       12.506         SPECIAL AND NON-CLASSIFIED       9,227,047       67,596,542       7.326	323	121,099,444	434,519,033	3.588
340       9,377,466       38,712,359       4.128         350       40,584,393       158,721,411       3.911         421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)       694,827,046       2,482,475,360       3.573         STREET LIGHTING       -       -       -         STREET LIGHTING       -       -       -         610       28,290,481       221,633,747       7.834         SPECIAL AND NON-CLASSIFIED       9,227,047       67,596,542       7.326	325		418,538,602	
350       40,584,393       158,721,411       3.911         421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)       694,827,046       2,482,475,360       3.573         STREET LIGHTING       -       -       -         STREET LIGHTING       21,801,234       60,940,491       2.795         STREET LIGHTING       -       -       -         610       28,290,481       221,633,747       7.834         TEMP. SUPPLY       -       -       -         610       269,935       3,375,917       12.506         SPECIAL AND NON-CLASSIFIED       9,227,047       67,596,542       7.326				
421       3,103,941       16,560,885       5.335         422       -       -       -         SUB-TOTAL       694,827,046       2,482,475,360       3.573         INDUSTRIAL (IRRIGATION)       -       -       -         S15       21,801,234       60,940,491       2.795         S16       28,290,481       221,633,747       7.834         TEMP. SUPPLY       -       -       -         610       269,935       3,375,917       12.506         SPECIAL AND NON-CLASSIFIED       9,227,047       67,596,542       7.326				
422         -		1		
SUB-TOTAL         694,827,046         2,482,475,360         3.573           INDUSTRIAL (IRRIGATION)		3,103,941	16,560,885	5.335
INDUSTRIAL (IRRIGATION)INDUSTRIAL (IRRIGATION)INDUSTRIAL (IRRIGATION)51521,801,23460,940,4912.795STREET LIGHTING 51028,290,481221,633,7477.83451028,290,481221,633,7477.834TEMP. SUPPLY 610269,9353,375,91712.506SPECIAL AND NON-CLASSIFIED9,227,04767,596,5427.326		-	-	-
(IRRIGATION)       Image: Marking and	SUB-TOTAL	694,827,046	2,482,475,360	3.573
515       21,801,234       60,940,491       2.795         STREET LIGHTING       28,290,481       221,633,747       7.834         510       28,290,481       221,633,747       7.834         TEMP. SUPPLY       269,935       3,375,917       12.506         SPECIAL AND       9,227,047       67,596,542       7.326	INDUSTRIAL			
STREET LIGHTING       28,290,481       221,633,747       7.834         510       28,290,481       221,633,747       7.834         TEMP. SUPPLY       269,935       3,375,917       12.506         SPECIAL AND       9,227,047       67,596,542       7.326				
510       28,290,481       221,633,747       7.834         TEMP. SUPPLY       And	515	21,801,234	60,940,491	2.795
TEMP. SUPPLY     269,935     3,375,917     12.506       SPECIAL AND     9,227,047     67,596,542     7.326	STREET LIGHTING			
610         269,935         3,375,917         12.506           SPECIAL AND NON-CLASSIFIED         9,227,047         67,596,542         7.326	510	28,290,481	221,633,747	7.834
SPECIAL AND NON-CLASSIFIED 9,227,047 67,596,542 7.326	TEMP. SUPPLY			
NON-CLASSIFIED 9,227,047 67,596,542 7.326	610	269,935	3,375,917	12.506
		0 227 047	67 596 542	7 326
TOTAL 2,472,734,826 14,185,229,750 5.737		9,221,047	01,550,542	1.520
	TOTAL	2,472,734,826	14,185,229,750	5.737

# **SCHEDULE B**

# ANALYSIS OF REVENUE EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER 2015

GENERATION COSTS & PURCHASE OF ELECTRICITY	2015	(Rs)	2014	(Rs)
Generation Expenses (Hydro)	66,472,918		67,607,846	
Direct Overheads ( Hydro)	144,561,496		147,029,672	
Generation Expenses (Thermal)	3,112,210,335		4,446,529,377	
Direct Overheads (Thermal)	390,450,863		397,117,241	
Purchase of Electricity - Coal	3,396,703,039		3,791,276,485	
Purchase of Electricity - Bagasse	1,030,992,693		926,312,949	
Purchase of Electricity - Landfill Gas	99,914,365		105,138,345	
Purchase of Electricity - Solar PV	144,283,935		123,766,598	
Purchase of Electricity - Wind Farm	251,127		590,642	
Purchase of electricity - SSDG	33,112,394		34,274,525	
TOTAL GENERATION COSTS		8,418,953,164		10,039,643,680
DISTRIBUTION COSTS				
Distribution Expenses	78,194,025		265,112,026	
Contractors Fees	170,138,176		107,076,101	
Salaries and Related Expenses	682,401,154		717,330,894	
TOTAL DISTRIBUTION COSTS		930,733,355		1,089,519,021
ADMINISTRATIVE EXPENSES				
Administrative Expenses	852,380,003		717,802,395	
Pension Obligations	594,553,000		269,606,000	
Audit Fees	600,000		600,000	
Directors Fees	2,410,332		3,955,467	
Bank Charges	2,663,657		2,151,285	
Legal & Professional Expenses	19,514,535		13,932,505	
Bad Debts & Impairment of Trade Debtors	40,164,836		32,442,106	
Provision for Sick Leave	11,063,258		17,173,171	
Provision for Back Pay	973,720		26,557,692	
Provision for Passage Benefits	11,470,173		4,248,717	
Provision for Vacation Leave	9,497,243		1,619,289	
TOTAL ADMINISTRATIVE EXPENSES		1,545,290,757		1,090,088,628
FINANCIAL				
Net Interest on Loans	181,693,760		224,520,508	
Net Interest on Overdraft	2,701,339		3,223,113	
		184,395,098		227,743,620
DEPRECIATION OF ASSETS				
Generation Assets	785,114,123		768,895,798	
Distribution Assets	444,244,505		438,964,534	
Building and Other Assets	114,698,935		88,795,336	
		1,344,057,562		1,296,655,668
TOTAL REVENUE EXPENDITURE AND				
PROVISIONS		12,423,429,936		13,743,650,617

# SCHEDULE C

# DEPRECIATION OF ASSETS FOR THE YEAR ENDED 31 DECEMBER 2015

	AMOUNT (Rs)	AMOUNT (Rs)
GENERATION ASSETS		
Thermal Power Station	619,848,079	
Hydro Power Station	162,393,581	
Wind Park	2,872,462	
		785,114,123
TRANSMISSION ASSETS		
Transmission Network	31,975,588	
Major Substation	90,382,318	
System Control	16,095,295	
		138,453,202
DISTRIBUTION ASSETS		
Distibution Networks	305,791,303	305,791,303
LAND , BUILDINGS AND OTHER ASSETS		
Buildings	9,913,317	
Furniture and Office Equipment	6,124,529	
Motor Vehicles	23,916,603	
Computer Equipment	62,269,062	
Tools & Instruments	12,475,425	
		114,698,935
TOTAL DEPRECIATION FOR THE YEAR		1,344,057,562

# SCHEDULE D

# SELECTED STATISTICAL DATA FOR THE YEAR ENDED 31 DECEMBER 2015

	20:	15	20:	14
	% OF REVENUE	Rs	% OF REVENUE	Rs
During the year ended 31 December REVENUE GENERATED FROM:				
1 . Sales of electricity	94.77%	14,392,805,413	94.73%	14,040,453,161
2 . Meter rent	0.50%	75,224,337	0.49%	73,176,661
3. Miscellaneous income	2.17%	330,192,571	1.36%	201,199,826
4 . Amortisation of grants	2.56%	389,372,878	3.42%	506,345,807
5 . Making a total turnover of	100.00%	15,187,595,198	100.00%	14,821,175,455
<ol> <li>Expenditure on generation, transmission and distribution, and administration aggregated</li> </ol>	71.74%	10,894,977,276	82.44%	12,219,300,269
7 - Balance before depreciation and interest	28.26%	4,292,617,922	17.56%	2,601,924,131
8 . Depreciation of fixed assets	8.85%	1,344,057,562	8.75%	1,296,655,672
9. Balance after depreciation	19.41%	2,948,560,360	8.81%	1,305,268,459
10 . Interest on loans & Gain / Loss on Exchange	1.08%	163,531,169	-0.88%	(130,269,567)
11 . Actuarial Loss on Defined Benefits Plans	6.70%	1,018,317,000	-	-
12 . Net Surplus for the year	11.63%	1,766,712,191	9.69%	1,435,538,026
OTHER DATA				
13 . Sales (GWh)		2,505.43		2,452.20
14 . Maximum effective capacity at year- end (MW)		685.80		680.64
15 . Peak demand (MW)		459.85		446.20
16 . Average selling price (Rs/kWh)		5.74		5.73
17 . Net loan indebtedness/ Total capitalization		0.28		0.31
18. Coverage of interest (times)		16		7.30
19 . Return (PBIT) on average net fixed assets in operation (%)		9.16%		7.81%
		1.17		1.37
20 . Debt service coverage (times)		1.17		1.57

# CENTRAL ELECTRICITY BOARD ANNUAL REPORT 2015

FINANCIAL YEAR ENDED 31 DECEMBER		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1. Units exported during the year (Mtius)	GWh	2,051.00	2,160.00	2,240.80	2,237.53	2,337.99	2,391.60	2,454.80	2,537.50	2,602.20	2,649.45
<ol><li>Units sold during the year (Mtius)</li></ol>	GWh	1,879.00	1,975.00	2,054.00	2,069.23	2,173.91	2,228.23	2,266.77	2,354.93	2,421.0	2,472.73
3. Losses (Mtius)	GWh	172.00	185.00	186.80	168.30	164.08	163.37	188.03	182.57	181.2	176.72
4. Number of consumers at 31 <sup>st</sup> December	Thousand	376.60	385.30	394.12	400.45	408.87	415.53	425.22	435.36	443.64	452.61
5. INCOME / REVENUE Sales of electricity	Rs Millions	6.769.94	7.513.86	10.063.47	10.664.12	11 544 93	12.708.63	13.230.10	13.620.32	14.040.45	14.392.81
Rental of meters	Rs Millions	28.33	29.60	60.73	62.70	64.46	66.62	68.93	71.01	73.18	75.22
Miscellaneous	Rs Millions	271.53	302.63	429.57	430.60	421.75	473.63	581.04	665.10	707.55	719.57
TOTAL		7,069.80	7,846.09	10,553.77	11,157.42	12,031.14	13,248.88	13,880.07	14,356.43	14,821.18	15,187.60
6. EXPENDITURE											
Generation costs	<b>Rs Millions</b>	2,777.49	2,695.38	2,240.08	3,170.70	3,912.06	4,868.40	5,525.69	5276.31	5,092.56	3,713.70
Purchase of electricity	Rs Millions	2,636.44	3,397.29	2,054.00	4,528.39	4,779.68	5,101.05	5,159.11	4780.54	4,947.09	4,705.26
Distribution costs	Rs Millions	595.20	581.88	186.08	542.22	667.13	644.13	668.61	943.47	1,089.52	930.73
Depreciation of Generation, Transmission and distribution assets	Rs Millions	849.71	773.64	926.94	937.42	914.18	705.75	1,165.92	1,270.98	1,296.66	1,344.06
TOTAL		6,858.84	7,448.19	5,407.10	9,178.74	10,273.06	11,319.33	12,519.32	12,271.29	12,425.82	10,693.74
7. GROSS OPERATING SURPLUS	Rs Millions	210.95	397.90	862.40	1,978.69	1,758.07	1,929.55	1,360.75	2,085.14	2,395.36	4,493.85
8.(a) Administration, Establishment & Other Costs incl_Additional democration in research of revaluation	Re Milline	375 08	384 54	483 43	849.99	844 71	51 90	791 73	931 89	1 090 09	1 545 29
(b) (Gain)/Loss on Exchange	Re Millions	582.30	(283.01)	313.64	(266.08)	(251.89)	(346.70)	92.82	(40.01)	(358.01)	(20.86)
	Rs Millions	410.43	453.18	446.15	360.24	292.40	294.80	379.39	218.19	227.74	184.40
<ul><li>(d) Actuiarial Loss on Defined Benefits Plans</li><li>9. RETAINED PROFIT (LOSS)</li></ul>		(1,106.85)	(156.80)	(380.82)	1,034.54	872.86	1,929.55	96.81	975.08	1435.54	1,018.32 1,766.71
10. NET ASSETS Eivod Accete loce Democriation	De Millione	17 986 99	15 576 03	15 159 67	15 5A1 96	16 610 72	91 000 10	01 847 20	21 747 12	21 164 88	21 445 64
Curront Assets less Vepleciation	De Millions	(1 617 60)		10.502 07	(730 91)	C 1.010,01	21,020,10	575.55	1 300 09	21,104.00	5 611 98
		11,369.41	13,751.74	12,855.80	14,811.06	16,609.36	21,734.97	22,417.85	22,747.22	23,477.63	27,057.62
11. Net Capital Expenditure for year	Rs Millions	540.84	373.94	510.32	1,319.72	1,999.19	2,637.72	1,988.04	875.80	815.92	1,166.28
12. Financed by Outside Sources	Rs Millions	221.30	128.50	128.50	710.91	1.294.57	2,417.31	1.876.95	230.72	205.33	1,041.29
Internal Sources	Rs Millions	319.54	245.44	381.82	608.81	704.62	220.42	111.09	645.08	610.59	124.98
13. Gross Operating Surplus to Net Assets	%	1.86	2.89	6.71	13.36	10.58	8.88	6.07	9.17	10.20	16.21
	%	3.10	5.27	8.52	18.45	15.14	15.10	10.23	15.23	16.97	31.06
	%	(16.28)	(2.08)	(3.76)	9.64	7.52	15.10	0.73	7.12	10.17	12.21
16. Generation & Purchase Cost (excl dep) to Turnover	88	79.64 8 76	80.77	80.02 6 55	/17/1 5.05	74.87 5 75	78.04	80.34 5.03	73.45	71.13	58.19 6.43
	2 ;	5						5	000	7171	
	%	12.50	10.26	9.16	8.74	18.1	5.52	8.77	9.28	9.19	9.29
20 Interact on Lower / Oriented to Trucking	%	4./8	0T'C	4.18 2.78	1.72	1.28	0.41	0.95 70 C	0.8L	1.11	1 27 7 27
20. Interestion Loans / Overgran to Turnover 31 Not Deturn on Average Not Eived Accets in oneration	%	(0.42)	(01 1)	3.20	11.2	20.2	10.76	570	02 T	T0'T	8 29
21. Iter hetern on Average het i jaeu Assets in operation 22. Units lost to Units exported	%	8.39	8.56	9.48	7.52	7.02	6.83	7.66	7.19	6.94	6.67
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# SCHEDULE E

# FINANCIAL STATISTICS OVER TEN YEARS



# CENTRAL ELECTRICITY BOARD

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